Tablets, Smartphones & Cloud Computing

Phil Sorrentino
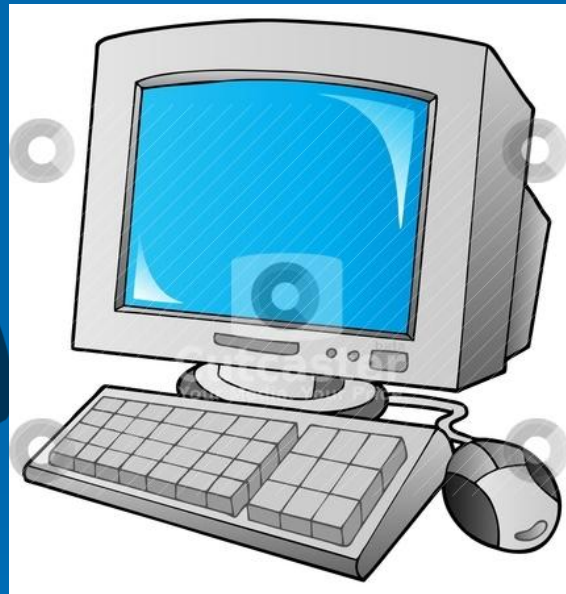
philsorr@gmail.com

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Computing before the Internet

Applications
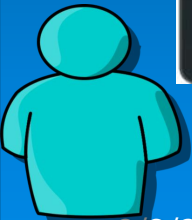
Word Processing
Spreadsheets
Graphics
Databases
Company email

Locally Installed &
Manually Updated

Then:

Computing Islands -with little communications
(maybe sneaker-net)

Computing with the Internet

Internet

Client ⟷ Server

World **W**ide **W**eb
Collaborate on Docs
Share Pictures & Videos
Search the Web
Send Texts (phones)
Social Networking (Facebook, Twitter)

Remotely Managed & Updated

Now:
Always On, Always Connected

Now: Computing Enablers

- Devices
  - Smartphones
  - Tablets
  - Netbooks (HP Stream)
  - Chromebooks (Browsers)

- Internet (Access)
  - Wi-Fi
  - Mobile (Cellphone) Networks

Tablets & Smartphones

Tablets are much like Computers, only <u>smaller</u>

(But, you can't really create complex files using them)

and

Smartphones are much like tablets, only <u>smaller</u>

(But, you <u>can</u> make phone calls, on them)

<u>Data Consumers</u>, rather than Data Producers

Tablets & Smartphones

Share
Many Features

Separate Features

➢ <u>Smartphone</u> Telephone/Radio Circuitry

➢ <u>Smartphone</u> Screen Size 4" to 6"

➢ <u>Tablet</u> Screen Size 7" to 12"

Shared Features

➢ Touch-sensitive screen

➢ 1+GHz multi-core processor

➢ Memory (Volatile, Non-Volatile)

➢ Rear-facing Camera (some)

➢ Front-facing Camera (most)

➢ Accelerometer/Magnetometer
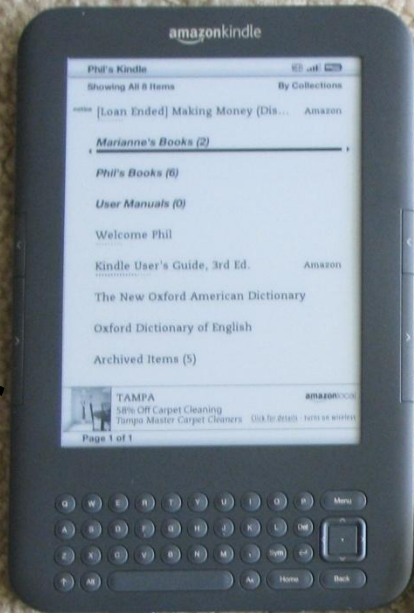
More Shared Features

- **Wi-Fi**   (Wireless-Fidelity) (2.4GHz 802.11b/g/n)   Microwave Apl frequency

- GPS   (Global Positioning System) (most)

- Bluetooth   (many)

- USB   (most)

- Micro SD memory slot (many)

- HDMI output (some)

- Headphone jack and built-in Speakers

- Microphone (phones obviously)
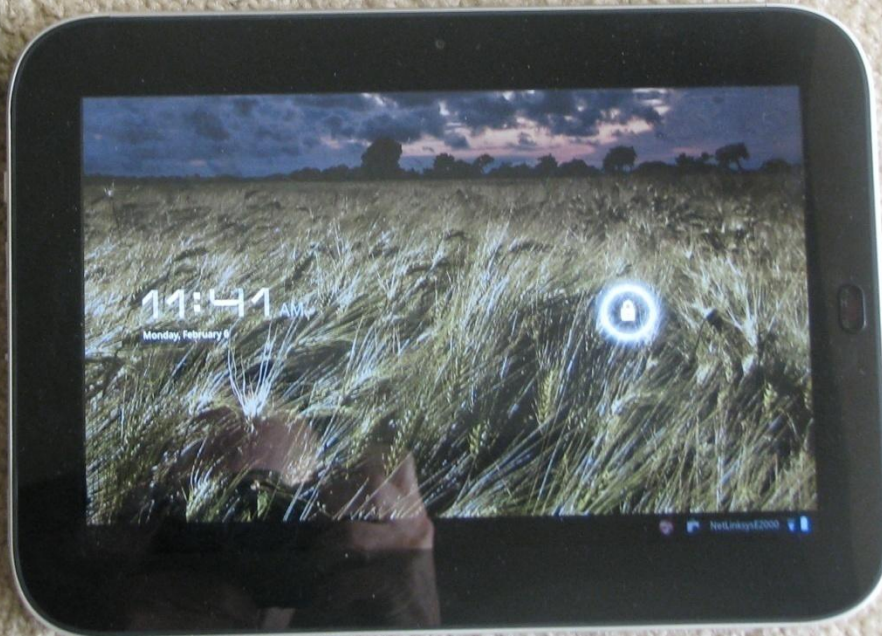
- Attachable Hardware keyboard (some Tablets)

Size Comparison

Kindle Reader

7" Tablet

10" Tablet

Smartphone

Diagonal Measurement

9/3/20

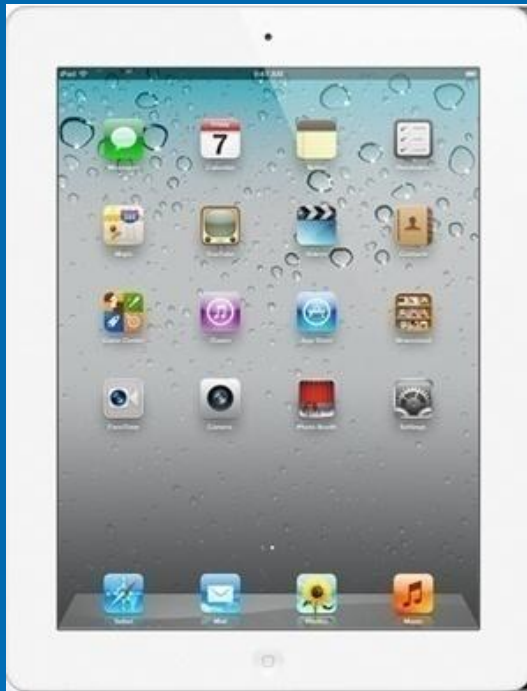# The <u>Operating System</u> determines the <u>Family of Devices</u>

Family
- Android
- iOS
- Windows

Manufacturer
- Google
- Apple
- Microsoft

Tablets

Apple
iPad

Android
Tablets

Windows
Tablets

SmartPhones

Apple
iPhone

Android
Phones

Windows
Phones

SmartPhone Evolution

80s   90s   2000s   2007-

Blackberry

iPhone

BagPhone

First Mobile Device

The Value of the Device is Increased by its

Access to the Internet

Without it, your Device
would be down quite a few IQ points

What is the Internet?

➢ A <u>global communication network</u> that allows computers worldwide to connect and exchange information.

➢ "The most important single development in the history of human communication since the invention of call waiting."   Dave Barry

➢ "The Internet is just a world passing around notes in a classroom."   John Stewart

Data Connections to the Internet

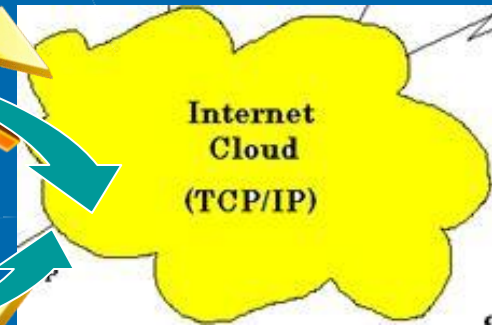➤ <u>Wi-Fi</u> (Typically <u>No Cost</u>)   (Tablet & Smartphone)

- Your Home
- Public Locations
  - Airports, Hotels, Libraries, Shopping Malls
  - Starbucks, Panera Bread, McDonalds, etc.
  - CA Buildings (Computer Club)

➤ <u>Cell Phone Network</u> (Smartphone only)

- 3G or 4G   (Cost depends on data plan)

Data Connection to the Internet

Cell Network
(Data Plan Cost)

Phone Only

Tablet or Smartphone

Internet Cloud (TCP/IP)

Cloud

Tablet or Smartphone

Wi-Fi
(No Extra Cost)

My Internet Speed

Wi-Fi Connection to the Internet

Internet Cloud (TCP/IP)

ISP

Slowest Link
10-50Mbps Download
1-25Mbps Upload

Tablet or ← → Wi-Fi Router ← → Modem ← → Internet

Smartphone   >70Mbps   100Mbps
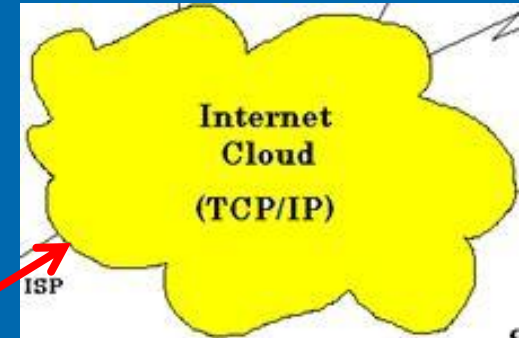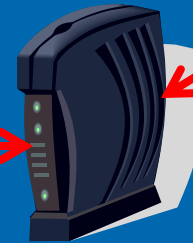
Data Connection Speed

- ➤ <u>Wi-Fi</u>
  - Internet Service Provider
    - Verizon   25Mbps (down), 25Mbps (up)
    - Brighthouse   10Mpbs (down), 1Mbps (up)
  - 802.11n   - 70 Mbps
  - 802.11ac   - 400 Mbps
- ➤ <u>Cell Phone Towers</u>
  - 3G –   1 - 2Mbps
  - 4G –   8 - 10Mbps
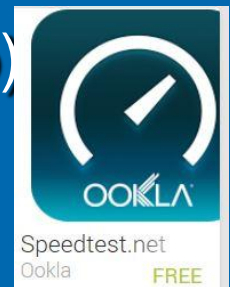
Speed Test

(www.ookla.com)

Tablets
+ Smartphones
+ Internet
___

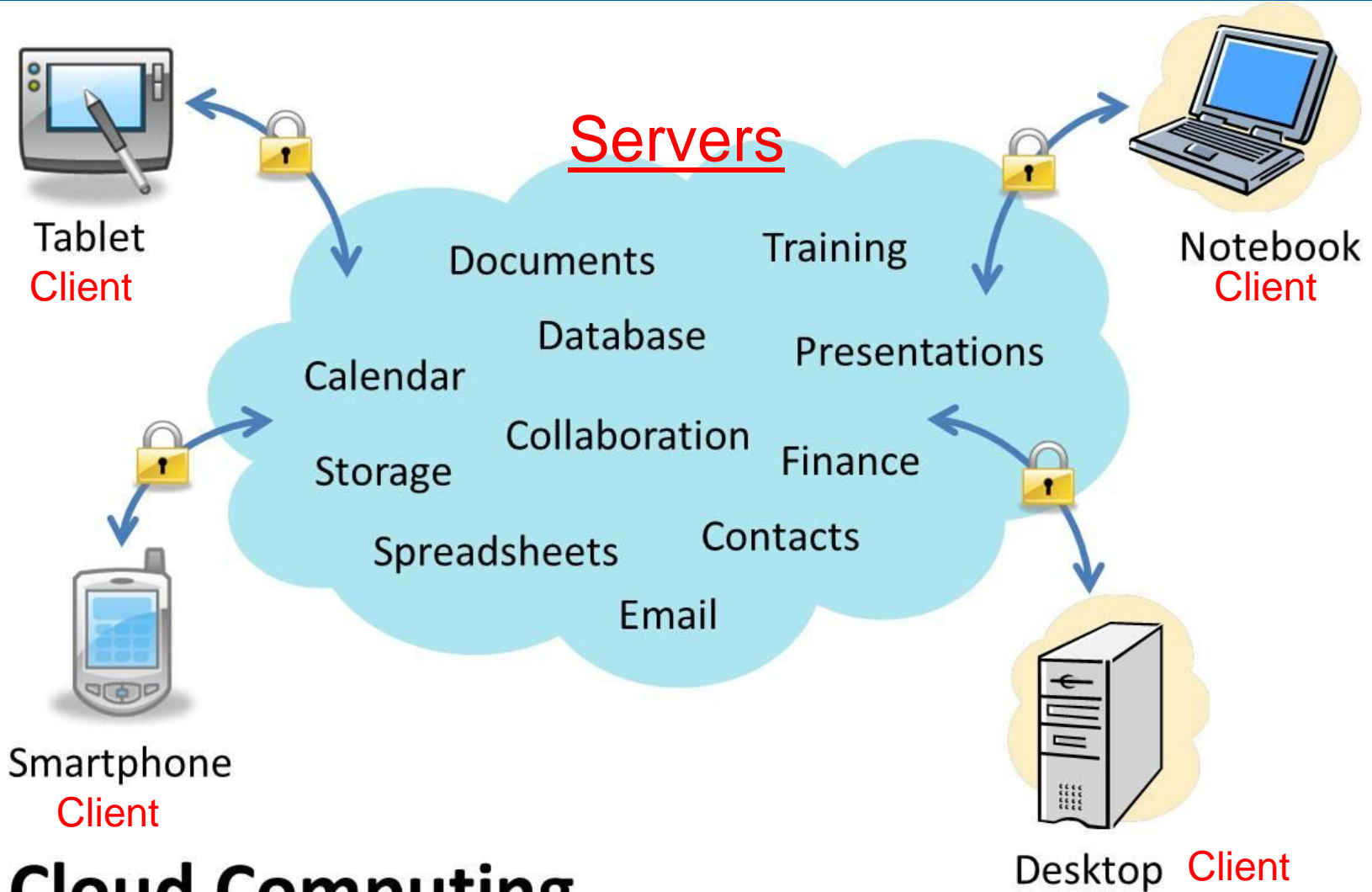# = Cloud Computing

Cloud

Cloud Computing
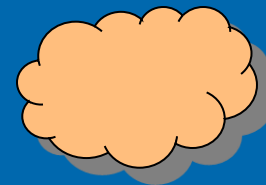
➢ In the simplest terms, cloud computing just means <u>storing and/or accessing data and programs over the Internet</u> instead of using only your computer's local storage

➢ The Internet (A network of networks)
- Employs **Client – Server** Technology
- Runs the **TCP/IP** set of protocols

Internet
Cloud
(TCP/IP)

ISP

Cloud Computing

Servers

Tablet
Client

Notebook
Client

Documents

Training

Database

Presentations

Calendar

Collaboration

Finance

Storage

Contacts

Spreadsheets

Email
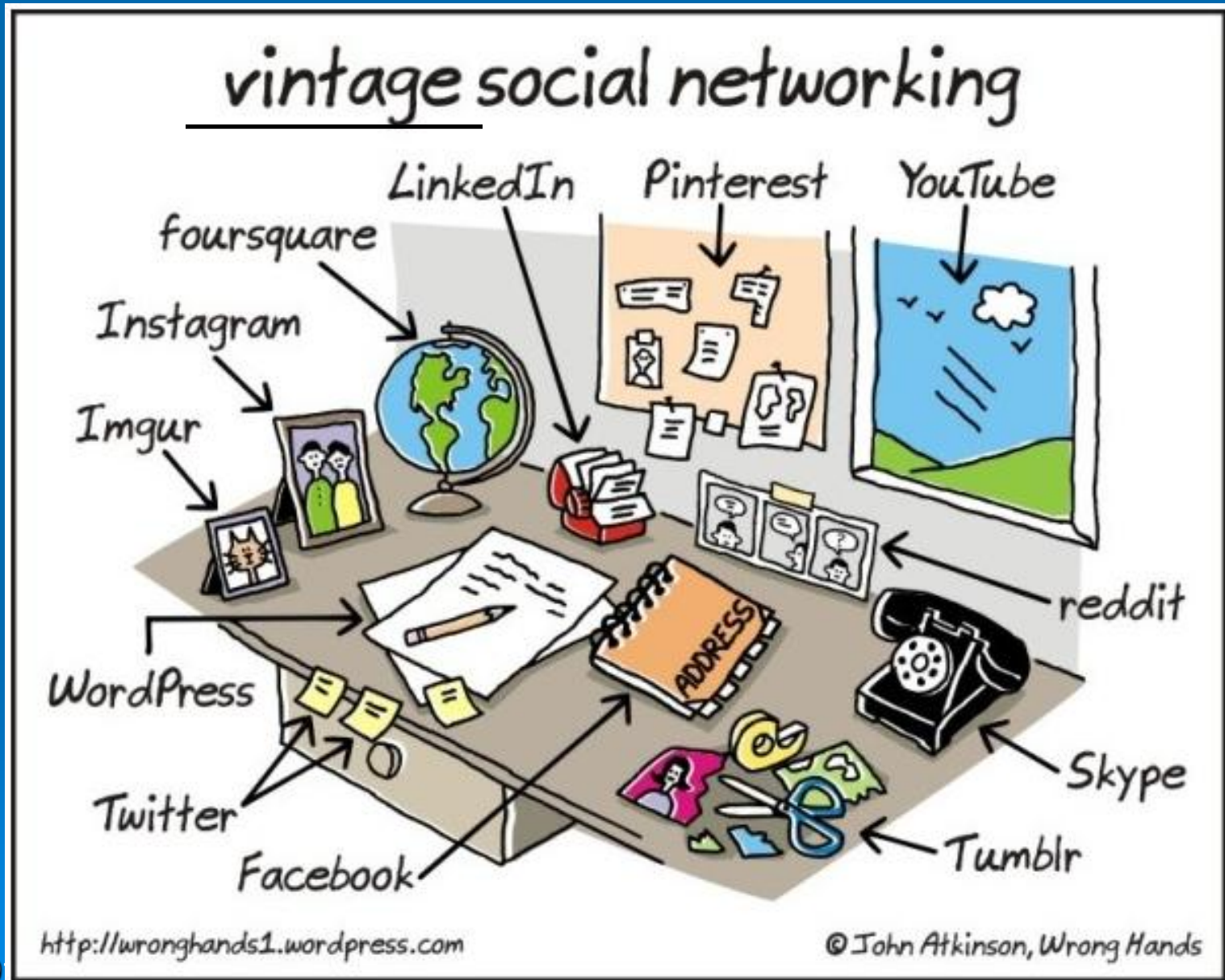
Smartphone
Client

Desktop Client
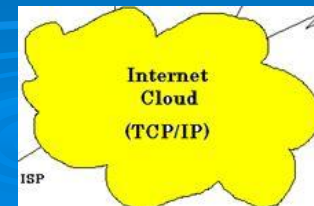
Cloud Computing

Having secure access to all your applications and data from any network device

Cloud Computing.. is not new

➢ Email (Gmail, Yahoomail, Hotmail)

➢ Internet Search (Google, Bing)

➢ Photo Sharing (Shutterfly, Flickr)

➢ Maps & Location (Google Earth)

➢ Large File Transfer (OneDrive)

➢ Social Networking (Facebook, Twitter)

➢ Backup Services (Carbonite)

➢ Banking and Financial Services

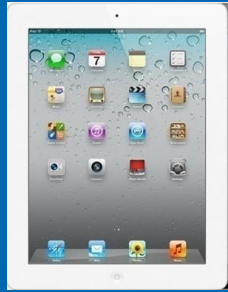➢ Document collaboration (Google Drive)

Social Networking

vintage social networking

foursquare
Instagram
Imgur
LinkedIn
Pinterest
YouTube
WordPress
Twitter
Facebook
reddit
Skype
Tumblr

http://wronghands1.wordpress.com

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Cloud Computing uses
Client – Server
Technology

Clients

Servers

Internet

9/3/2015

Client – Server Technology

- A <u>network architecture</u> in which each computer in the network is a Client or a Server.

- A Server runs a server program and <u>shares its resources</u> with clients

- A <u>client requests</u> a server's action.

- <u>Clients initiate</u> communication sessions with servers which await incoming requests.

- Website computers act as <u>Servers</u>.

- Your device acts as the <u>Client</u>.

Teller Example

Client – Server at a Bank

Client

Protocol

Server

Customer

Teller

I would like to make a Withdrawal ➡️

⬅️ What is your Account Number?

My Account Number is 654321 ➡️

⬅️ How Much would You like to withdraw?

$100 ➡️

Teller Checks to see If Account has $100

⬅️ Here is your $100 Have a nice day, Next
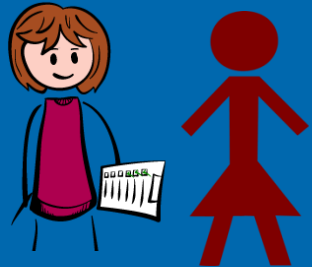
Next Customer Line

TCP/IP (built into the device)

- Transmission Control Protocol/Internet Protocol
- Provides end-to-end connectivity
- Specifys how data should be:
  - packetized
  - addressed
  - transmitted
  - routed
  - received (at the destination)
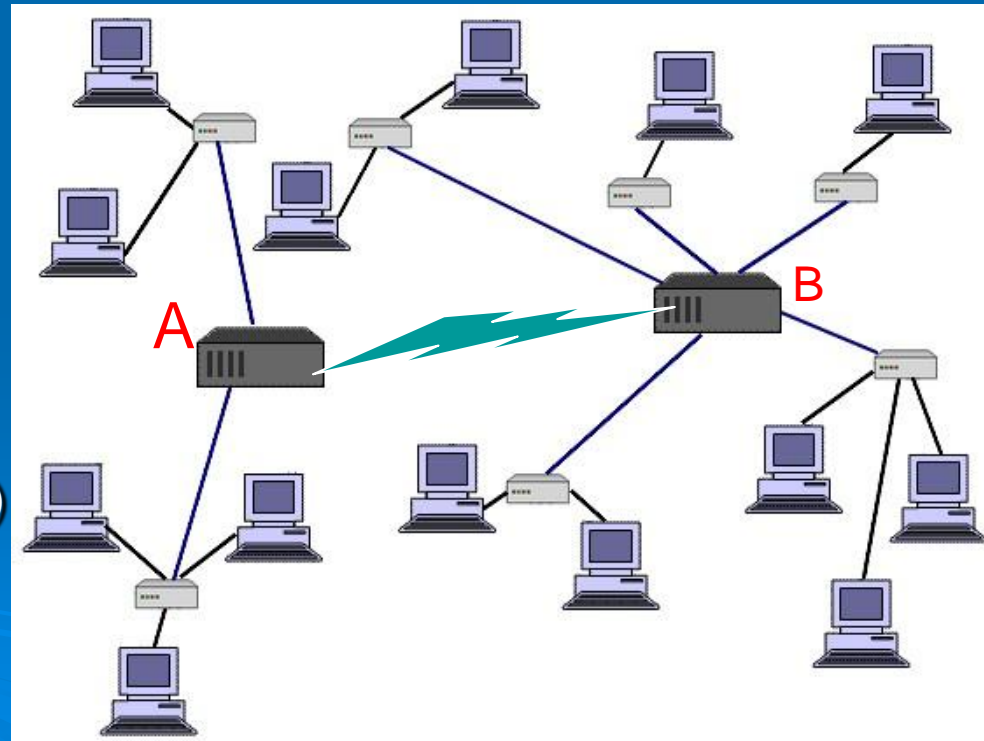
Client → **TCP/IP** → Server

Client		Server
Manager-A		Manager-B
Assistant		Assistant
Secretary		Secretary
Driver		Driver
Sorting		Distribution
Packaging		Unpacking
Loading		Unloading
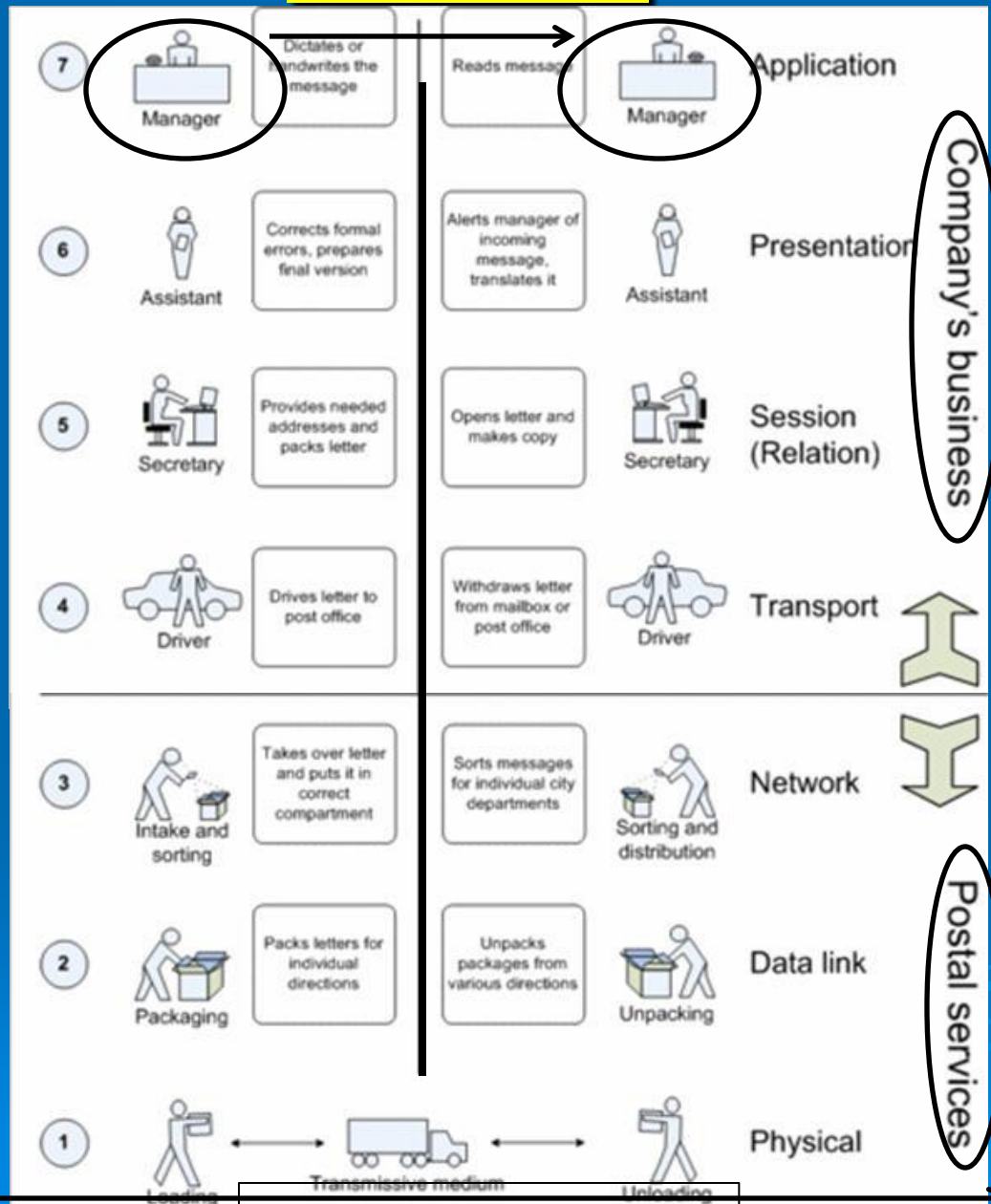
Transportation

Cloud Computing Service

➤ Personal Storage (free)

- OneDrive   (Microsoft)
- Google Drive   (Google)
- Dropbox
- Box
- Sugar Sync
- Evernote
- iCloud
- Amazon, Etc.

20GB

2GB

5GB

60MB/month

15GB

Google Drive

5GB
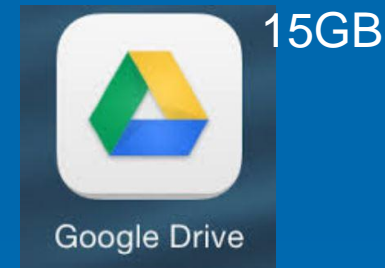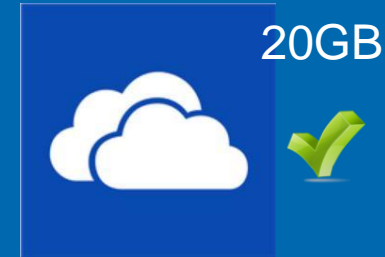
OneDrive App for Tablet or SmartPhone

➢ Find the App Store on the Home Screen

Android
PlayStore

➢ After the App Store opens, Touch "Search"

- Type "OneDrive", Touch "Enter"

- Find OneDrive App, Touch OneDrive App

- Touch "Install"

OneDrive

OneDrive for the Computer

➤ Using a Browser, goto:

- Onedrive.live.com

Create an Account

Sign Into your OneDrive Account

OneDrive Account –Pictures folder

Store your Pictures, Videos, Documents in the Cloud and Access them from all of your devices

Cloud Computing -- Big Business
(Microsoft, Apple, Google, IBM, Amazon, Facebook)

➢ ## Software as a Service

- A software distribution model in which applications are hosted by a service provider and made available to customers over the Internet. (Windows 10 ?)

➢ ## Platform as a Service

- Allows a customer to develop, run and manage web applications without building and maintaining hardware and software.

➢ ## Infrasturcture as a Service

- provides all the equipment needed to support operations, including storage, hardware, servers and networking.

Apps
really make the Tablet or Smartphone Perform on the Internet

What can you do with your Apps?

Average User- 90+ Apps

➢ Take, and Share <u>Pictures</u>

➢ Watch <u>Movies</u>

➢ Listen to <u>Music</u>

➢ Check your <u>e-mail</u> or <u>calendar</u>

➢ Read the latest <u>books</u>

➢ <u>Keep in touch</u> with People

- Facebook, Twitter, Skype, Text, Talk

➢ <u>Find the nearest restraunt, gas station, etc.</u>
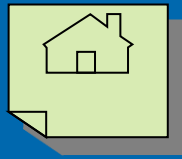
➢ <u>Shop</u>

Apps vs. Computer Software

Apps

- Simple, single purpose
- Don't (usually) create files
- Data Consumer
- Easy to use
- Few Instructions
- $10 and less

Software

- Complex, Multi-Function
- Typically create files
- Data Creator
- Need Tutoring
- User Manual
- $10 and much more

Local vs. Cloud Apps
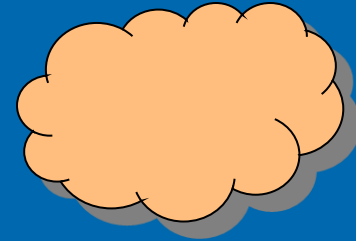
➤ Local (No connection)

- Microsoft Office
- Stored Pictures
- Stored Video
- Watch DVD video
- mp3 music player
- Backup to DVD
- Photoshop

➤ Cloud (login usually needed)

- Office 365, Google Docs
- Store Pictures on Onedrive
- YouTube
- Netflix
- Pandora, Spotify
- Carbonite Backup
- Flickr
- Email
- Google Earth
- Facebook, Twitter

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Apps & Widgets

➢ **Apps**

- Software applications designed to run on mobile devices, such as tablets and smartphones.

- Available through application distribution platforms, such as Google Play (and iTunes).

- Many apps are free, many others are under $10.

- Downloaded directly to the target device.

  - (The term "app" has become very popular, and in 2010 was listed as "Word of the Year" by the American Dialect Society)

Apps & Widgets

➢ **Widgets**

- a small, single function computer program, that provides a real-time display of information.

- Examples are:

  Originally, there were no Widgets in iOS

  - Clock, Calendar, Battery level
  - Weather (specific location)
  - Sports scores

➢ App vs. Widget

- Apps need to be opened.
- Widgets are always open, providing information

Downloading Apps

- **App Store**
  - Google
  - Amazon
  - Apple
  - Microsoft
- **Need an Account with App provider**
  - User Name, Password
  - Credit card (for $ purchases)
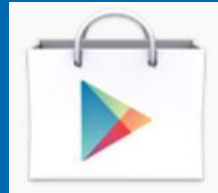
Downloading vs. Streaming

- ## **Downloading**
  - Receive a file, consisting of packets, and reconstruct the file and store it for future use

- ## **Streaming**
  - Receive a file, consisting of packets, and process the pieces as they are received (File is usually not stored)

Apps are Constantly Updated

➢ Automatic or Manual Updating

- Go to the Google Play Store

- Touch the Play Store Icon

- Touch My Apps

- Select App

  - Android 4.4 -Touch Menu ⋮ >Check Auto Update

- Check "Allow Automatic Updating" for automatic updates

- Uncheck "Allow Automatic Updating" for manual updates

Apps and Media

Pictures

Videos

Music

Books

To Enjoy the Media You Need a Player App
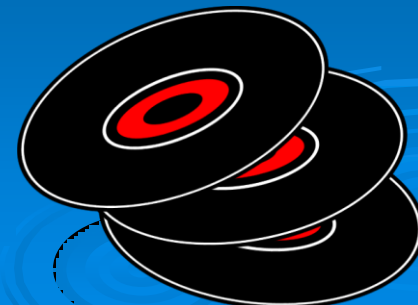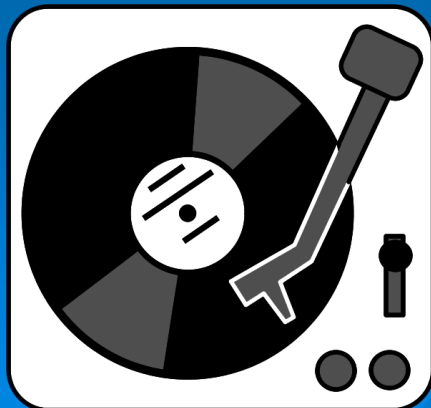
Media

Pictures, Videos, Music, Books

➢ **Media**   File Formats   **Player App**

- Pictures   **.jpg**, .png, .bmp,…   Photos

- Videos   .wmv, .avi, **.mp4**,…   VLC Player

- Music   **.mp3**, .wma, .wav,…   Music Player

- Books   .epub, .mobi, **.azw**   Kindle

Other Books
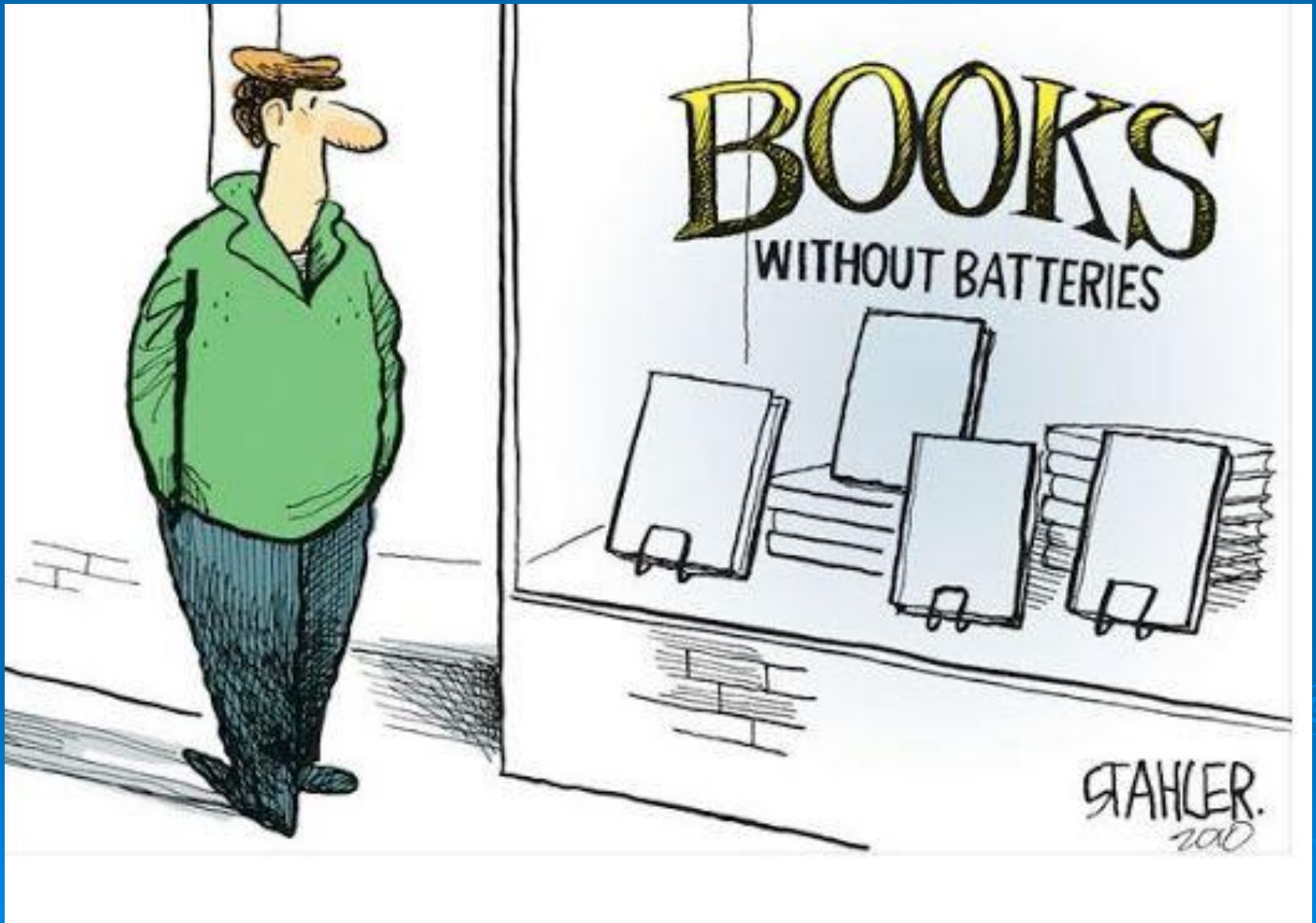
2 Cameras Included

- Rear Camera
  - High Quality Pictures
  - Up to 5X zoom

- Front Camera
  - Selfies
  - Skype

Camera App (to create pictures)

➢ To start the Camera App

➢ Tap "Camera" App Icon

➢ Front Camera – Rear Camera

➢ Camera Settings

➢ Still Pictures – Movies

Take picture by tapping Camera Icon or Screen

Working with Pictures

- ➢ Try a Few Picture Viewer <u>Apps</u>
  - • Quickpic
  - • Gallery
  - • Photos
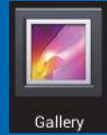
- ➢ <u>Move</u> pictures to your computer
  - • Upload to a Cloud Account
  - • <u>Wi-Fi File Transfer</u> App

- ➢ <u>Find them</u> using the Astro File Manager
  - • Look for sdcard or sdcard0 or ExtSDcard
    - • DCIM (Digital Camera Image)
      - • Camera

Similar to Windows Explorer

Apps for Everything
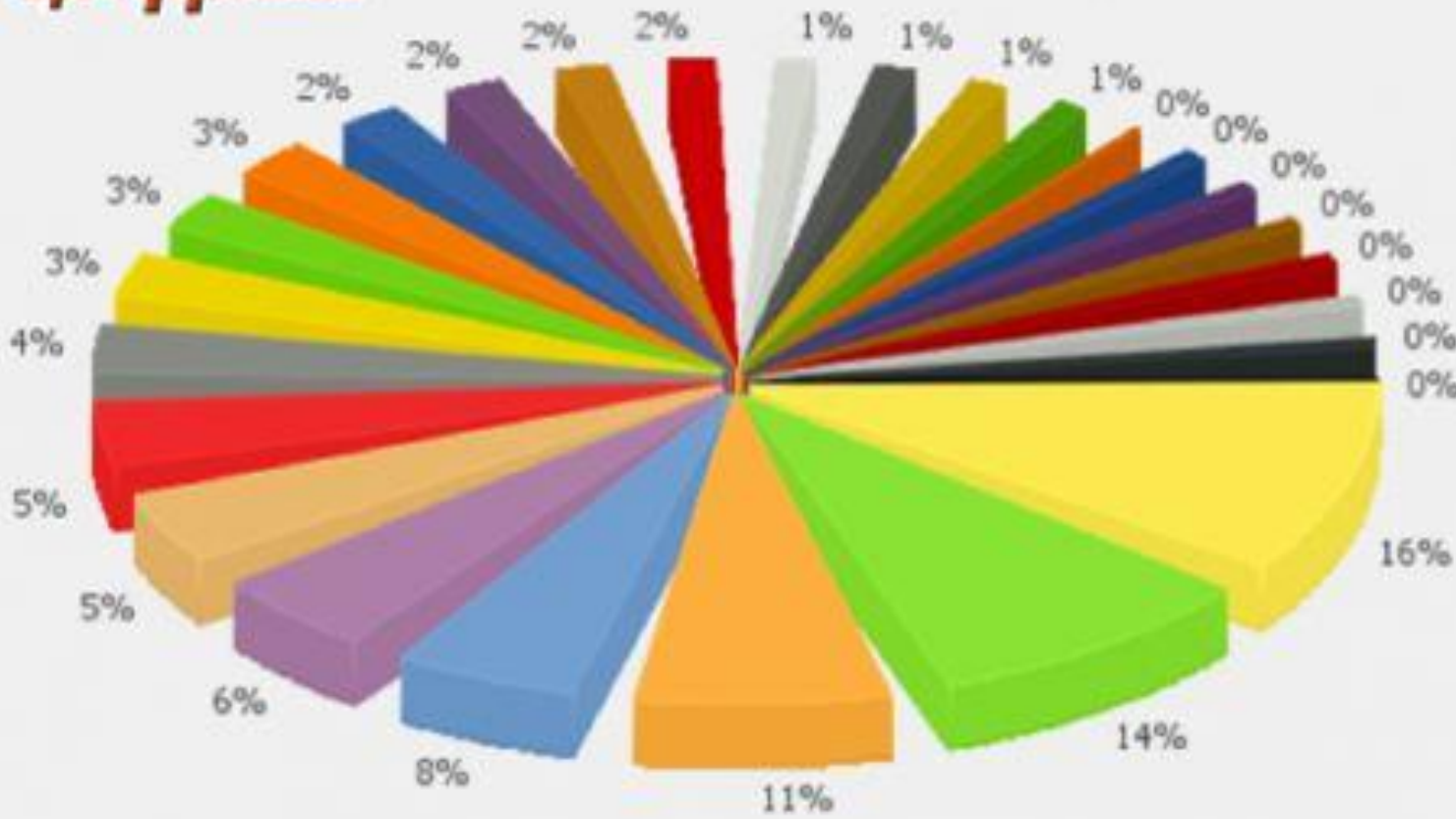
Android Apps by Category
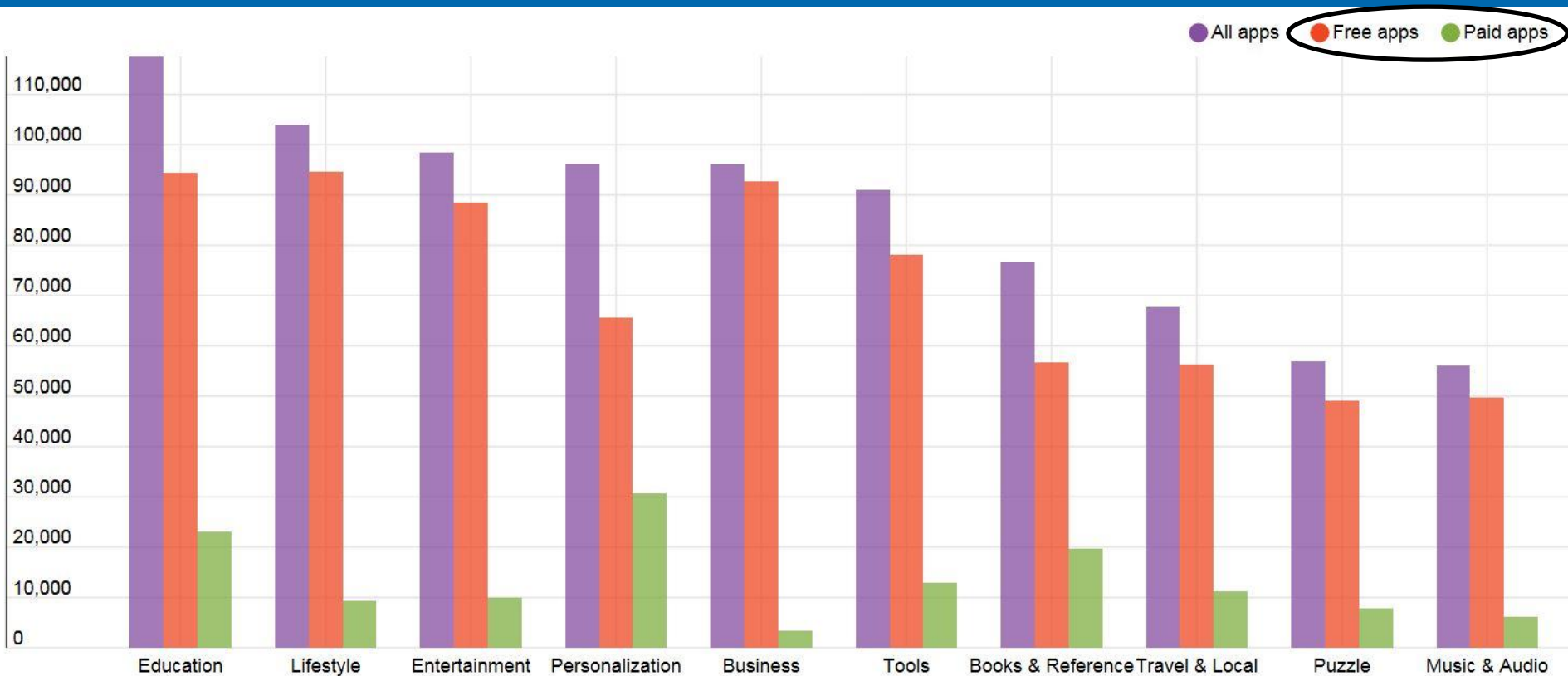
April 2015

General App Categories

Information

- Utilities
- Productivity
- Reference
- News
- Finance
- Medical
- Education
- Weather
- Travel

Entertainment
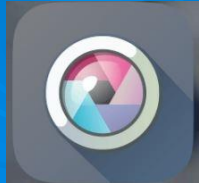
- Music
- Photography
- Videos
- Sports
- Social Media
- Books
- Games

Sliced
&Diced

Useful Apps

- E-Mail (Gmail, YahooMail)

- Calendar (Sync to gmail calendar)

- Maps & Location (Google Earth)

- YouTube

- Skype (Video Phone Calls)

- PDF Reader (Adobe)

- Doc, Excel Reader (Docs to Go, Kingsoft)

- Cloud Storage (OneDrive, Dropbox, Box)

- Language Translation (Google Translate)

Useful Apps (continued)

➢ Facebook, Twitter, Pinterest, Instagram (Social Media)

➢ Bar Code, QR Code (Code Reader)

➢ Netflix , Hulu Plus, Redbox (Streaming Video)

➢ IMDB (Internet Movie Database)

➢ Pandora (Streaming Music)

➢ News (ABC, CBS, NBC, MSNBC, News360)

➢ Weather (The Weather Channel)

➢ Games (Angry Birds, Pinball, Sudoku, Chess)

➢ Photo Enhancement (Pixler Express)

<u>Anti-virus and Malware</u>

(Unfortunately there is a need)

➢ AVG, Avast

➢ TrustGo

➢ 360 Mobile Security

➢ CM Security

➢ Lookout

<u>Note:</u>
Only one Virus App installed at a time.

➢ Google Malware Scanner

- For other than the Google Store
- Go to Settings-Security-Verify

<u>P</u>otentially <u>U</u>nwanted <u>P</u>rograms

Not all Cookies are Bad

Many help your Internet experience

Questions ?