Recipe for a Successful Standards-based CDMA MMS Offering

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Chief Messaging Architect

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Benefits of Standards

• **Benefits of standards**
  – Minimize risk
    • Future proof, allow for multi-vendor deployment, Best-of-Breed
  – Enable choices
    • No vendor lock-in, enables multivendor strategy, reuse of existing investment
  – Enable Interoperability
    • Enables IOT with third-party devices and servers
  – Promote competition
  – Enable economies of scale
  – Service creation flexibility
    • Enables IOT with third-party devices, servers and applications

• **How to achieve differentiation in highly standardized service environment**
  – By Providing innovative, flexible (easy to extend) service and the best end user experience
3GPP2 MMS Reference Architecture/Standardized Protocols

MMS Protocols

| MM1  | X.S0016-310 - TIA-934-310 (OMA-MMS v1.1 over WP-HTTP/WP-TCP or HTTP/WP-TCP or HTTP/TCP or WSP) |
| MM2  | MIMEd Storage API with POP3 and IMAPv4 access |
| MM3  | SMTP, SMPP, POP3, IMAPv4 |
| MM4  | X.S0016-340 - TIA-934-340 (SMTP based) |
| MM5  | X.S0016-200 - TIA-934-200 ENUM based Address Resolution API |
| MM6  | LDAP |
| MM7  | X.S0016-370 - TIA-934-370 (SOAP/HTTP based) |
| MM8  | TCP based Pre-Paid and Post-Paid Support |

3GPP2 MMS Reference Architecture

Ref. 3GPP2 X.S0016-200 - TIA-934-200
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### Diagram

- **MMS User Agent A**: MM1
- **External Server #1**: MM2 (e.g. E-Mail)
- **External Server #2**: MM2 (e.g. Fax)
- **External Server #3**: MM2 (e.g. UMS)
- **External Server #N**: MM2
- ** Billing System**: MM3
- **MMS VAS Applications**: MM4
- **MMS Relay/Server**: MM5
- **MM User Databases**: MM6
- **HLR/AAA**: MM7
- **“Foreign” MMS Relay/Server**: MM8
- **External Server #N**: MM1

**OPENWAVE®**
3GPP2 MMS Reference Architecture/Standardized Protocols

**MMS Protocols**

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- Legacy Mobile Messaging
- Legacy Email System
- Push Proxy GW
- MM3/SMPP or SMTP
- WAP 1.x and/or WAP 2.0 GW
- VASP
- HTTP
- WP-HTTP/WP-TCP
- WSP

MM1/HTTP

MM4/SMTP

MM7/HTTP

MM7/HTTP

WSM/C

WAP 1.x and/or WAP 2.0 GW

MMSC

PAP/HTTP

PAP/HTTP

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- MM1/HTTP

- MM4/SMTP
- MM4/SMTP

- VASP
- VASP

- HTTP
- HTTP

- PAP/HTTP
- PAP/HTTP

- Header
- Header

- Text
- Image
- Audio

- WSP
- WP-HTTP/WP-TCP

- HTTP/WP-TCP

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- MM1/HTTP
- MMSC
- MM7/HTTP
- VASP
- Notification
- WAP 1.x and/or WAP 2.0 GW
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- **MM7/HTTP**
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- **MM4/SMTP**
  - MM1

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  - HTTP
- **WSP**
  - HTTP
  - WP-HTTP/WP-TCP

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High-level Message Flow Example (OMA MM1 Implementation)
Required Vendor’s Technical Expertise…

…For a Successful MMS Offering


- WAP 206/209 and OMA-MMS v1.1 over IP
- SMTP over TCP/IP
- WAP over IP (1xRTT)
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 Areas of Expertise


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Areas of Expertise

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- HTTP 206/209 & OMA-MMS v1.1
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Areas of Expertise

- MIME Queue/Storage
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Required Vendor’s Technical Expertise…

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Areas of Expertise

- LDAP Directory
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SMS in UK*


Total Message Volume

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Total Message Volume

7.1 GB/Day

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Total Message Volume

- SMS in UK*: 7.1 GB/Day
- J-Phone: 105 GB/Day
- >9M Photo/Video subs


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Key Factor: End User Experience

Key MMS Learnings From Actual Customers Such as: J-Phone, KDDI, Vodafone, TCC, Sonofon, VIVO, TNZ, ...

- **Ease of use**
  - Handsets with integrated camera
  - “Point and click” MMS Client operation
  - MO and MT Auto Provisioning
  - OTA sync of address book

- **Handset and MMS Client capabilities**
  - Camera Resolution (Zoom function, flash-light, color depth, resolution, etc.)
  - Handset and Client display (Zoom in/out feature, color depth, resolution, etc.)

- **Variety of handsets**

- **Comprehensive Transcoder**
  - Optimize end user experience
  - MMS → Email
  - Email → MMS

- **Network upload/download data rates**
  - Only relevant for “large” messages and assuming the rest of end user experience is good
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Substantial CAPEX and OPEX Savings

Future Proof
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- March '99: Sha-Mail
- November '00: Movie Sha-Mail
- March '02: Sha-Mail - Album
- June '02: Anti-Spam
- Substantial CAPEX and OPEX Savings
- Future Proof
Key Factor: Continuous Innovation and Rapid Deployment

Substantial CAPEX and OPEX Savings

Future Proof
Key Factor: Continuous Innovation and Rapid Deployment

Mature OMA/WAP and MIME Messaging PLATFORM

- Experience and leadership in WAP and MIME messaging development and deployments
- Scalability, Reliability, Extensibility
- Service creation flexibility and ease (rapid) of deployment
- Standards Compliance (e.g., MM7 – “Plug and Play”) and leadership, Future Proof Architecture
- Low CAPEX and OPEX
- Web/WAP Album
- Real Time Prepaid, Flexible customizable billing interface
- MM7 API/SDK and developer program

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Substantial CAPEX and OPEX Savings

Voice Mail  Mobile Email  MMS  Future Proof
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Common Components (Dir, Billing, Message Store, Not.)

Substantial CAPEX and OPEX Savings

Future Proof
Key Factor: Continuous Innovation and Rapid Deployment

Mature OMA/WAP and MIME Messaging Platform

- Experience and leadership in WAP and MIME messaging development and deployments
- Scalability, Reliability, Extensibility
- Service creation flexibility and ease (rapid) of deployment
- Standards Compliance (e.g., MM7 – “Plug and Play”) and leadership, Future Proof Architecture
- Low CAPEX and OPEX
- Web/WAP Album
- Real Time Prepaid, Flexible customizable billing interface
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Reusage of existing investments

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Key Factor: Broad Handset Offering

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<tr>
<th>Samsung SPH-i700</th>
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<td>Samsung SPH-A500</td>
<td>Audiovox CDM-9600</td>
<td>Sony Ericsson T608</td>
</tr>
</tbody>
</table>

Comprehensive MMS and WAP IOT program
• Neutral MMSC vendor with no interest/incentive in “pushing” certain handsets
**MMSC Vendor Key Selection Criteria**

*...For a Successful MMS Offering*

- Core business and core competence in OMA/WAP and mobile MIME messaging technologies
- Proven OMA/WAP and mobile MIME messaging experience, scalability, reliability, availability
- End-to-end offering
  - Superior messaging/MMS embedded client
  - Number of OEM relationships and existing agreements
  - Embedded clients. If you choose Brew or Java client make sure it is developed with close collaboration with the OEM. (Not downloaded without OEM/device static linkage)
- Neutral MMSC vendor
  - No agenda for “pushing” specific handsets
  - Its incentive should be increasing messaging traffic (best end user experience)
- Standards compliant and flexible architecture that ensures:
  - Future proof platform
  - Easy to rapidly deploy/integrate new (same vendor) and/or third-party services and applications
- Proven and comprehensive (dominance in OMA/WAP, mobile MIME messaging technologies) IOT program for OMA/WAP and MMS
  - MMSC with third-party devices:
  - WAP GW/PPG with third-party devices
  - WAP GW/PPG third-party MMSCs
  - MMSC with third-party MMSCs
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*MMS, EMS/SMS, Email and IM/WV
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• Personalize your Phone

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• Image Previews
• Fewer Clicks, More Results
• For live MMS demos please visit the Openwave stand
• Please ask for a free copy of our MMS developer Toolkit (MM7 SDK, Phone tools, etc.)

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