

# Nokia CDMA



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# Nokia's Vision of CDMA Technology

- Nokia is committed to deliver CDMA Devices to markets globally
- Nokia regards success in CDMA as a key objective in its growth strategy. Nokia's global market share (all technologies) currently stands at 40%.
- Nokia's CDMA Business Unit grew significantly last year and it is expected to grow more in 2008 and 2009
- Nokia is developing CDMA devices for LTA in 2008. By the end of 2008 Nokia is expected to have launched 8 CDMA devices in LTA. We also have a robust portfolio for 2009.
  - Operators please see your Nokia Rep for details
- Nokia believes that the LTA CDMA high tier market will grow in the coming years

# CDMA, Convergence and Other Technologies



- Current Nokia devices are cdma2000 1x and 1xEVDO (rev0 and revA) based.
- Nokia has seen significant interest in Long Term Evolution (3GPP 4G) as migration path from 3G CDMA to 4G. The recent 4G announcement by VzW has strengthened this interest.
- Nokia believes that the CDMA market will be sustained for the foreseeable future.
- VOIP over DORA is costly. QLIC and 4GV provides the same improvement for the DL capacity. VOIP over DORA however is required for video telephony.
- Market research shows significant interest in CDMA/WiFi converged devices in the coming years
- Fragmentation in CDMA market has created significant challenges for device vendors like Nokia. The Open Access Initiative by VzW and open Market Hand Set are the right first steps.
- Nokia invites all LTA vendors to adopt CCF as the key qualification and testing requirement. Volume aggregation through GHRC could be very beneficial.
- Music enhanced terminal market is expected to grow significantly in LTA

# New Devices Must Be Environmentally Friendly!



- Nokia is keen in increasing environmental awareness and performance. We took several actions to raise the awareness of our industry's impact, and what Nokia is doing about it. One very visible example is the new compact packaging for some of our phones.
- Being “Green” does not necessarily mean your expenses will go up. In fact it may be quite the opposite.
- Examples:
  - Nokia has shipped more than 250 million phones using the new packaging design, which saved Nokia more than 100 million Euros in transportation and logistics costs last year. It also meant we used five-thousand fewer trucks, reducing fuel consumption and carbon emissions.
  - Last year, we launched the Nokia 3110 Evolve (GSM), which features “bioplastic covers” made from 50 percent renewable material. It also comes with our most energy efficient charger yet. Then, this past February, we showed a stylish and remarkable concept phone called “Remade.” This phone is made from only renewable materials, and environmentally friendly technologies.

# The Challenge in Mobile Music

**“Despite the predictions that a mobile music phone will win the pocket-share versus the dedicated Music player, why hasn’t the mobile music phone flourished?”**

- **Battery Life is not comparable to dedicated players.**
- **Ability to Easily Transfer of Existing Music on PC to Mobile.**
  - **File Transferring Experience (i.e., Side Loading) is inconsistent and not as simple as the benchmark.**
  - **Synchronization SW Installation with PC is too difficult to install and recognize your device.**
- **UI and Music Player not intuitive and inferior.**
- **Accessory Offering is lacking with competition.**

# The Foundation of A Good Music Phone



- The Experience must be comparable to what is seen with Dedicated Music Players today.

“Music Adoption rates on average double to over 50% from 25% for handsets built for Music versus Music Enabled handsets.”

**MMetrics**

“In the US, users of standalone digital music players who also use “music enhanced terminals” to listen to music are 60 percent more likely than average to choose their phones as their primary music players. “

**MMetrics**

## This Means:

- Easy Intuitive Method to select and play Music on the Device.
- Easy Intuitive Method to add Music to the Device.
- “Out of Box” Experience to listen to Music is complete and satisfying.
  - All components for Music is “Inbox” (ie. Memory, Cable, Headset)

# Conclusion from Consumer Data

Nokia has build it right, so people will use it:

- End-Users want a Music User Experience comparable to what is seen with dedicated MP3 players on the market.
- Focus on improving the **User Interface Experience** to be easier and faster to access one's Music.
  - Focus on **Fast and Easy Sideloading** of Content to the Handset
  - Focus on an advanced **intuitive Music Player Interface**
- Focus on improving **Battery Life** to be on par with dedicated Music Players.
- Focus on **Enhanced Sound Quality** by partnering with Audio Enhancing Technology Vendors.



# Intensify with Wireless Stereo Bluetooth! The Next Hot Trend!

- Listen to Music untethered via Bluetooth Stereo headsets
- Nokia products will support standard 3<sup>rd</sup> party BT Solutions.



- Use your Handset as your Music Remote Control
- Stream Stereo Music of your choice to your Hi-Fidelity Stereo System via Bluetooth.



# The Music Experience for 2008 Music Product

- Dedicated Music co-processor
- Music Background Support. (Music while Browsing/Texting)
- Over 20 hours of Music Playback time
- Windows WMA and Windows DRM (Janus) Support. Subscription based services possible
- Plug and Play syncing of PC Music Library via MTP with Windows Media Player v10+. **No need for special drivers.**
- Enhanced MTP files transfer speeds of 15 Mbps. (USB 2.0 interface)
- Expandable Memory Card support (up to 32 GB)
- Enhanced Stereo Audio Fidelity
- Wide Range of Audio Codec Support (MP3, AAC, AAC+, WMA, M4a, and eAAC+)
- True Wireless Bluetooth Stereo listening and streaming
- 3.5mm Headset Jack

Please see your Nokia rep  
for further information!

# Ending Remarks

- Converged devices will become more relevant in coming years. These include 3G/4G multimode devices, as well as 3G/WiFi devices.
- Music enhanced market for devices will grow.
- LBS enabled devices and application has been doubling on annual basis. This trend is to continue for foreseeable future. Devices should adopts designs to make the use of these types of services easy for the general consumer.
- ***We need to be environmentally conscious and responsible. This is a must for all of us! It also save us cost and above all it is the “right thing” to do. Nokia is 100% committed to this concept.***

**Thank You!**

