Writing for the Fourth Screen

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The Fourth Screen

- **Silver Screen**
  - In 1895, Tomas Edison introduced the Vitascope and revolutionized the movie industry
  - Eyeballs – **Cinema/Theater** Limits (~50 people)

- **Television**
  - Still the undisputed king of entertainment
  - Eyeballs – **Regional/City** Limits (~10,000 people)

- **Computer**
  - More interactive but also less accessible
  - Eyeballs – **Internet** Limits (~1 B people)

- **Mobile**
  - Interactive and accessible – Everybody wants in!
  - Eyeballs – **Mobile Operator** Limits (~2.4 B people)
**Introduction**

<table>
<thead>
<tr>
<th>Mobile</th>
<th>Internet</th>
</tr>
</thead>
<tbody>
<tr>
<td>♦ 2.4 Billion GSM Users ♦ 1 Billion Internet Users</td>
<td></td>
</tr>
<tr>
<td>♦ 700 GSM Operators ♦ 80 Million Registered Domains</td>
<td></td>
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<tr>
<td>♦ 1.5 Billion SMS daily in the Philippines alone ♦ 100 Million Daily Video Streams from YouTube</td>
<td></td>
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<tr>
<td>♦ Non-SMS Services are <strong>not inter-operable</strong> resulting in their limited adoption ♦ 100 Million Websites</td>
<td></td>
</tr>
<tr>
<td>♦ Mostly <strong>un-monetized</strong> potential! ♦ 14 Billion IMs daily</td>
<td></td>
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<tr>
<td>♦                                   ♦ 6 Trillion Emails daily</td>
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Internet and Mobile

- Both are **big** and still **growing**
- Have their own communities!
- Giants begin to collide – **Lines are blurring**

- **Internet things** moving to Mobile
  - Electronic Mail, Instant Messaging, Electronic Market-places and Commerce, Content
  - Enabling mobiles to “view” Internet content

- **Mobile things** moving to the Internet
  - Location-based Services, Identity Management, Portable Commerce, Portability
  - Bridge mobile services into the Internet space
## Internet and Mobile

<table>
<thead>
<tr>
<th>Mobile</th>
<th>Internet</th>
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</thead>
<tbody>
<tr>
<td>◆ Standardized</td>
<td>◆ Standardized</td>
</tr>
<tr>
<td>◆ Minor fragmentation</td>
<td>◆ Little fragmentation</td>
</tr>
<tr>
<td>◆ Continued evolution</td>
<td>◆ Evolution is slower?</td>
</tr>
<tr>
<td>◆ Service Management is centralized</td>
<td>◆ Service Management is non-centralized</td>
</tr>
<tr>
<td>◆ Operator controls application launch</td>
<td>◆ Easy to launch new applications</td>
</tr>
<tr>
<td>◆ More uniform</td>
<td>◆ More diverse</td>
</tr>
<tr>
<td>◆ Operator-controlled user experience</td>
<td>◆ Globally uniform user experience</td>
</tr>
<tr>
<td>◆ Workable Monetization</td>
<td>◆ Everything is free</td>
</tr>
</tbody>
</table>
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What are the Big Internet Guys Doing?
Traditional Internet

- **Instant Messaging with Voice and Video**
  - Yahoo, MSN, AOL and Gtalk Messengers, Skype

- **Electronic Mail**
  - Yahoo Mail, MSN Hotmail, Gmail

- **Electronic Market Places**
  - Google Checkout, Yahoo, Microsoft, Amazon, Paypal and eBay
Web 2.0

- **Online Applications**
  - Office Live, Google Apps (Writely, Spreadsheet), Calendars/Groupware

- **Community Generated Content**
  - Flickr, Blogger, YouTube

- **Location-based Services (LBS)**
  - Google Maps and Earth

- ... and they are all **Going Mobile**!
The Fourth Screen
What are the Big Mobile Guys Doing?
Doing Things the IP-Way

- Embracing **IP Services**
- Basic Content and Value Added Services (delivered via SMS, MMS)
- Transcoding Internet into Mobile
- Instant Messaging

**3's X-Series**
- Flat Rate for access to Skype, MSN, Yahoo, Google, Sling, Ebay
- Very Disruptive!

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Enabling Mobile

- Mobile Entertainment
  - Content Delivery
  - Mobile Games
- Interactive
- Networked
- Mobile Blogging
- Integrated Devices
- Music and Radio
- Imaging / Camera

- Other enablers
  - Location-based Services
  - Touch Commerce
  - Alternative Access

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The goal is to marry the best of the best of the Internet and Mobile:
- Mobile's reach, accessibility and monetization
- Internet's rich application and services ecosystem
- Mobile to bridging the digital divide!

Fixed-Mobile Convergence is inevitable!

Need a new breed of software developers and solutions engineers:
- Familiar with the new tools and technologies in an every changing technology landscape
- Capable of thinking out of the box!
What are the tools of the trade?
Traditional Tools

**Telecoms**

- **Interface Tools**
  - SIM Toolkit – Mobile
  - Proprietary Firmware
  - Closed Platforms

- **Backend Tools**
  - SS7 Signal Manipulation
  - Proprietary Interfaces

- Mostly *closed proprietary systems*

**Internet**

- **Interface Tools**
  - HTML, CSS
  - Javascript
  - ActiveX, J2SE

- **Backend Tools**
  - PHP, ASP, J2EE
  - MySQL, MS-SQL

- Diverse *open standards-based systems*
Open Telecoms

- Movement from proprietary and complex systems to open and simple systems

- Open Systems
  - J2ME, Symbian, Windows Mobile, Palm, Flash
  - From closed and proprietary CPE Interfaces

- Standardized Protocols to Backend Systems
  - Greater use of XML and Web services
  - Standardization with Parlay/OSA and JAIN

- Simplification of Network Protocols
  - Signaling is moving from complex SS7 to simplified SIP or H.323 (with the advent of VoIP)
What does this mean?

- **Tools are now publicly available**
  - Can be downloaded from the Internet
  - Open source software exists

- **Protocols are becoming more Internet-like**
  - With the use of XML and Web services, it is easy to simulate these systems on existing Internet software
  - No need to interface directly with production telecoms hardware

- Of course, **not all systems are open yet**
  - Most mobile phone systems are standardized
Where can I start?

- **Handset Application Development**
  - Java 2 Mobile Edition (J2ME) from SUN
  - Eclipse or Netbeans IDE (w/ Mobility Pack)
  - Symbian S60 SDK and Carbide from Nokia
  - C++ with Palm SDK from Palm Source
  - MS Visual Studio and Mobile SDK from Microsoft

- **Backend and Web Services Integration**
  - Telecoms APIs such as JAIN and CORBA
  - Learning SOAP or REST-style XML web services
  - Know the platforms J2EE, dotNET and LAMP
  - Practicing with AJAX might be helpful
  - Know message brokering and OR mapping
Conclusions

- The Mobile and Internet worlds are showing **spectacular growth**!
- Bigger market place with **new and diverse needs**
- **Opportunity** for new players
- Worlds are beginning to converge
- Room to create **exciting combinational services**
- Models, tools and technologies are beginning to coalesce to **simpler and open standards**
- Traditional **barriers to entry are disappearing**
More Information

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