

Build on  
**Dialogic**

**Practical Steps Toward  
Fixed – Mobile  
Convergence for IP  
Communications**

Solutions for the Contact Center

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# Agenda

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- Importance of HD Voice for the Contact Center
- Impact of Fixed Mobile Convergence in HD Voice Rollout
- Use Case: Mobile Callers into Contact Center
- Summary

# Importance of HD Voice to the Contact Center

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- Contact Centers will soon have a new tool to greatly enhance the quality of experience for customers
  - High Definition Voice (HD Voice)
- What is HD Voice?
  - HD Voice is an initiative to add higher quality voice into telephone networks and enterprises
- Why is it important for Contact Center solutions?
  - HD Voice is a game changer for the contact center
    - Well suited to:
      - Make conversations easier to understand for call agents and customers
      - Improve quality of incoming voice to aid speech recognition performance

# Impact of Fixed Mobile Convergence in HD Voice Rollout

- An increasing percentage of telephone users are ONLY accessible via mobile phone
  - Twenty percent and rising in 2009 survey \*
- A higher percentage of call center sessions will involve mobile subscribers
- Fixed Mobile Convergence (FMC) is a movement toward consolidating fixed and mobile service for voice and data
- Movement toward FMC offers carriers and solution providers opportunity to offer HD voice upgrades
- Challenge: Several different approaches toward achieving FMC

\* National Center For Health Statistics – May, 2009

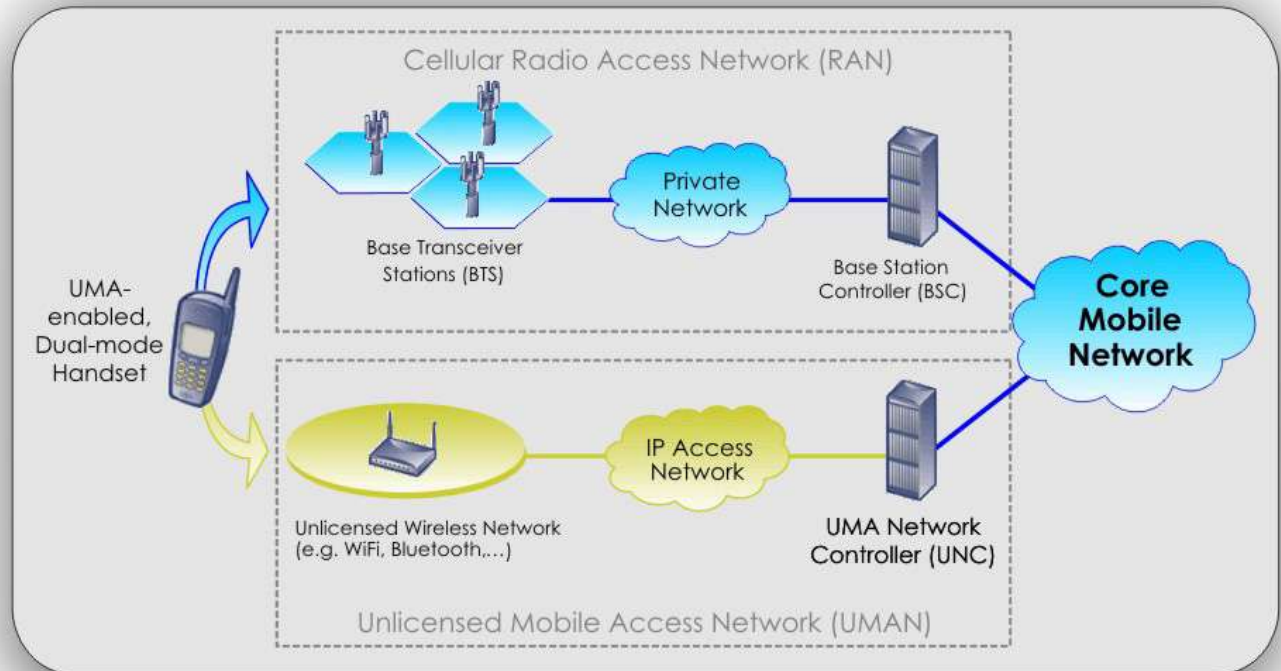
# Approaches to Fixed Mobile Convergence

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- There have been 3 competing visions of Fixed Mobile Convergence:
  - Unlicensed Mobile Alliance (UMA) – combines cell coverage and WiFi when off network
  - Femtocells: Extends existing mobile infrastructure to remote sites
  - IP Multimedia Subsystem: new IP architecture which supports both mobile and fixed line users
- New Smartphones with dual mode capability are accelerating the trend toward Fixed Mobile Convergence
  - Examples: iPhone and Google Nexus

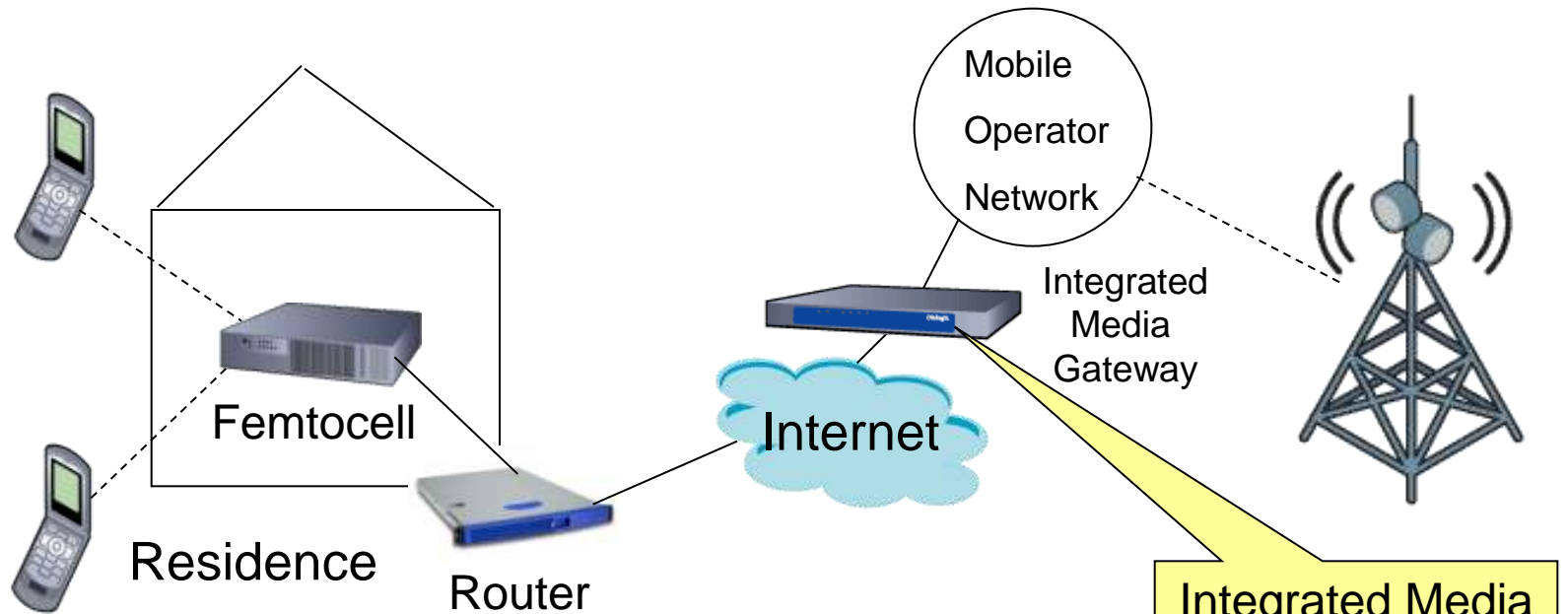
# Transition in FMC Architectures - UMA

- Uses existing 2G / 3G network
- Adds overlay to allow access to mobile infrastructure from wifi hotspots
- Seamless roaming between cellular and IP



Source: [umatechnology.org](http://umatechnology.org)

# Transition in FMC Architectures – Femtocells

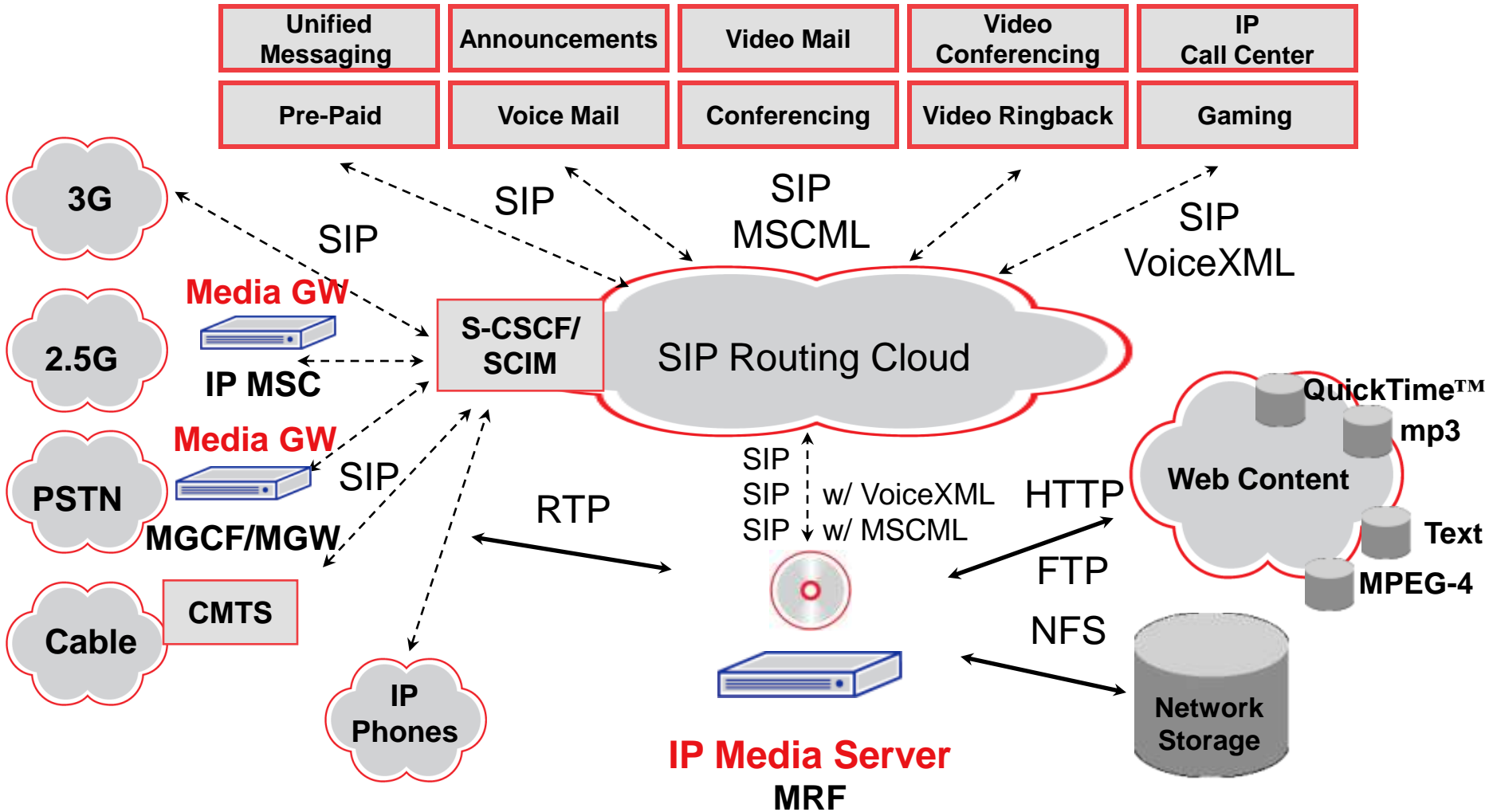


- Femtocell offers tiny mobile cell for home
- Connect by broadband and gateways to Mobile Operator
- Another way for subscribers to connect to Mobile Network

Integrated Media GW converts signaling and media (voice coding)

# Transition in FMC Architectures

## IP Multimedia Subsystem





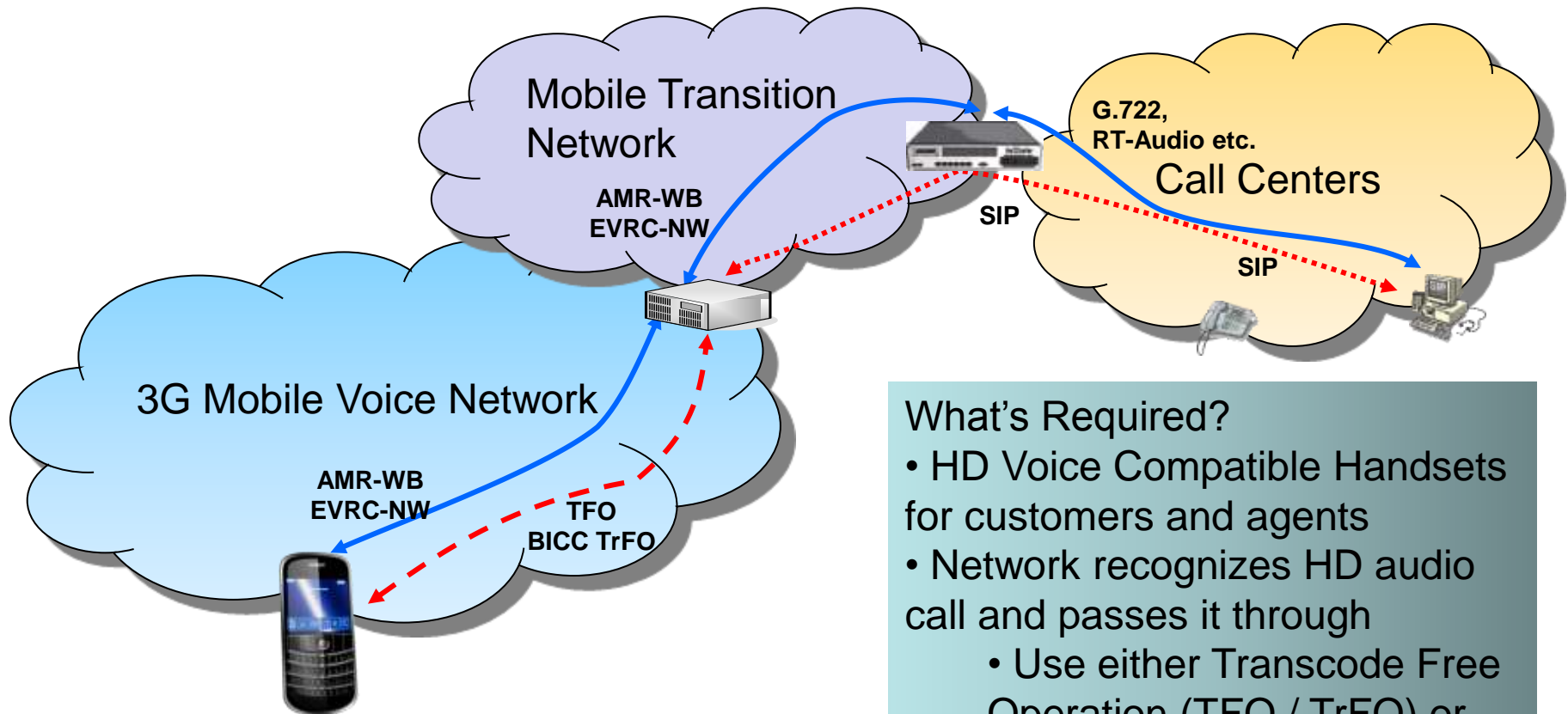
# The Latest Development in FMC

- Apple's iPhone has changed the game in Fixed Mobile Convergence
- Each iPhone supports both mobile networks (2G / 3G) AND WiFi
- App Store movement has shifted the balance of power toward Apple and the consumer
  - Users buying Apps to run on iPhones
- Many apps offer “over the top” services which provide voice and other capabilities bypassing the voice network
  - Example: Skype voice calls running over WiFi on the iPhone
- Google's Android operating system has a similar model
  - Many phones with app support
  - Most will support WiFi and mobile voice / data
- Bottom Line: Trend of dual mode phones plus Apps is driving FMC today and has strong market momentum

# More about HD Voice

- The traditional phone network relied on a 3.1 khz narrowband pipe
- New wideband audio codecs emerging which will enable a much better audio experience for call centers and their contacts: HD Voice
  - Uses more frequency spectrum to produce much clearer communications than current codecs
  - Some wideband algorithms also suitable for richer audio content such as music
- Deployment requires:
  - HD Voice Compatible Handsets or embedded application for smartphone which supports HD Voice
  - Hooks built into Landline and Mobile Networks
- HD Voice can work effectively over either 2G / 3G /4G networks or WiFi
- Matches up well with trend toward Fixed Mobile Convergence driven by combination of smartphones and communication applications

# Example: HD Voice Connections with Call Centers



## Protocols:

- TFO → GSM networks
- TrFO → UMTS/ CDMA2000 Networks
- SIP → Enterprise / Call Centers and Transition Networks

## What's Required?

- HD Voice Compatible Handsets for customers and agents
- Network recognizes HD audio call and passes it through
  - Use either Transcode Free Operation (TFO / TrFO) or transcoding between HD voice codecs

# Advantages of HD Voice for Call Centers

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- Much higher quality voice than current mobile or fixed line voice calls
  - High Definition (HD) Voice will sound better than current landline calls using G.711
  - HD Voice will be a major improvement for mobile phone users
- Net Result:
  - Better quality of experience for all participants
  - Fewer mistakes due to better voice clarity
  - Better performance for speech recognition

# Summary

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- HD Voice can have greatly enhance the Contact Center experience
- Increased percentage of Mobile only users who will talk to contact centers over dual mode phones
- Dual mode phones such as iPhone are key driver for Fixed Mobile Convergence trend
- Presents opportunity to upgrade phones and network infrastructure protocols to support HD Voice
- Net result: Combination of Fixed Mobile Convergence and HD Voice greatly improve quality of experience for Contact Centers when communicating with mobile users



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