

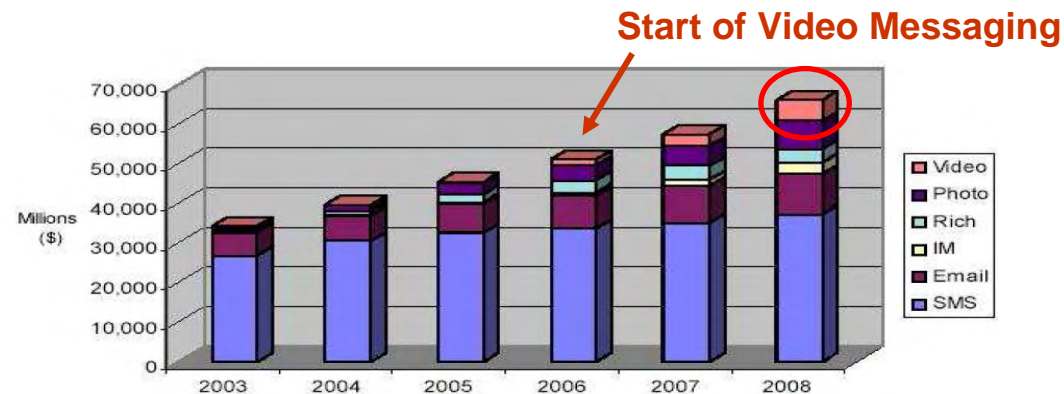


# Mobile Video Messaging

Application Notes

# Multimedia Messaging

- » Critical mass of video-enabled phones has been reached
- » Interoperability between handsets is a must (note SMS lesson)
- » Video content is easy to create and meaningful
- » A vehicle for other services: commercials, movie trailers, news...
- » Video transcoding should be accelerated to reach an acceptable cost-effective solution



Source: Strategy Analytics 2005

# Messaging Applications and Services

## » MMS

- For subscribers: gives the ability to create compelling content and share it
- As service:
  - » News and sports clips
  - » Commercials
  - » Sponsorships for subscriber messaging

## » Video Mail

- The natural evolution from Voice Mail

## » Other

- Personalized / location based e-Commerce
- Events promotions and multimedia newsletters
- Receive video clip directly to cell phone via email

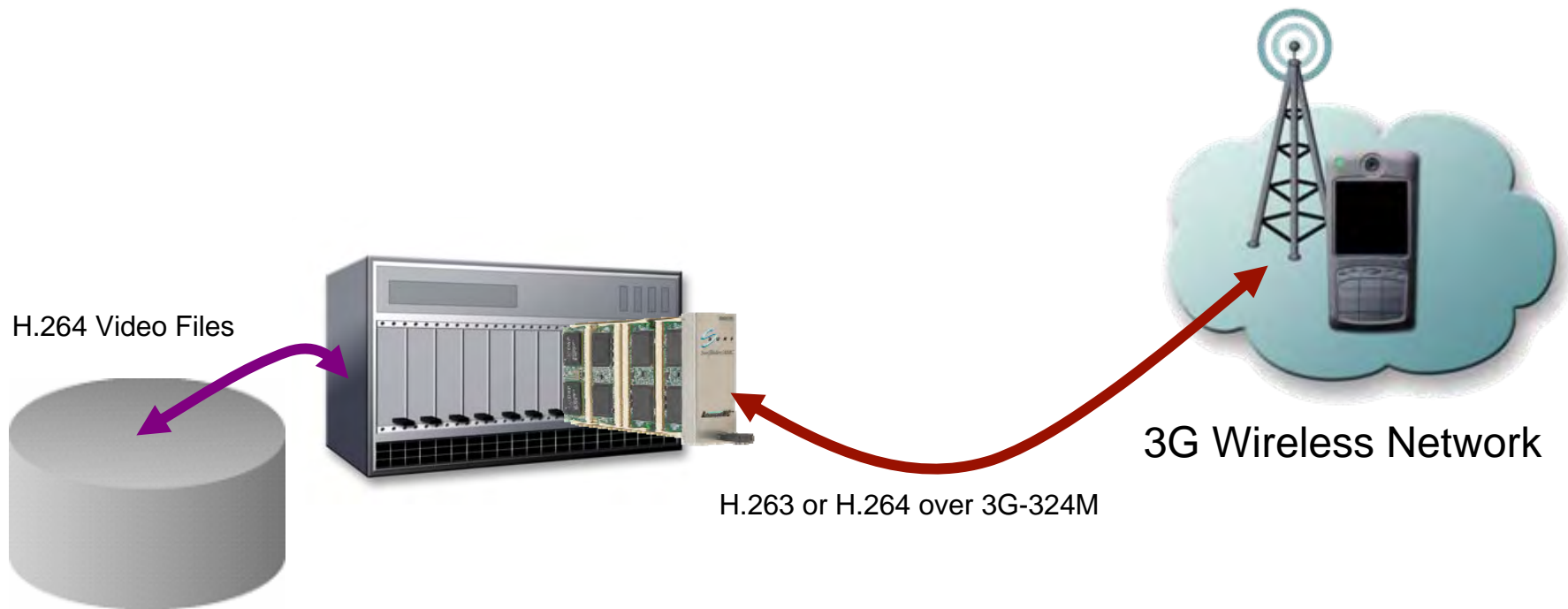
# MMS Content Adaptation Requirements

- » File-based
  - Transcode video content (H.263, MPEG-4, H.264)
  - Resize to fit to any screen size
  - Down sampling of frame rate and bit rate
  - Support for 3GP, and MPEG-4 file format
  - Run to completion: Adopt content as fast as possible
- » Streaming
  - Support for on-the-fly video conversion
  - Single file to multiple destinations in various formats
  - Support QoS, RTP, RTCP, RTCP-XR
- » High availability, scalable, accelerating solution
- » Integration of new and proprietary codecs
- » Native support for YUV-based stream

# Video Mail Requirements

- » Support for Voice & Video Interactive Response menu system (IV<sup>2</sup>R)
- » File-based
  - Transcode video content (H.263, MPEG-4, H.264)
  - Resize to fit to any screen size
  - Down sampling of frame rate and bit rate
  - Support for 3GP, and MPEG-4 file formats
  - Run to completion: adapt content as fast as possible
- » Streaming
  - Support for on-the-fly video conversion
  - Single file to multiple destinations in various formats
  - Support QoS, RTP, RTCP, RTCP-XR
- » Mobile
  - Support for 3G-324M
- » High availability, scalable, accelerating solution
- » Integration of new and proprietary codecs

# AdvancedMC or PC-based System



# Unique Features of Surf Offering

- » **Manageability** – Single API and same resources for voice & video
- » **Performance** - “Run to completion” mode for a shorten processing time
- » **Cost-Effective** - High Storage ⇔ DSP throughput – over 1000 G.711 streams
- » **Differentiation** - Seamless integration of new codecs
- » **Reusability** - Easy migration path to advance platforms (μTCA, ATCA)





# Mobile Video Features Highlights

- » 3G-324M support
  - H.324 Annex C
  - H.223 Annex A & B
- » H.223 running on the DSP for enhanced performance
- » H.245 running on the host
- » High-level 3G-324M APIs
- » MONA\* (H.324 Annex K - fast connect)



\* Roadmap feature



# Voice Features Highlights

- » Audio Codecs
  - G.711
  - G.726
  - G.723.1A
  - G.729AB
  - iLBC
- » Extended Wireless Codecs
  - G. 722.2 (WB-AMR)
  - GSM FR
  - GSM EFR
  - GSM NB-AMR
  - EVRC
  - AAC\*
  - WMA9 (decode only)
  - QCELP\*
- » Echo cancellation
  - G.168 2002 Echo tail up to 128ms
- » Configurable Packet size
- » VAD, CNG, Packet Loss Concealment
- » RTP/RTCP
  - RFC 3550, 3551, 3389
- » Fixed/Adaptive Jitter Buffer
  - Up to 500 ms
- » Caller ID Detect/Generate
- » Tone and Events
  - Monitoring
  - Relay (RFC 2833)
  - Generation
  - User-defined tones

\* Roadmap feature

# Conferencing & Streaming

## Conferencing

- » Up to 256 TDM or IP audio conferencing participants on a single DSP
- » Dominant speakers detection
- » Up to 100 **active** video participants
- » Up to 16 **displayed** participants
- » Configurable video conference layouts
- » Text & image overlay on conference output

## Streaming

- » Play/Record of any channel from/to file
- » Supported file formats
  - 3GP
  - MP4
  - ASF (WMV9)
  - AVI\*
  - SRF (proprietary)
- » Supports more than 1000 concurrent G.711 streams

\* Roadmap feature

# Customer Benefits

- » **Flexible and scalable** hardware design results in:
  - **Cost-Effective** solution
  - **Saves Money** due to reduced R&D efforts
- » **One Stop Shop** for all your needs in multimedia processing
- » **Field-proven:** Surf products are used by many Tier-1 TEMs
- » Built-in diagnostics, providing **easier troubleshooting** and **better application** control
- » Complete SDK and high-level API ensures fastest **Time-to-Market**
- » Dedicated customer service team ensures **smooth development cycle**



**Thank You**  
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