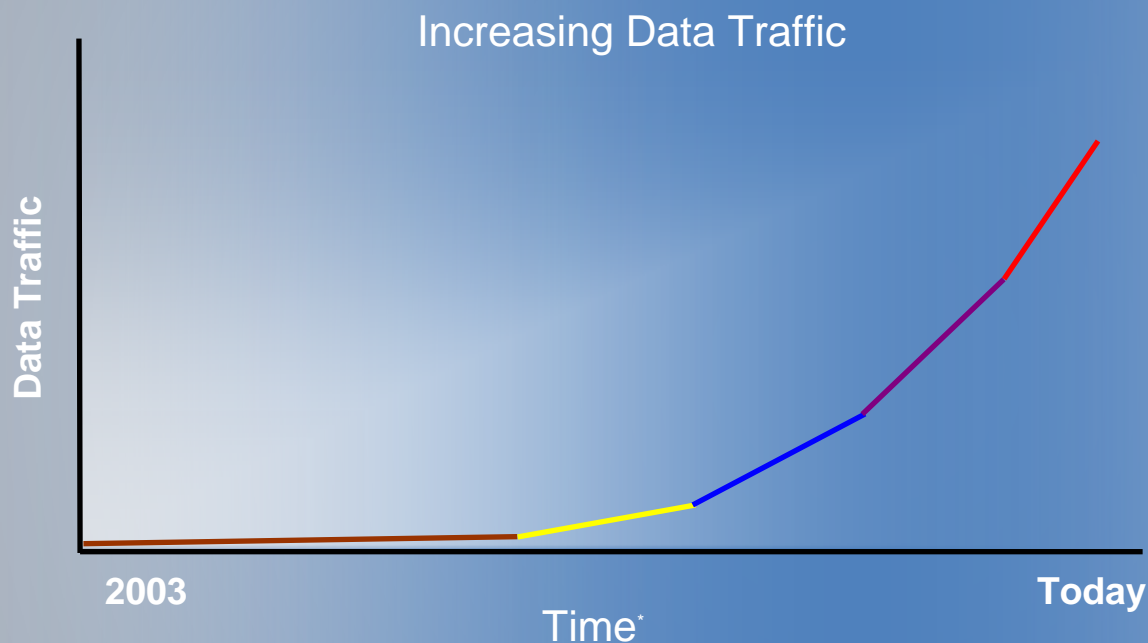




# *Approaches to Managing the Mobile Data Explosion*

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Motorola Networks

# Drivers of Data Parallel Developments



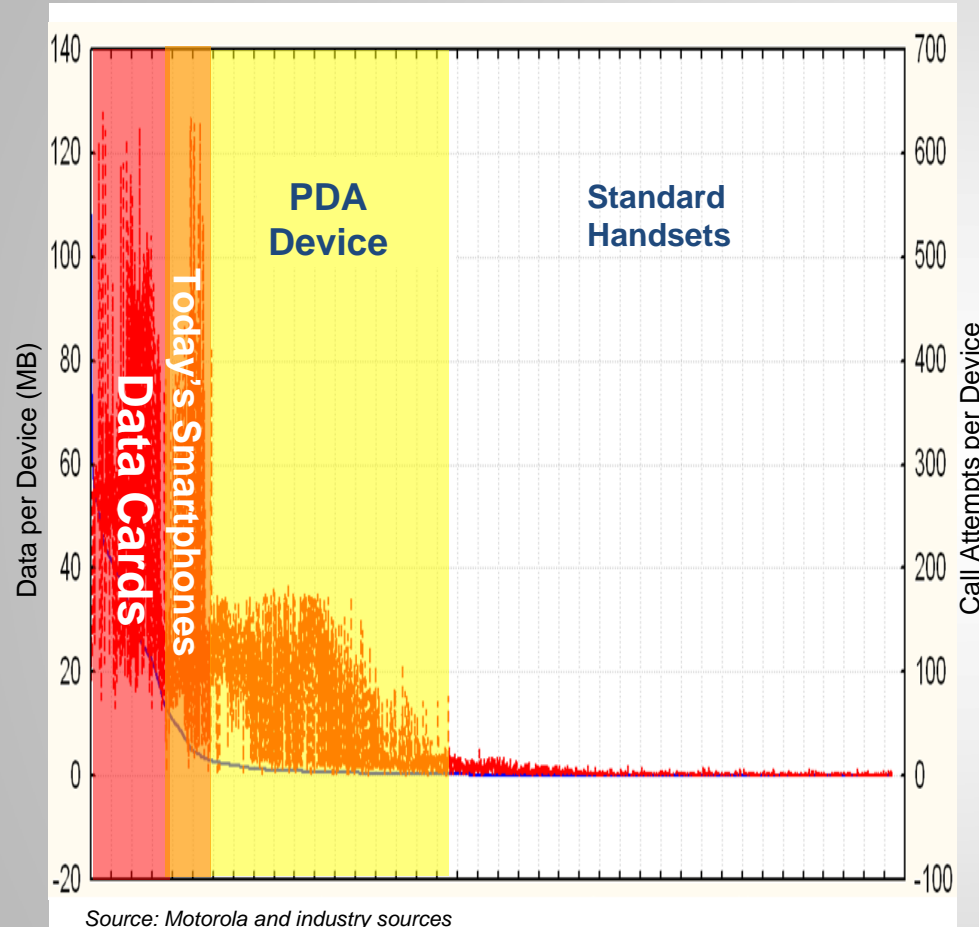
## Turning Points\*

- Smartphone Variety
- Flat rate tariffs & Applications
- Devices Variety & Price
- Network Capabilities
- Marketing & Awareness

\* Approximate sequence and Generalized trends

**CDMA Community has references for development and impacts of network and data growth**

# Today's Smartphones...



Device Type	User Distribution	Signalling Traffic	Bearer Traffic
Phone	75	15	10
PDA Device	20	25	10
Data Card	5	60	80

Normalized % values

## Today's Smartphones creating new profile

Early indicators based on various sources

1	15	14
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Global mobile data usage estimates range from **20% to 40%** by 2014

Sources: ABI and Cisco Visual Networking Index Forecast

Verizon Wireless grew its data revenue from **\$2.6Bn** in Q108 to **\$3.9Bn** in Q109

Source: Verizon Wireless

**Doing what PCs do... consuming massive bandwidth**

# Network Impacts of Mobile Broadband Explosion

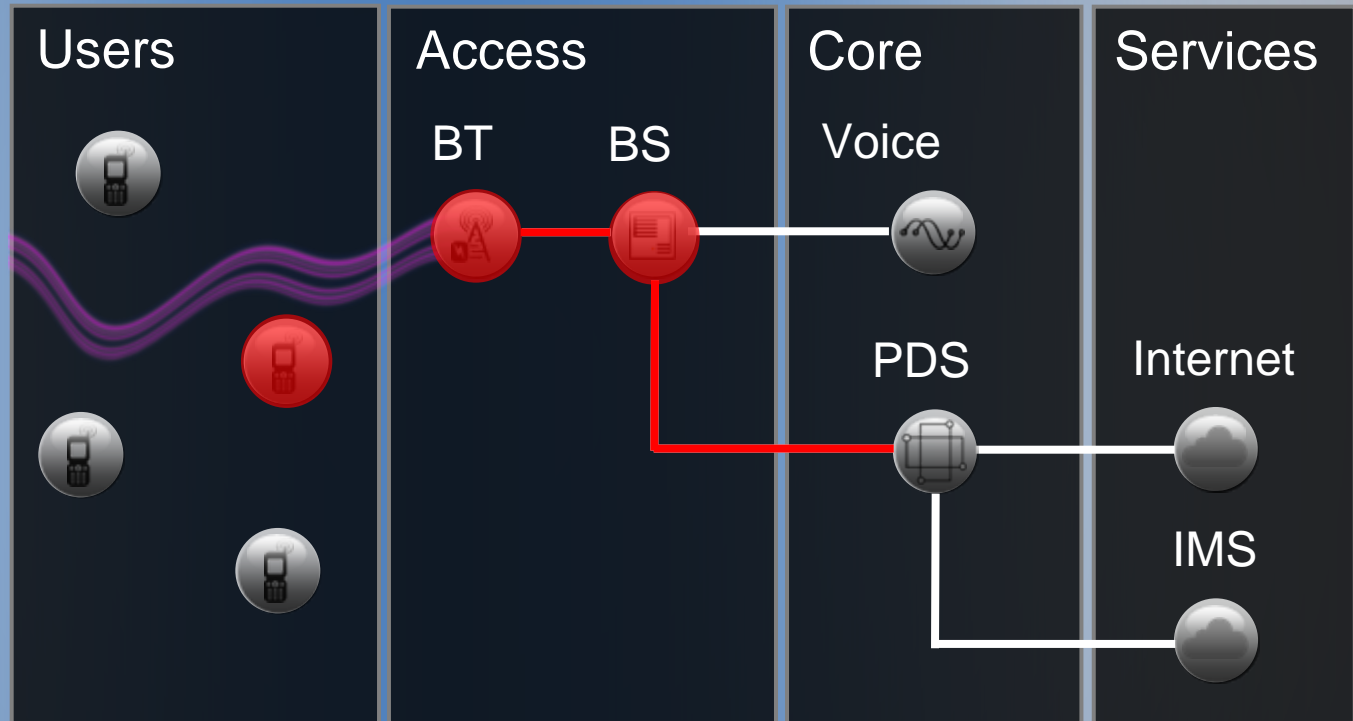


5-10x  
Signaling Traffic

10%  
Forward Link Use

12x  
Backhaul

30%  
Session Capacity



Source: Motorola, Morgan Stanley Research

**Today's CDMA networks must evolve to meet data growth**

# Approaches to Managing Network Overload



## Determinants:

Spectrum

Timing

Technology

Devices

**Many variables will determine network capacity needs**

**Must not overlook the importance of voice services**

## Approaches:

### Optimization

Tune resources  
1x & DO enhancements

### Growth

Add carriers  
Add backhaul

### Off-Load

Femtocells  
WiFi

### Deploy 4G

Target data to 4G

**Combination of approaches to eliminate loading caused by Smartphones**

**Managing voice: CSFB a straightforward approach**

# **Summary** Complex Decision Process



**Usage of Smartphones increasing 3G network loading: affects being felt now**

**Careful consideration required to avoid performance degradation of existing services**

**Straightforward near term approach to voice**

**Determinants will guide operator choices to managing the mobile data explosion**



***THANK YOU***