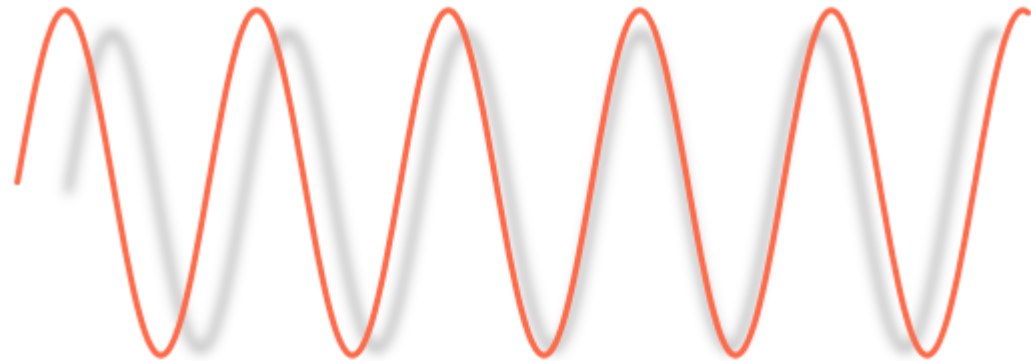


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Verizon Network API Gateway



- Group Forming Networks: Reed's Law

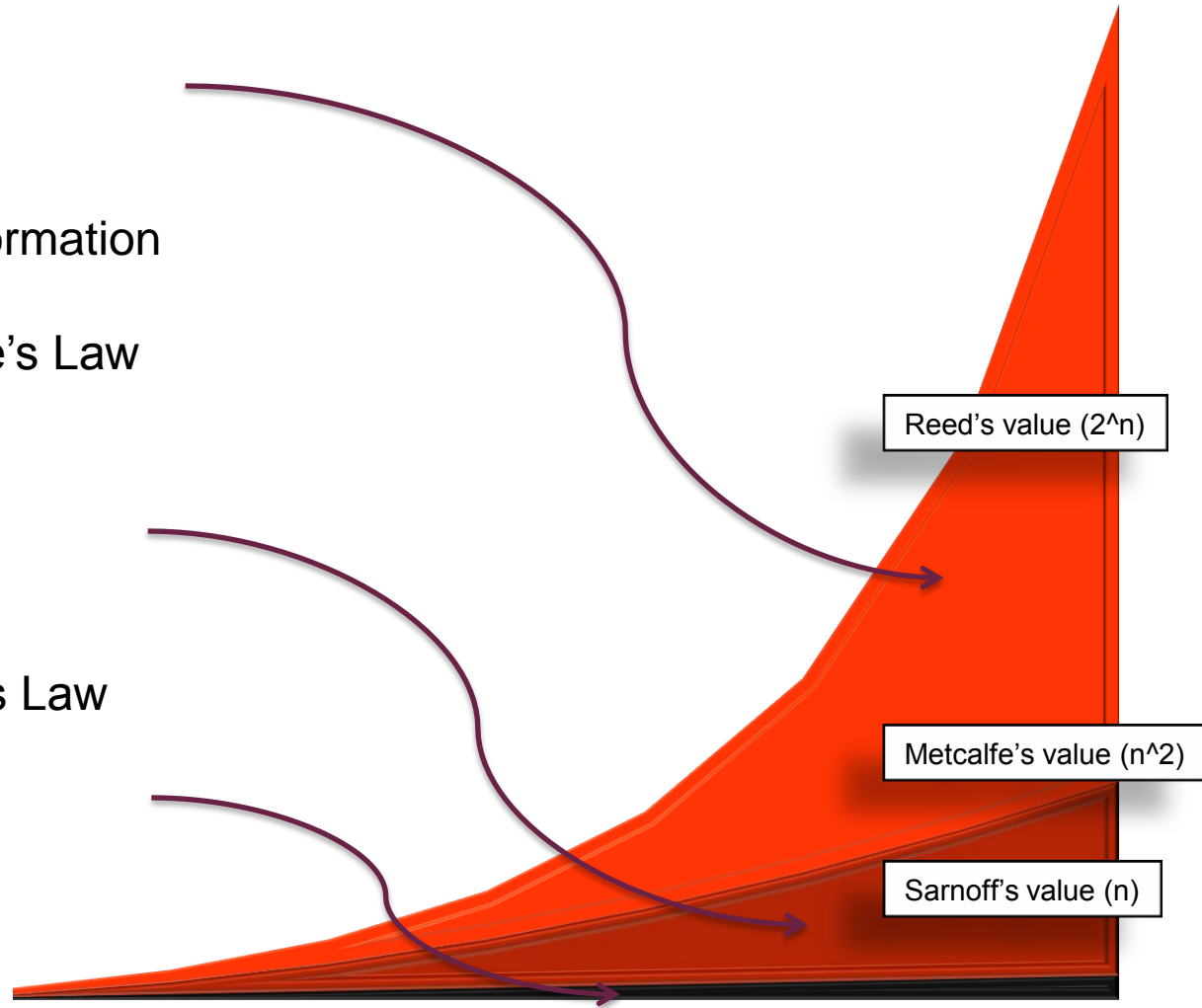
- Location
- Presence
- Terminal Status
- Network Context
- Tools to facilitate group formation

- Telecommunications: Metcalfe's Law

- Voice
- IM
- email
- 2WSMS

- Broadcast Networks: Sarnoff's Law

- TV
- 1W SMS



- Verizon Network APIs today consist of:
  - Location,
  - SMS, MMS,
    - Send, Receive SMS & MMS
  - Terminal Status,
    - Is the mobile device On or OFF?
  - Carrier Properties and
    - Which North America wireless operator serves this phone number?
  - Device Characteristics
    - What is the device make and model associated with this phone number?

## Get Carrier

```
CarrierName = Verizon Wireless  
CarrierId = 391  
Wireless = True
```

## Get Device

```
DeviceId = 2270  
DeviceModel = IPHONE 4 WHITE 16GB  
DeviceMarketingName = Apple iPhone 4 - 16 GB  
in White  
ManufacturerName = Apple  
FirmwareVersion = 1.0.05
```

## Get Status

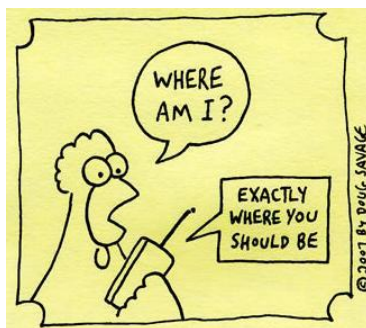
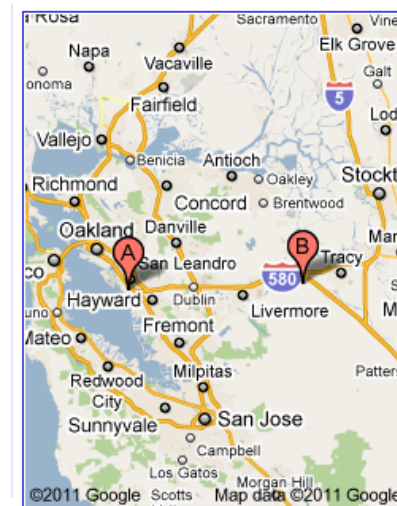
```
addr = tel: [REDACTED]  
status = Reachable
```

- Additional APIs and services being investigated include:
  - Enhanced location
  - Enhanced terminal status
  - Subscriber Profile
  - Account Profile
  - Call Control
  - QoS
  - Placemessage
  - OAuth

No current plans to commercially offer these services

## Network API: Where are my employees?

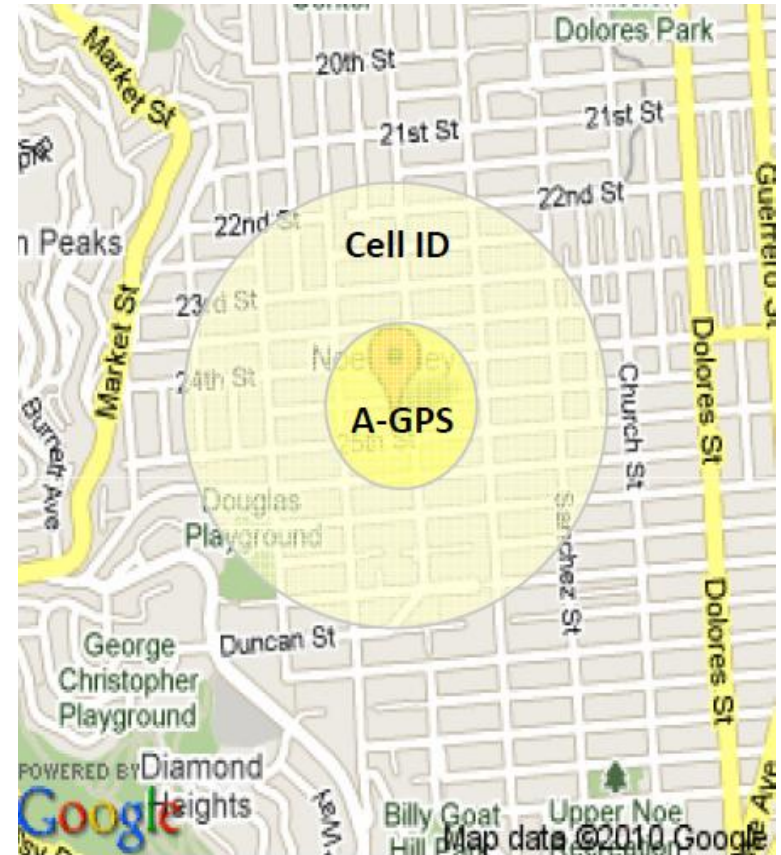
- Applications are generally handset independent with no client-side development
- Provide a single programming environment to the developer community for many Verizon services
- Provide a common security and policy framework for developers and subscribers
- Use Internet standard REST and SOAP Web Services APIs interfaces for third party application servers to the Verizon Service Control Gateway (SCG)



## Device APIs: Where am I?

- Device APIs allow developers to create downloaded applications which leverage the thousands of APIs available for different mobile platforms (BREW, iOS, Android, WM7, WEBOS, RIM OS).
- Application development and certification is through the VCAST elements of the VDC.

- **Stand-alone GPS (sGPS)**
  - Runs autonomously on device with no network assistance
  - Requires certified application
- **Cell ID**
  - Uses the serving cell site and sector to return the approximate lat/long
  - Accuracy is dependent on cell density typically between 1-3 miles
  - Response is 3-10 seconds
- **Assisted-GPS (aGPS)**
  - Uses small client on device for secure network location
  - Accuracy is dependent on LOS of GPS satellites - typically 15-75 meters
  - Response time is generally 30 seconds
  - Provides best result with GPS+AFLT
- **WiFi**
  - In Android Location Agent



- **A subscriber's opt-in & opt-out settings is at the application level and it is applicable to both messaging and location requests.**
- **The initial location or messaging request triggers a dynamic sms ask to the subscriber's device.**
- **Subscribers additionally have the ability to enable or disable their opt-in and opt-out setting for each application from their Verizon My Account site**
- **Every Network API request is tested against a subscriber's privacy profile**

1. A Network Application sends sendSms request
  2. Server checks whether the target device has given consent to the calling application
  3. If the target device has given consent  
Server delivers the message
- Else
1. Server sends the opt-in sms message to the target device (W,A,D) - "A program named \${ApplicationShortName} is trying to locate or contact you...." - this message cannot be changed
  2. Server responds back to the calling application with a 9061 error code

- Carriers
  - All Tier 1 US operators have network APIs
- Cross Carrier Services
  - SMS/MMS aggregators (mBlox, Sybase,...)
  - Location aggregators (LocAid, Location Labs, Technocom)
- Indoor Location
  - Maps, Sensors
- Developers
- Sample Applications
  - Roadside Rescue
  - Emergency Texts
  - Parole & Bail bonds monitoring
  - SMS to 911
  - LBS Marketing
  - Field force automation
  - Family locator
  - Fraud protection



Adding telecommunications services and data to your applications