

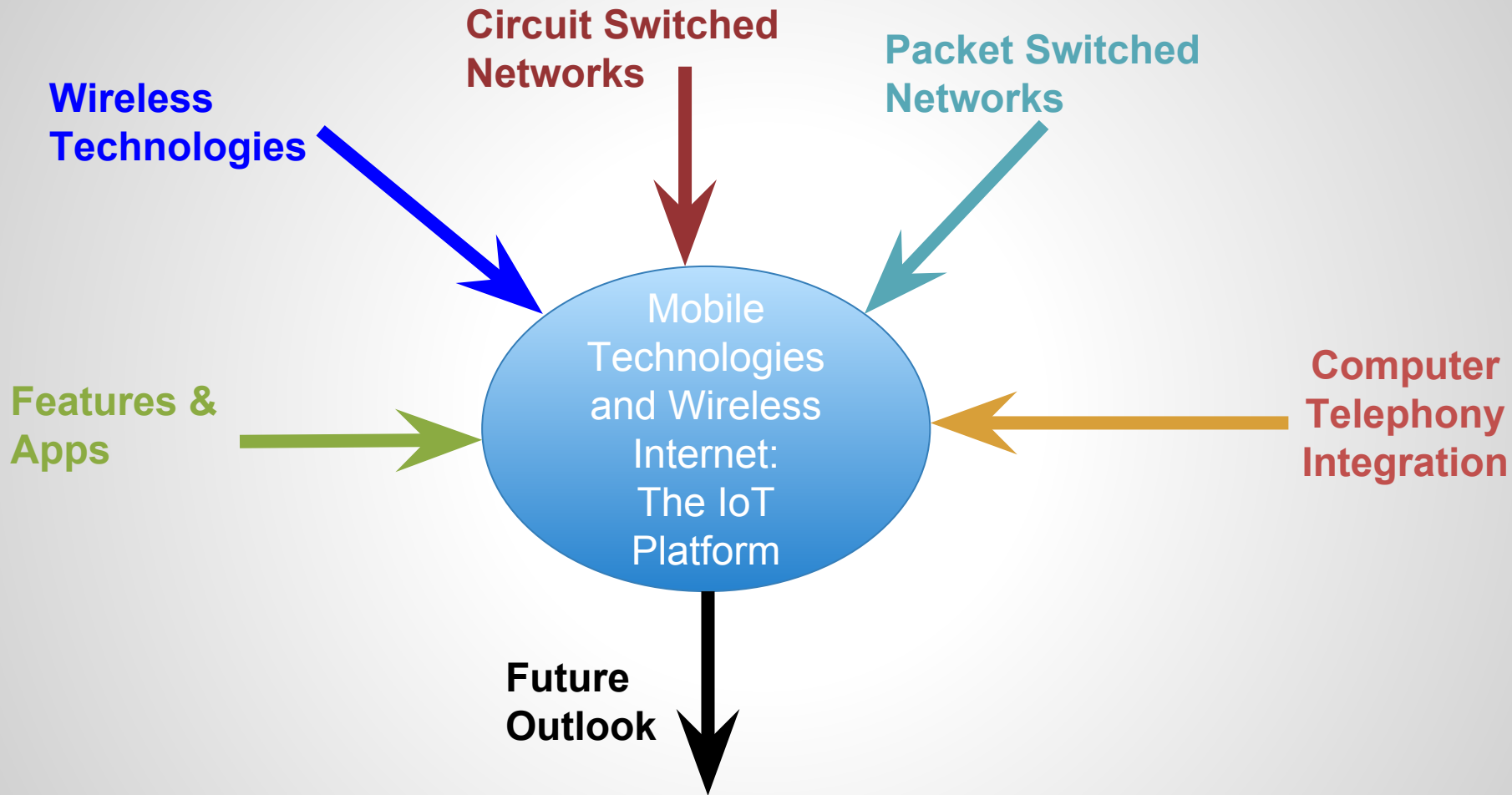
# **Internet of Things:**

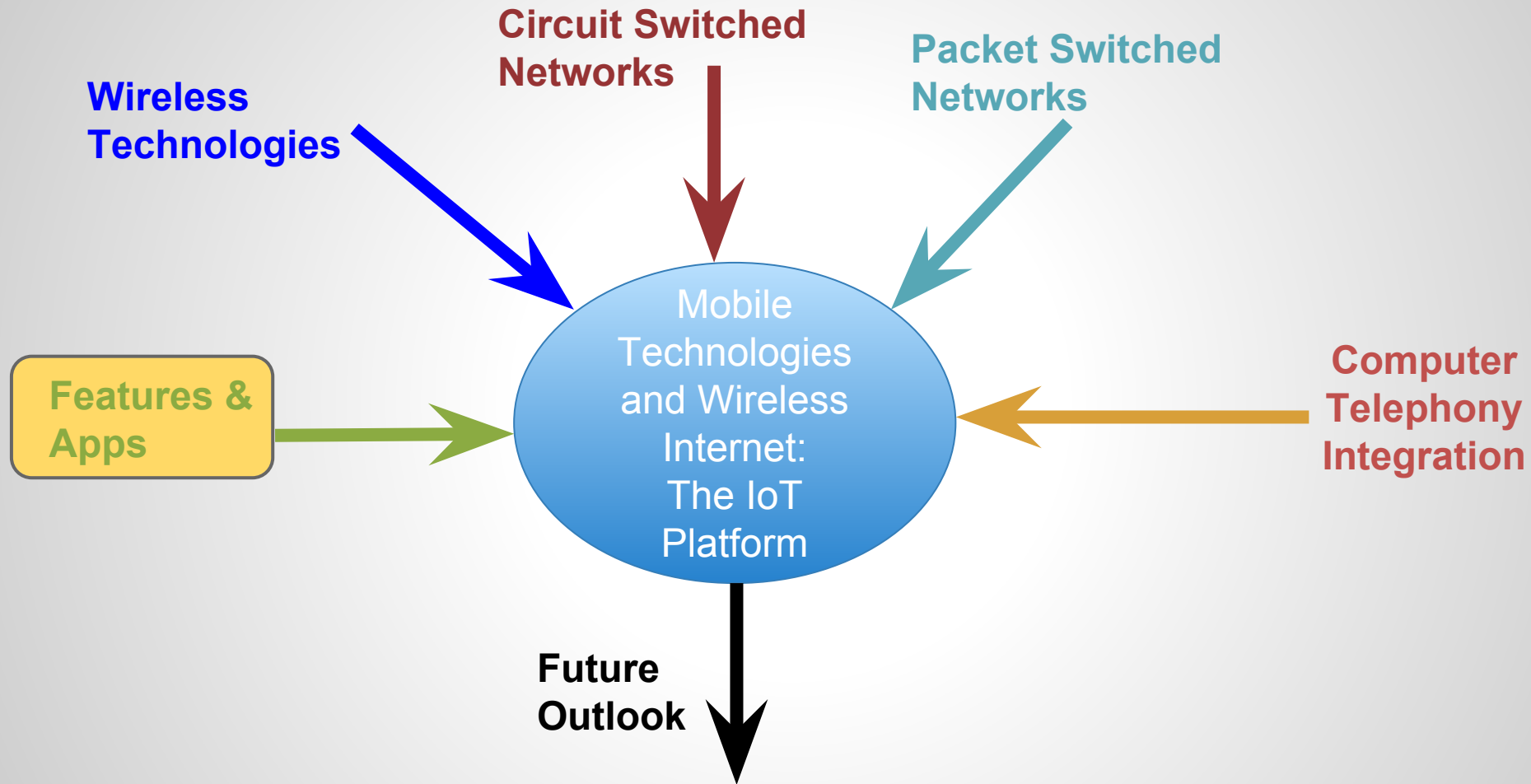
## **Features and Apps**

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Qualcomm Institute of Calit2  
University of California, San Diego






# Module | Assignment

Do not screen cast this slide

# Module 5 | Features and apps

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# **Internet of Things:**

## **A Historical Perspective**

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# Lesson 1

Features and Apps

# Lesson 1 | Features and Apps

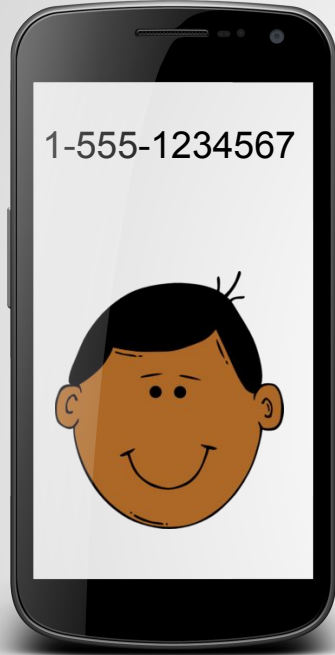
- 1 - Solutions Looking for Problems
- 2 - Unintended Consequences
- 3 - Phones get GPS
- 4 - Phone gets Cameras, Accelerometers etc...
- 5 - Voice is not the killer app anymore?



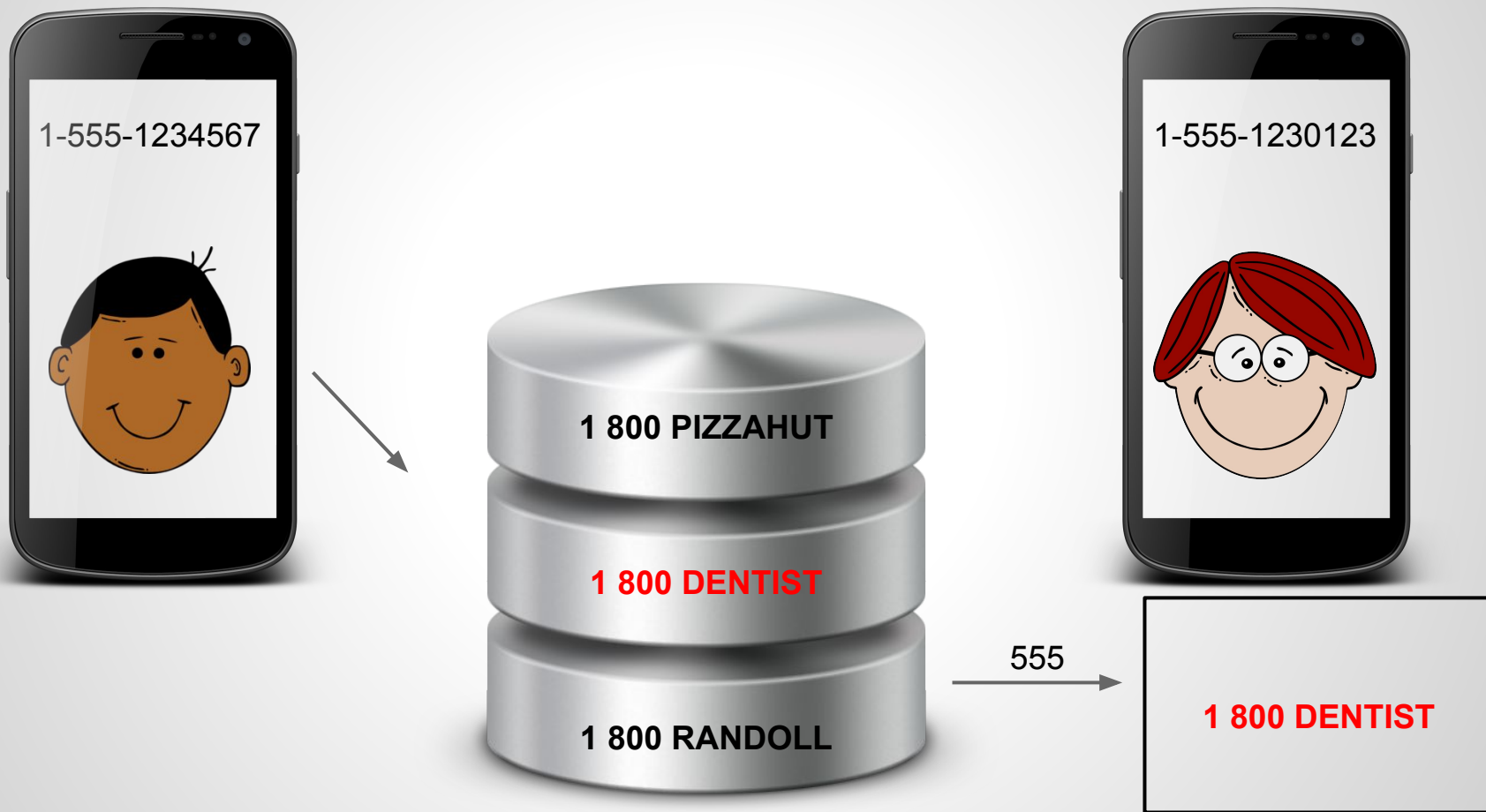


# 1 - Solutions Looking for Problems

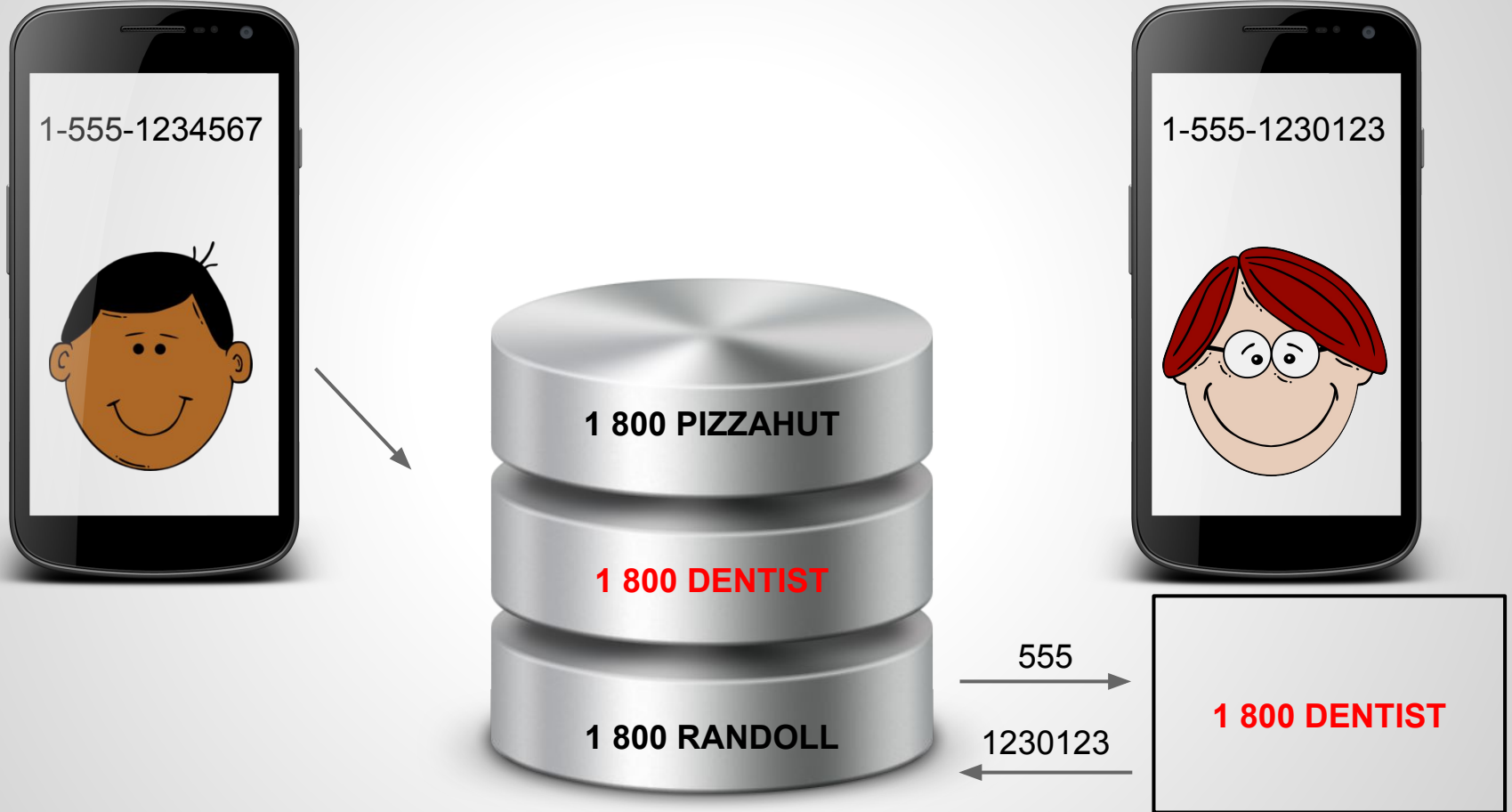
# 1 | Solutions Looking for Problems



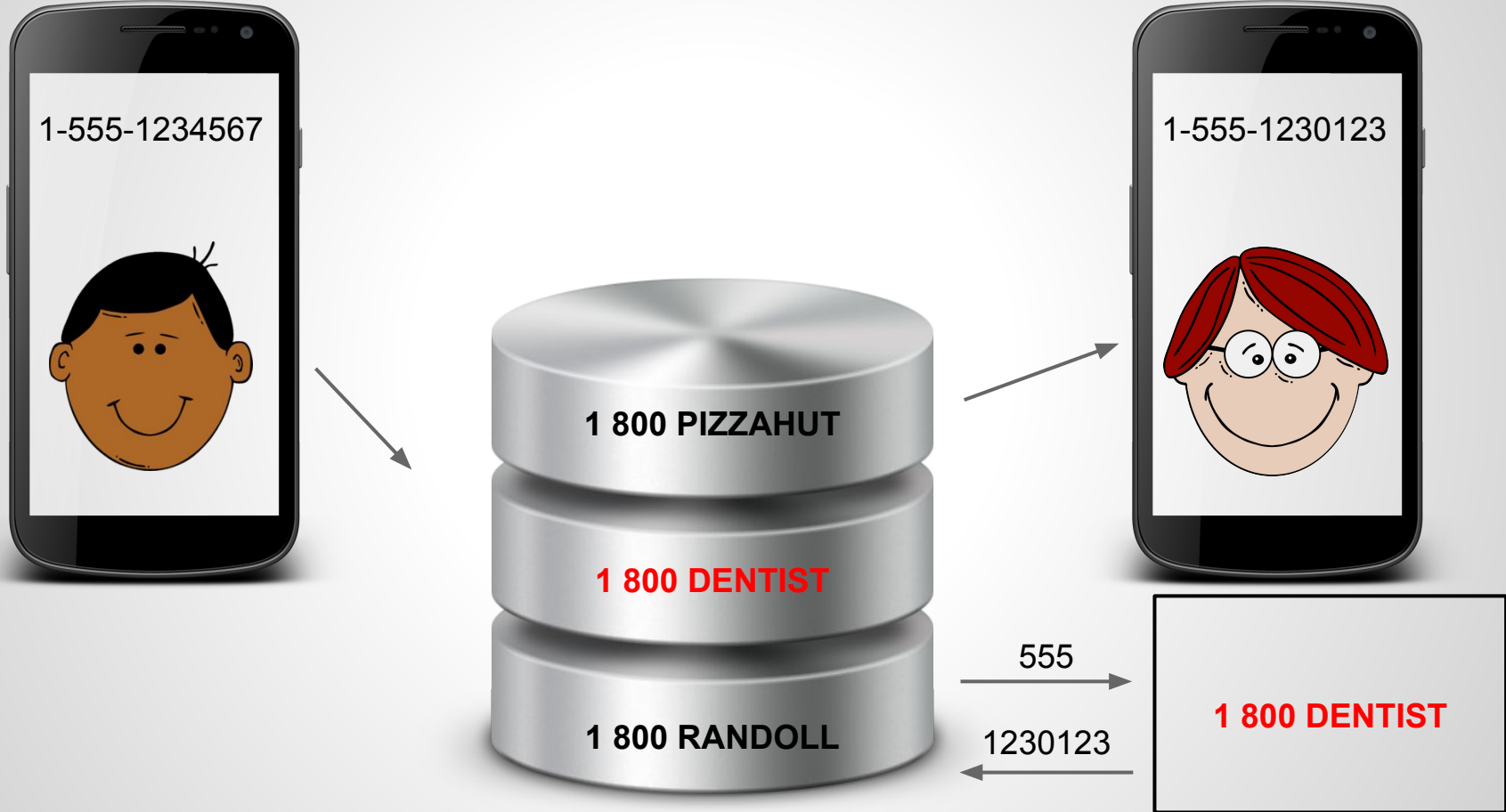
# 1 | Solutions Looking for Problems



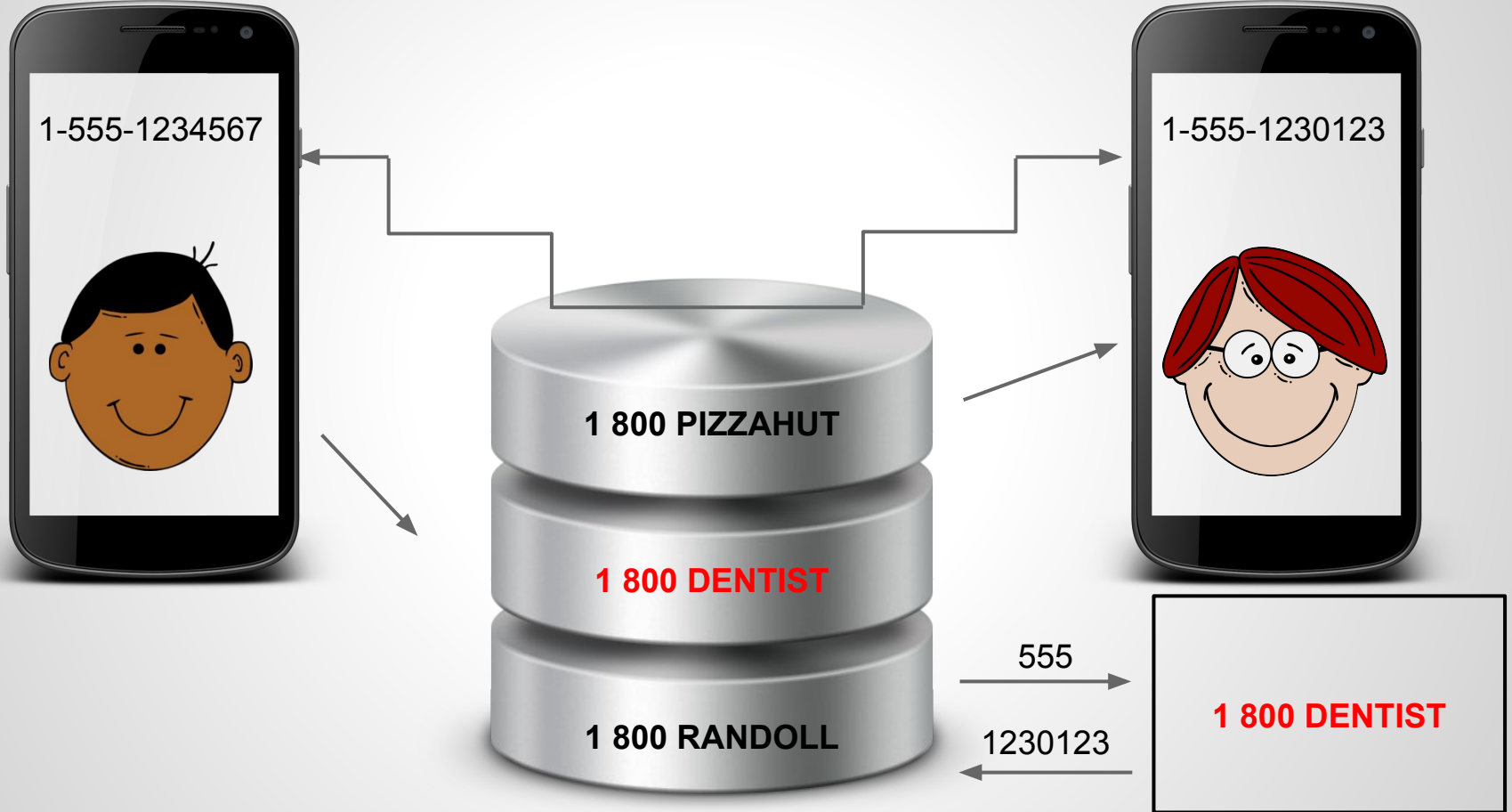
# 1 | Solutions Looking for Problems



# 1 | Solutions Looking for Problems



# 1 | Solutions Looking for Problems



## 1 | Solutions Looking for Problems

\*69 – the phone stopped ringing, just as you got to it; you can call them back

\*66 – the other side is busy; the switch will keep calling them for 30 minutes and connects you when they become free

\*60 – you can have your phone not ring when in-laws call (up to 10 numbers)

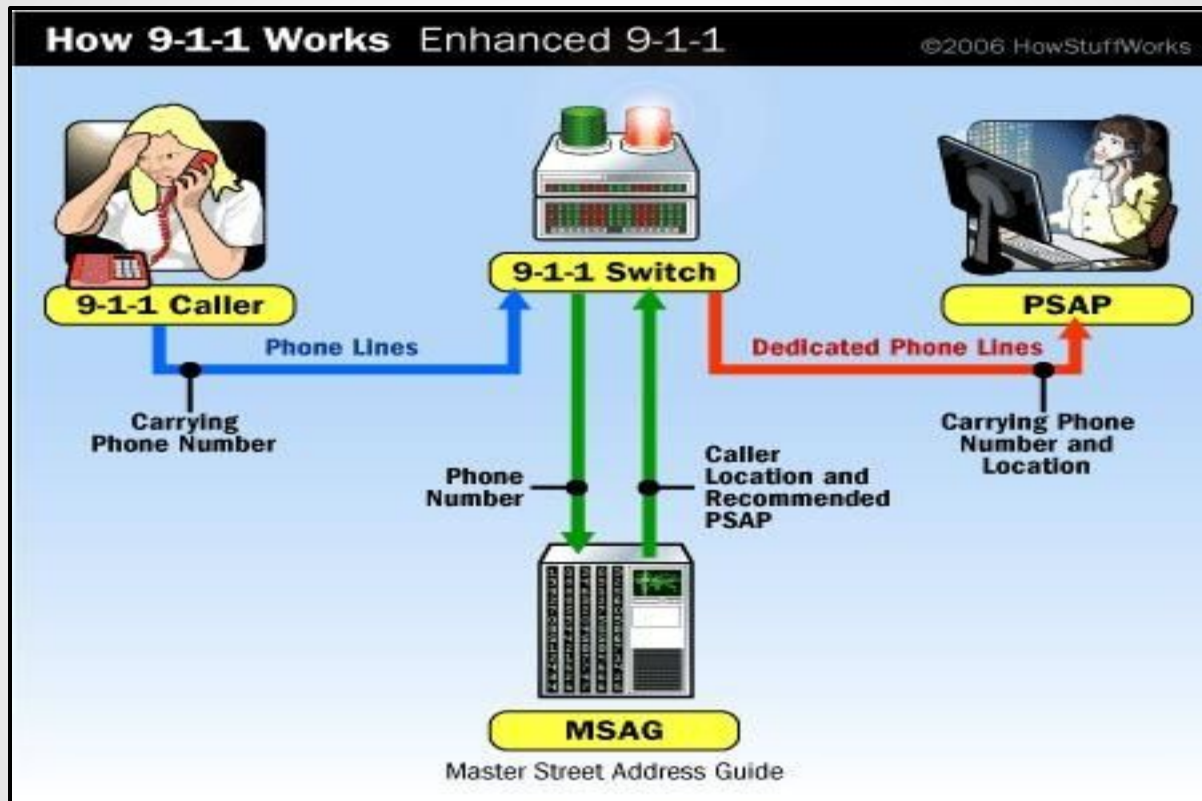
## 2 - Unintended Consequences



## 2 | Unintended Consequences



## 2 | Unintended Consequences



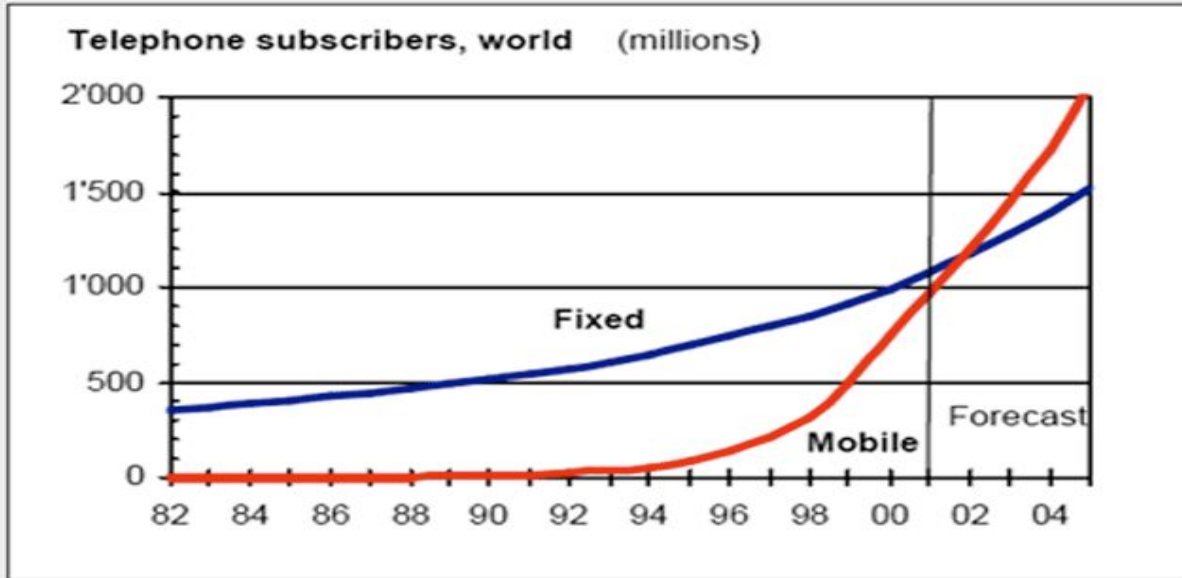
## 2 | Unintended Consequences



## 2 | Unintended Consequences

### Mobile as the new global network

*Mobile and fixed telephone subscribers worldwide, 1982 - 2005*



Source: "Executive Summary," World Telecommunication Development Report: Reinventing Telecoms (2002), ITU World Telecommunication Indicators Database.

## 2 | Unintended Consequences

# FCC E911 Mandates to Operators (1996)

- Phase I (April 1998)

- Complete all 911 calls**, even if the mobile does not have subscription
- Report **cell number** and **cell tower location** to PSAPs

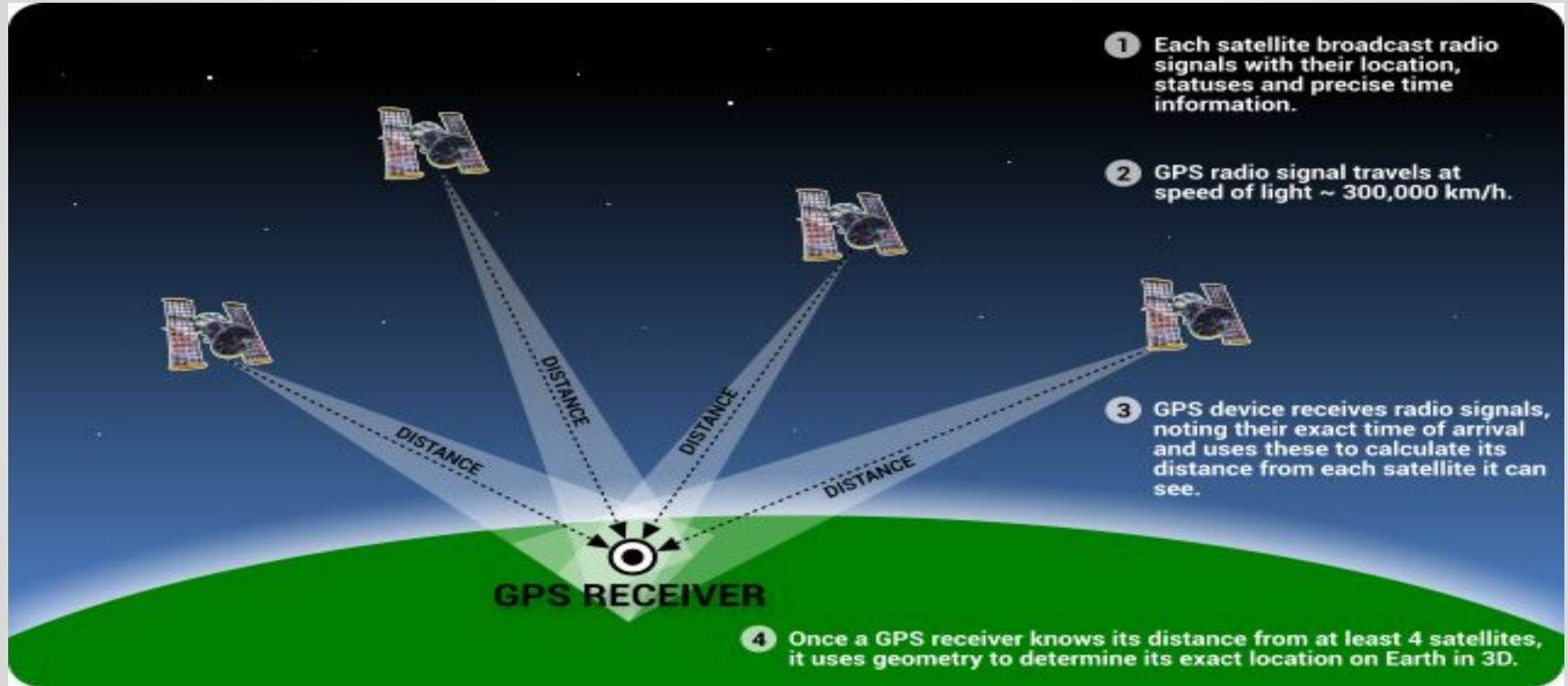
- Phase II

- 95% penetration of **Automatic Location Identification (ALI)** capable handsets by 12/2005
- Handset based: 50 meters for 67% of calls; 150 meters for 95% of the calls
- Network based: 100 meters for 67% of calls; 300 meters for 95% of the calls

## 3 - Phones get GPS



### 3 | Phones gets GPS



### 3 | Phones gets GPS



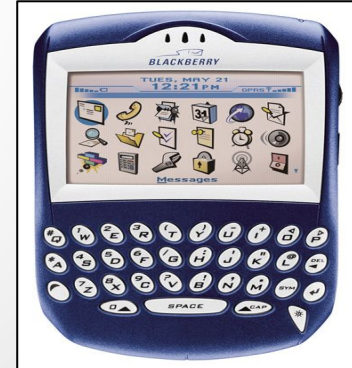
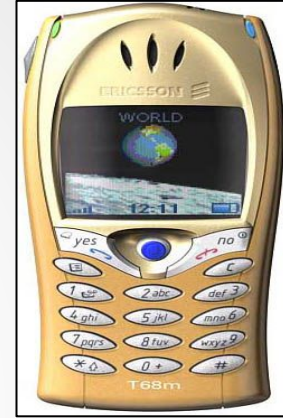


4 - Phones get Cameras, Accelerometer,  
etc...

## 4 | Phones gets Camera, Accelerometer, etc...



## 4 | Phones gets Camera, Accelerometer, etc...



## 4 | Phones gets Camera, Accelerometer, etc...



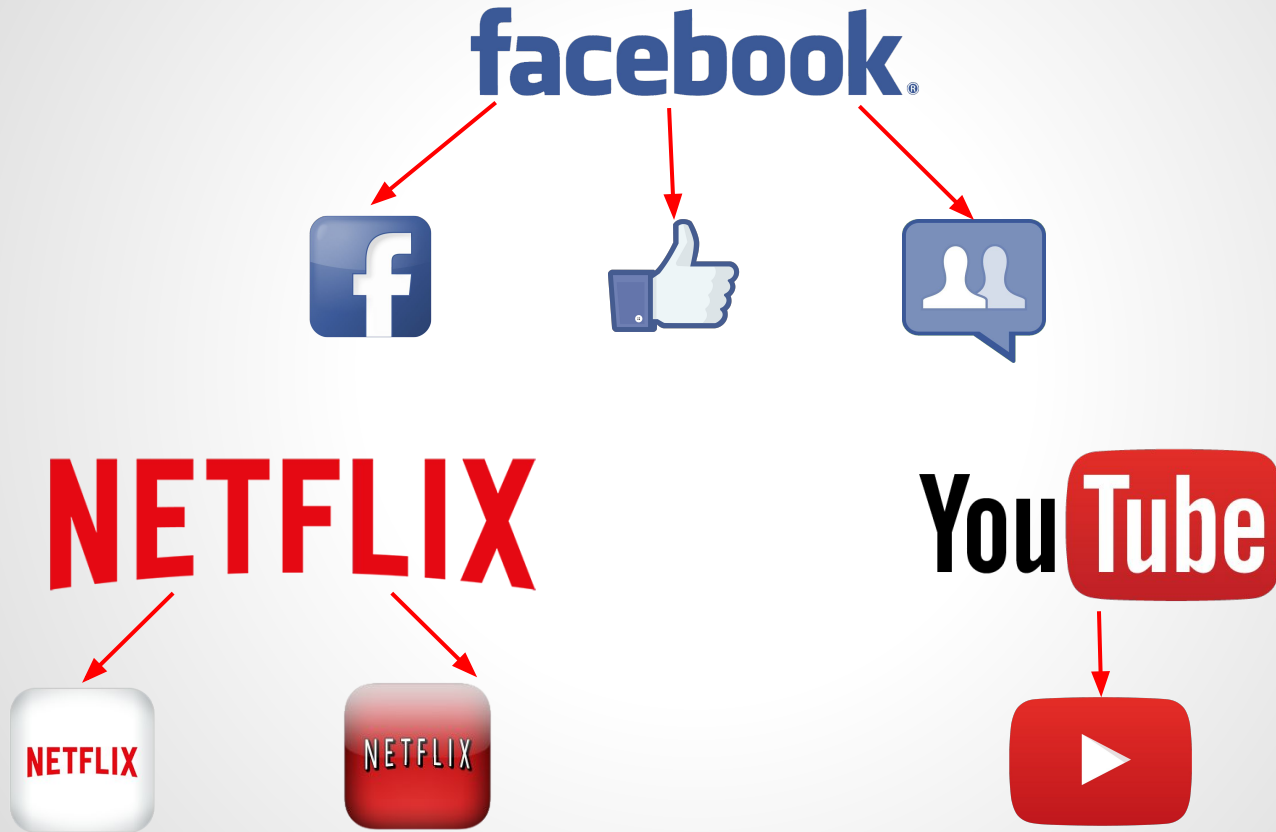
5 - Voice is not the killer app anymore?

## 5 | Voice is not the killer app anymore?



- SMS Payload Size of 140 bytes
- Trillions of text messages at pennies (with 1000x markup) turns into billions of dollars
- SMS with Broadcast Capability
- SMS built on TCP/IP ground up

## 5 | Voice is not the killer app anymore?



## 5 | Voice is not the killer app anymore?

