Brick, Click and Mobile: Multi-Channel Strategies for Satisfying Your Customers

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E-Business Strategies (EBS)

- EBS is a boutique IT research and strategy consulting firm
- Core Research Areas: E-Business, Mobile and RFID Solutions, Offshore Outsourcing, BPO, and SAP Enterprise Apps
The Big Picture

Setting the Stage – Why Should Managers Care?

The Mobile Landscape – Structuring the Chaos

The Mobile Value Chain – Industry Structure

Reality Check - Where Are We Today? Forecasts and Diffusion

Key Takeaways

The General Framework

Convergence of two existing Value chains...

TCP/IP INTERNET

MOBILE & WIRELESS INTERNET

NEW SOLUTIONS & PROFIT OPPORTUNITIES

WIRELESS 2G, 3G, 4G

...Creating a new market space with new players

Dominant process and business models still not clear

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Business Issue: How and When should firms make the Infrastructure Shift from the E-Business “S curve” to Mobile?

New Wave of Processes: Evolution of Techno-Processes

Within 3-5 years, customers are going to be mobile

Issue: What does Mobile Processes “look and feel like”? 

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Critical Questions for Executives:

“When should we invest in mobile applications?”

“What kind of mobile applications should we invest in?”

“How can we using mobile to increase the ROI of current e-business investments?”

The IT Industry Challenge: Create Mobile “Profit” Scenarios

Hypothesis: Oil Fueled The Industrial Economy
Wireless Will Fuel The Real-Time Economy
The Big Picture

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Multiple Streams of Innovation

Network Infrastructure
Applications
Access
Hardware
Content
Software
Commerce

MOBILE SOLUTIONS

The challenge: Organize the Chaos
Mobile is the land of techno-babble. Decision-makers are confused – they are trying to make sense out of the buzzword chaos.

Innovation often begins with a technical breakthrough or a catalyst.
To be useful, breakthrough platforms need to be wrapped with application infrastructure.

M-Business Lens - Mobile Application Infrastructure

Application
Breakthrough Platforms
Infrastructure

Application Enablers
Internet Service Providers
Web Services

M-Business Lens - New “Experience” Applications

New Customers
Existing Customers

New Innovation Opportunities
Customer Focus

Revenue growth apps are the fuel of any business. Without revenue there is no business!
Cost-control and productivity apps are the engine of every business.

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Mobile Application Landscape ...

New Customers
New Innovation Opportunities

Existing Customers
Customer Focus

Field Operations Focus
Field Force

Operational Focus
Employees

Breakthrough Platforms

The Catalyst for Mobile Business: Concurrent Streams of Platform Innovation

Breakthrough Platforms

Device Platforms
Cell-phones, PDAs, PocketPCs, Tablets, Appliances

Client Side Software Platforms
Operating Systems, Tools & Browsers

Hardware Platforms
Microprocessors, Chipsets, DSP, Flash Memory, RF Modems

Web Services Platforms
Operating Systems, Tools & Programming Languages

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Tremendous Innovation at the Device Level

- Thin and Light PC
- Many Functions
- Fixed Functions
- Data-Centric
- Mininotebook
- PDA
- Palm-Size PDA
- Superphone
- Enhanced Voice
- Wireless Extensible
- Wireless Specialized
- Voice-Centric
- Mobility Requirements

Tremendous Innovation at the Device Add-on Level

- Bluetooth
- Portable Printer
- Mag Card Reader
- 2D Scanner + Imaging
- 1D Scanner
- Global Positioning System
- GSM/GPRS Phone
- Thumb-board
Device Innovation: A Projected Device Scenario

Mobile Device Innovation

Source: Palm Computing

The Enabler for Mobile Business: Application Infrastructure Innovation

Application Gateways/Platform Providers – Mobile Middleware

Mobile Application Service Providers – Hosted Infrastructure

Mobile Internet Service Providers – (e.g., 3G Network Infrastructure, WiFi)

Mobile Application/Service Enablers (e.g., Databases, Security)

Source: Palm Computing
Separating the Breakthroughs

Device Infrastructure

Application Infrastructure

Network/Connectivity Infrastructure

Network Infrastructure Migration – 1G to 4G

<table>
<thead>
<tr>
<th>AMPS</th>
<th>TDMA ANSI-T136</th>
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<tbody>
<tr>
<td>TACS/NMT</td>
<td>GSM</td>
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<tr>
<td>JTACS</td>
<td>GPRS</td>
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<td>IS-95B</td>
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<td></td>
<td>CDMA2000 3xRTT/1xEV</td>
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<tr>
<td>1G 1980's</td>
<td>2G 1990's</td>
</tr>
<tr>
<td>2G Early 2000's</td>
<td>2.5G</td>
</tr>
<tr>
<td>3G Late 2000's</td>
<td>4G 2010's</td>
</tr>
</tbody>
</table>

Speed (kbps)

9.6/14.4 128 384 384+
Application Infrastructure Innovation

Rethinking the Role of Application Infrastructure

Yesterday: Wireless is a Web Page, just without wires (e.g., WAP)

Today: Mobile is an Enabling Platform that provides an infrastructure for deploying Enterprise Apps

Mobile Infrastructure Problems – First Generation

- Rigid
- Tactical
- Unable to Evolve
- Unable to Scale

Enterprise World

Pervasive Computing

Mobile World

Bluetooth
WAP
3G
Mobitex
PQA
CDMA
GSM
CDPD
TME/X
TDMA
m-Commerce
Lotusnotes
SAP R/3
Oracle.com
Legacy
i2

Enterprise Computing

Mobile World

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Mobile Application Service Providers (e.g., Aether Systems)

Mobile Internet Service Providers (e.g., GoAmerica, Palm.Net)

Infrastructure Breakthrough Platforms

Application Infrastructure Innovation
Mobile Infrastructure Problems – Second Generation

Mobile Infrastructure -- Four Types of Footprints
## Rapid Evolution of Mobile Application Server Infrastructure

<table>
<thead>
<tr>
<th>Point</th>
<th>Platform</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Value to the Enterprise</strong></td>
<td><strong>Scope of Solution</strong></td>
</tr>
<tr>
<td>high</td>
<td>General Mobile + RFID Platform</td>
</tr>
<tr>
<td>Mobile Application Server</td>
<td>Easy to do, difficult to integrate, difficult to customize or scale</td>
</tr>
<tr>
<td>Application Provider</td>
<td>Static content only: Unacceptable user experience, difficult to maintain</td>
</tr>
<tr>
<td>Transcoding Screen-Scraper</td>
<td>Vertically driven; High cost of ownership, no scalability, difficult to maintain</td>
</tr>
<tr>
<td>Custom Solution</td>
<td>Easy to do, difficult to integrate, difficult to customize or scale</td>
</tr>
<tr>
<td>Online, Offline Capability; and Multi-Device</td>
<td>Process integration, Scalable, Multi-channel, Multi-Application</td>
</tr>
</tbody>
</table>

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## Mobile Middleware Must Support Enabling Different User Experiences

**Weather.com – Mobile Consumer Interfaces**

Hard to Predict User Preferences Forces Companies to Select a Flexible Infrastructure Model

[www.ebstrategy.com](http://www.ebstrategy.com)
Our Hypothesis: Web Services and Mobile Services are beginning to converge

Mobile Application Landscape ...

New Customers

Existing Customers

New Innovation Opportunities

Customer Focus

Field Operations Focus

Breakthrough Platforms

Field Force

Operational Focus

Employees

www.ebstrategy.com
Different Types of Mobile Portal Innovation – New Experiences

Mobile Portal Patterns

**Wireless Operator Portals**
- DoCoMo I-Mode
- Vodafone Live

**Multi-Purpose Web Portals**
- Information – Yahoo!, AOL
- Infotainment - Nokia

**Commerce Portals**
- Transaction – Amazon, e-Bay
- Location Specific – GeePS, Vindigo

**Niche and Novel**
- Personal Portals – Yodlee
- Wi-Fi Portals – Starbucks, McD

**Niche and Novel**
- Car and Fleet Telematics – GM OnStar
- Airline Portals – Connexion By Boeing

Typical Mobile Value Chain

[Diagram showing the typical mobile value chain with various content providers like CNN, Reuters, E-Trade, and Yahoo! connected to the carrier, which routes to customers.]
Interesting Mobile Portal Innovation -- Automotive Portals

Telematics -- Two Types

- **Fixed in Dashboard**
  - Satellite Network
  - Onboard Computer
  - Car as node on network

- **Floating Attachments**
  - 3G/GPRS Phones
  - PDA based
  - Person as node on network

- **Personal Automotive**
- **Company Cars and Light Trucks**
- **Fleet**
- **Heavy Trucks**

Telematics Variations

Mobile Portal Innovation -- Telematics

- **SOS Emergency**
- **Roadside Assistance**
- **Embedded Phone**
- **Concierge & Information**
- **Productivity Apps**
- **Entertainment**

- **Integrated Vehicle Safety**
  - Diagnostics
  - Remote Vehicle Functions
  - Stolen Vehicle Tracking
  - Auto Crash Notification
  - Emergency Notification

- **Productivity Applications**
  - Maps and Traffic/Routing
  - Directories
  - Mobile Office, Calendar, and Email
  - M-Commerce

- **Back-Seat Entertainment**
  - Network-Based Applications
  - Streaming Video
  - Games
  - Edu Tools (Books, etc.)

www.ebstrategy.com
Information Services Aggregation with GM OnStar

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Key Takeaways

# of Subscribers

Wireless Voice
Wired Voice
Wired Internet
Wireless Internet


Takeaway: Analysts projections are always too optimistic in the short-term

Source: Salomon Smith Barney Estimates

Mobile Subscribers by Technology

ARC Group 2000

Analogue
Digital
3G
WAP
GPRS

2000 2001 2002 2003 2004 2005

Millions

www.ebstrategy.com
Let's take a minute and ask some critical questions

- Why were these analyst projections way off?
- Based on historical evidence of innovation diffusion and adoption, what factors were not taken into consideration?
- How should we readjust these projections to reflect the "real-adoption" of mobile?

The Macro-Level: Phases of Technology Perception

- Time
- Demand / Visibility
- Slope of Hype
- Hype Peak
- Slope of Despair
- Boom
- Bust
- Slope of Profit
- Consolidation
Where are these on this curve?
A) Wireless, 3G Infrastructure
B) Wi-Fi
C) Mobile Portals (e.g., Vivazzi)

Technology Adoption Life Cycle

Innovators
Early Adopters
Early Majority
Late Majority
Laggards

Pragmatists: Stick with the herd!
Conservatives: Hold on!
Visionaries: Get ahead!
Skeptics: No way!
Techies: Try it!

Source: Geoff Moore
The Mobile Business is crossing the Chasm

<table>
<thead>
<tr>
<th>Segment</th>
<th>Innovators</th>
<th>Early Adopters</th>
<th>Early Majority</th>
<th>Late Majority</th>
<th>Laggards</th>
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<tbody>
<tr>
<td>Technology</td>
<td>Analogue</td>
<td>GSM</td>
<td>GPRS / WLAN</td>
<td>UMTS / WLAN</td>
<td>?</td>
</tr>
<tr>
<td>Market size**</td>
<td>&lt; $100m</td>
<td>&lt; $ 500m</td>
<td>&gt; $ 5bn</td>
<td>~ $ 10bn</td>
<td>?</td>
</tr>
</tbody>
</table>

Mobile Diffusion: Consider the following Pattern

- Demand / Visibility
- Technology Interest Curve
- Mobile Adoption Curve

www.ebstrategy.com
Where are we today: In the Chasm Period of Transition

Enterprise Customer Focus

Business Value, ROI and Application Deployment Issues! Not Technology

Mobile Vendor Focus

Selling mobile technology hype e.g., 3G
Selling unrealistic solutions e.g., m-commerce portals

Vendors are ignoring customers demands: show me how to make money or save money using mobile?

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Key Takeaways

- Major structural shift in infrastructure of Value Chains is beginning to take place
- The focus is moving from technology to mobile applications
- The benefits of technology, rather than the technology itself – interested in the result, not the process
- Mobile is about process change
  - Corporate applications especially field employee facing apps will be the early adopters

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Consumer/Customer Centric Applications

New Customers
- New Innovation Opportunities

Existing Customers
- Customer Focus

Field Operations
- Operational Focus

Field Force

Employees

New forms of Customer Interaction
- Multi-Channel Customer Interaction

Multi-Channel Customer Strategies -- The Big Picture

Multi-Channel Customer Access
- The Case of Banking

Multi-Channel Customer Focus
- The Case of Package Distribution

Starbucks Consumer Experience
- Innovation Using Wi-Fi

I-Mode and FOMA Portals -- History, Evolution and Business Model

New Consumer Trends: Multi-Web & Mobile Imaging Services

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Mobile Customer Framework

Channel Augmentation (Marketing Information)
Channel Extension (Sales and Service Transactions)
M-Commerce Channel (New Service Encounters)
Multi-Channel Synchronization (Building Loyal Relationships)

Strengthening customer relationships - create and extend m-channel relationships and experiences.

Retail Consumer Portals – Brokerage Experiences

Four of the top 10 U.S. securities houses
- Merrill Lynch, Fidelity, Charles Schwab, and E*Trade

Launched retail-mobile services

Current State -
- Fidelity has around 100,000 registered users
- E*Trade less than 25,000 registered users
- Schwab has about 100,000 registered users

During a typical month -
- About 20,000 to 25,000 of the total Schwab-Wireless users access the service
- Each user averaging 14 times during a typical month
Retail Customer Portals – Banking Experiences

In 2000 and 2001, Top U.S., Canadian and European banks
- Bank Of America, First Union and Wells Fargo
- Fleet's Quick & Reilly,
- Bank of Montreal
- Keybank and Washington Mutual
- NatWest, Egg, Bank of Ireland

Launched retail-mobile services
- Account statement/Balance inquiry
- Fund transfer
- Bill payment

Target Market: High Net Worth and High Net Income Customers

Mobile Banking in Europe – WAP based

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Mobile Banking in the U.S -- PDA based Solutions

- Online Trading
- Alerts and Notifications
- Portfolio and Account Management
- Funds Transfer
- Bill Presentment and Payments
- Personalized Interface
- Synchronization with the Web

Retail Customer Portals – Banking Experiences

- **Bank of Montreal**
  - launched its Veev wireless service in 1999 with 724 Solutions
  - Veev, which allowed customers to conduct a range of banking and investment activities
  - broadened June 2001 to offer real-time news feeds, tailored news on topics from sports to politics, and stock activity.

- **Wells Fargo**
  - Service launched in February 2001
  - Popular among 2,500 early adopters who used it mostly to check balances and transfer funds.
  - Service requires Web-ready phones with Sprint PCS service and Palm VII or i705 organizers.
Retail Customer Portals – Banking Experiences

- April 2002, Natwest, Egg U.K. decided to drop its WAP-based mobile banking service at the start of this year, after 16 months of operation.
- On September 1, 2002 Wells Fargo says it will discontinue its mobile banking service due to limited adoption.
  - Wells Fargo now believes customers want “reverse wireless” services such as alerts on mortgage rates and stock market activity
- Exception Japan: Bank of Tokyo-Mitsubishi has 1.5 million wireless users
- Exception Europe: BCP (Portugal) (Unknown # of Users)

Questions for You

Why did Mobile Banking in the U.S and Europe fail?

Why are Mobile Brokerage Solutions fairly successful?
Why Did Mobile Banking Fail?

Limited Understanding the Multi-channel Customer

- Priorities
- Purchase Criteria
- Customer Anger
- Preferences
- Decision Making Process
- User Behavior
- Functional Needs
- Systems Economics

The Customer Interface

Channels Offering Systems Apps Assets

“Outside In” vs. “Inside Out”

Customer-Facing Process Upgrades

Brick & Mortar
- Paper based
- IVR/Call Center Invested
- Tradition and Jurisdiction
- Service (Payments, Signatures)
- Changes and modifications

Web
- Speed
- Customization
- Content
- Personalized Transactions
- One-Stop Service

Click-n-Brick Processes
Multi-Channel Infrastructure

Cross-Channel process synchronization is work-in-progress.
**Process Upgrades - Brick, Click, and Flicks**

**Brick & Mortar**
- Paper-Based
- IVR/Call-Center
- Tradition and Jurisdiction
- Employee-Centric
- Constant Changes

**Web**
- Speed
- Customization
- Content
- Personalized Transactions
- One-Stop Service

**Mobile**
- Real-Time
- Process
- Optimized to Device
- Personalized Transactions

---

**Click-n-Brick-n-Flicks**

*Multi-Channel Infrastructure*

Introducing a new process variable is confusing
Cross-cutter Process are very hard to design and build

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**Multi-Channel Customer Strategies -- The Big Picture**

**Multi-Channel Customer Access**
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**Multi-Channel Customer Focus**
- The Case of Package Distribution

**Starbucks Consumer Experience**
- Innovation Using Wi-Fi

**I-Mode and FOMA Portals**
- History, Evolution and Business Model

**New Consumer Trends**
- Multi-Web & Mobile Imaging Services
Mobile and Logistics/Distribution – Mature Users

FedEx
UPS
Airborne/DHL
TNT
Deutche Post

Brick-Click-Flick -- Mobile package tracking and distribution is part of the overall business landscape. It is cost of the doing business!

UPS and FedEx Mobile Vision: Provide Better Customer Service

Each package is important
but there are millions of them, dispersed over millions of square miles

Each delivery has to be made “on time”
but there is traffic, varying volumes of packages, weather fluctuations, …

… and in cases of failure
customers want to know where the package is
who signed for it
when can it be redelivered

Information Services Wrapped around Package Delivery
Evolution of Capabilities
UPS Wireless Timeline - 1986

- Package Tracking System
  - Tracked air packages only
  - Scanned package bar code at origin & destination buildings

86                91                93                96                 99

Source: UPS
www.ebstrategy.com

Evolution of Capabilities
UPS Wireless Timeline - 1991

- DIAD I
  - Custom data collector
  - First to capture signature
  - Uploaded at end of day

86                91                93                96                 99

Source: UPS
www.ebstrategy.com
Evolution of Capabilities
UPS Wireless Timeline - 1993

- DIAD II
  - Tracks package info in real time
  - First nationwide cellular service

86 91 93 96 99

Source: UPS

---

Evolution of Capabilities
UPS Wireless Timeline - 1996

- First Wearable Scanner
  - Enabled full-visibility tracking
  - Scan when package handled
  - Doesn’t hinder sort productivity

86 91 93 96 99

Source: UPS
Evolution of Capabilities
UPS Wireless Timeline - 1999

**DIAD III**
- Built-in data radio
- On-the-spot tracking
- Immediate two-way comm.

![Diagram showing evolution of capabilities from 1986 to 1999 with DIAD III](image)

Source: UPS

Evolution of Capabilities
UPS Wireless Timeline - 2004

**DIAD IV**
- Global Positioning Satellite (GPS)
- 128 megabytes of memory – 20 times the capacity of the DIAD III.
- Color Screen
- Real-Time connectivity

![Diagram showing evolution of capabilities from 1986 to 2004 with DIAD IV](image)

Source: UPS
UPS Customer Self Service Applications

- Provide Mobile Customers
  - Drop box locator
  - Quick cost calculator
  - Time-in-transit estimator
  - Package tracker

- Saves UPS more than $1.50 each time a customer uses mobile technology rather than contacting their call center

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  - Innovation Using Wi-Fi
- I-Mode and FOMA Portals – History, Evolution and Business Model
- New Consumer Trends: Multi-Web & Mobile Imaging Services
### Starbucks Big Idea – Increase Customer Lock-in using Wi-Fi

- **Starbucks Business Model:**
  - Lifestyle Company – aimed at high-income individuals
  - Value proposition: Unique Consumer Experience
  - 5,600 locations in the U.S

- **Starbucks Business Challenge:**
  - How to keep the Consumer Experience Fresh, Unique and Enriching

- **Differentiation: Technology Enabled Consumer Experience**
  - Access portal for customers

---

### Starbucks Wi-Fi Project History

- **2001 – MobileStar and Starbucks**
  - deployed access to 500 Starbucks and airport lounges.

- **October 2001**
  - MobileStar went bankrupt
  - Assets acquired by VoiceStream Wireless Corp
  - VoiceStream acquired by DT and branded T-Mobile in early 2002

- **August 2002 Re-Launch**
  - T-Mobile offering the service at 1,200 Starbucks Coffee Co. locations

- **Customer Access Model**
  - Customers can access the service after establishing a HotSpot account using a PCMCIA Card
  - 802.11b technology in front and T-1 connection in the back. Speed limited by the T-1 connection

- **Initial Target Market**
  - Realtors, Business Professionals
### Starbucks Wi-Fi -- Pricing Model

- **Free 24-hour trial**
- **Unlimited Local Monthly rates**
  - Unlimited local plans beginning at $30 per month for unlimited minutes and 500 megabytes of data transfers.
  - Minutes used outside the local area will be charged at 15 cents per minute with additional megabytes charged at 25 cents per megabyte.
- **Unlimited National Monthly Rates for broader travelers**
  - $50 per month provides unlimited minutes anywhere in the country and the same 500 megabytes of data transfer.
  - Additional megabytes are also charged at 25 cents per megabyte.
- **Prepaid Plans for occasional users**
  - $20 for 120 nationwide minutes or $50 for 300 nationwide minutes.
- **Metered Plans**
  - $3 per month for 15 nationwide minutes, with each additional minute charged at 25 cents.

### Adjusting the Pricing Model (March 2003)

<table>
<thead>
<tr>
<th>Old Pricing</th>
<th>New Pricing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unlimited Local (500 MB) $29.99/month</td>
<td>Unlimited National (1 yr. contract) $29.99/month</td>
</tr>
<tr>
<td>Prepay 20 $20.00</td>
<td>Prepay 300 $50.00 (minimum session - 10 mins.)</td>
</tr>
<tr>
<td>Prepay 300 $50.00</td>
<td>Pay-as-you-go $0.10/min. (minimum session - 60 mins.)</td>
</tr>
<tr>
<td>Pay-as-you-go $2.99 (for 15 minutes, then 25 cents/minute</td>
<td></td>
</tr>
</tbody>
</table>
T-Mobile HotSpot and Starbucks -- 2004

Locations
- Over 2100 Starbucks stores now, 2,600 by year end
- Over 150 Starbucks UK coffee shops

Network Usage
- Early adoption is impressive and growing – double digits growth each month
- Average of ~45 min. per session steady over last 2 yrs
- Its easy and it works: customer sat levels are high
- Starbucks internal usage as an important proof point – 600 field managers now use the network

Pricing
- Further discounts for bundling with cell-phone service
- Competition will further force pricing down Many options to match

Retail Wi-Fi -- How it Works

[Diagram of how Retail Wi-Fi works]

www.ebstrategy.com
The Economic Model

- U.S. T-Mobile hotspots were grossing US$400K per month in January 2003.
- U.S. T-Mobile hotspots were grossing $1.4 M by the end of 2003.
- With 4,200 locations by year’s end, $1.4M works out to $13 per hotspot per day on average.
- With ~ $400 per month per store, how does T-Mobile ever expect to even pay on a current basis for the cost of each store’s dedicated T-1 line, much less other ongoing costs, and the original capital expenditure?
- T-Mobile would need to at least quadruple this revenue figure to pay out CapX and current operational costs.

**Issue:** What should T-Mobile do to get higher penetration and usage?

Bottomline;
Starbucks – creating unique experiences

Focus: Incremental Consumer Experience Innovation

**Key innovation:** Understand that certain business assets drive strong business case
- Leverage “Free” in-store marketing
- Leverage existing customer trust & credibility
- Enhance existing marketing/loyalty programs
- Desire for brand innovation
- Leverage Attractive Location Assets

What can other retailers learn from the (Brick & Mobile) Starbucks experience?
Business Value Creation – Evaluating the Basics

**Business Value to Starbucks**
- Marketing Value
- Advertising Value
- Brand Value of the Perception of being an Innovator
- Financial Value due to more sales
- Customer Attraction and Retention Value

**Business Value to T-Mobile**
- Marketing Value
- Advertising Value
- Brand Value of the Perception of being an Innovator
- Financial Value due to more sales
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- Starbucks Consumer Experience
  Innovation Using Wi-Fi
- I-Mode and FOMA Portals – History, Evolution and Business Model
- New Consumer Trends: Multi-Web & Mobile Imaging Services
**NTT DoCoMo: I-Mode Portal**

- DoCoMo was born from NTT
  - Spun off by NTT, Japan, in 1992 – High Profit Margin
  - Largest single country wireless operator in the world
  - I-Mode was born from DoCoMo

- March 1997
  - Started PDC-Packet service (their version of GSM)

- Feb 1999: launch for mobile subscribers
  - Implemented on DoCoMo’s “always on” 9.6 kbps PDC packet network
  - Text, images, animated images, colors, 16-chord ringing tones

- Key Innovation
  - **Simple, easy to use** ➔ Explosive growth of content and users
  - Created a Win-win relationship between content providers and DoCoMo
  - Microbilling service for content providers via phone bill

---

**Japanese Telecom Landscape (June 2004)**

[Diagram showing various telecom companies and services, including NTT-Group, Kyocera, Vodafone, TEPCO, Cable & Wireless, etc.]

[Source: EuroTechnology]
3G FOMA -- Freedom Of Multimedia Access

- First W-CDMA service in the world
  - May 2001: pilot
  - Oct 2001: commercial service within a limited area in Tokyo
  - Sep 2002: 134k subscribers
  - 2004: subscriber target 6m, 97% nationwide coverage

- Implemented on W-CDMA
  - packet network (384/64 kbps) and
  - circuit switched (64/64 kbps)

- Voice communication service plus:
  - Video streaming service (i-motion)
  - Videophone service
  - High-speed Web access
  - Multiaccess (simultaneous voice and data access)

3G FOMA Service Content

<table>
<thead>
<tr>
<th>Service</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>i-mode</td>
<td>Up to 384kbps downlink high-speed access</td>
</tr>
<tr>
<td></td>
<td>Can attach still pictures and music to i-mode mails</td>
</tr>
<tr>
<td></td>
<td>Can transmit up to 5,000 characters when sending e-mail</td>
</tr>
<tr>
<td></td>
<td>Can use i-appli contents</td>
</tr>
<tr>
<td></td>
<td>Video clipping service using i-mode &lt;i-motion&gt;</td>
</tr>
<tr>
<td>Videophone</td>
<td>Comfortable motion picture transmission using 64K digital transmission</td>
</tr>
<tr>
<td>M-stage Service</td>
<td>DoCoMo's music distribution service &lt;M-stage music&gt;</td>
</tr>
<tr>
<td></td>
<td>DoCoMo's video distribution service</td>
</tr>
<tr>
<td></td>
<td>DoCoMo's Live distribution service &lt;V-Live&gt;</td>
</tr>
<tr>
<td>High-speed Data Communication</td>
<td>Up to 384kbps downlink and 64kbps uplink packet transmission</td>
</tr>
<tr>
<td></td>
<td>64kbps digital communication</td>
</tr>
<tr>
<td>Multi-access</td>
<td>Can send data over the packet switched network while speaking on the phone</td>
</tr>
<tr>
<td>Voice Communication</td>
<td>Voice quality that is as good as fixed line service</td>
</tr>
<tr>
<td></td>
<td>Dual mode (FOMA/ PDC) service for increased convenience</td>
</tr>
<tr>
<td></td>
<td>(Can use both services with the same phone number)</td>
</tr>
<tr>
<td></td>
<td>International roaming services</td>
</tr>
</tbody>
</table>
**FOMA Subscriber Growth**

- Total number of FOMA subscribers exceeded 3 million on Mar. 30, 2004, owing primarily to release of “900 Series” handsets.
- FOMA subscriber base is projected to reach 10.6 million as of Mar. 31, 2005.

Source: NTT DoCoMo – April 2004

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**FOMA Future: Link to Brick & Mortar Services**

- Field trial of airport check-in service using FeliCa-enabled i-mode handsets is in progress.
- Handset-based check-in service to be made available at principal international & domestic airports in the future. We are studying ways to expand service offerings and improve CRM through linkage with airline mileage plans.

Source: NTT DoCoMo – April 2004
Multi-Channel Customer Strategies – The Big Picture

Multi-Channel Customer Access
The Case of Banking

Multi-Channel Customer Focus
The Case of Package Distribution

Starbucks Consumer Experience
Innovation Using Wi-Fi

I-Mode and FOMA Portals – History,
Evolution and Business Model

New Consumer Trends: Multi-Web
& Mobile Imaging Services

Multi-Channel Portal Trend
Driven by Device Convergence

Mobility has already taken over
• Portable FM radios
• Pagers
• Watches
• Alarm clocks

Mobility starts to impact the market
• Portable CD & cassette players
• MP3 players
• Digital cameras
• PDAs

Mobility will have a long term impact
• Laptops
• Web browser devices
• Video camcorders
• Traditional analog media

Source: Nokia
The Emerging Case of Imaging (MMS) Portals

Trend: Two Consumer Phone Categories

**IMAGING PHONES**
Replacing cameras and video recorders without compromising communications functionalities

**PHONES WITH CAMERA**
Imaging functions adds value to phone alongside other features

Source: Nokia

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**Evolution of Image Capture**

<table>
<thead>
<tr>
<th>Camera Type</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Film-based Cameras</td>
<td>1900</td>
</tr>
<tr>
<td>Camcorders</td>
<td>mid-1980s</td>
</tr>
<tr>
<td>Digital Cameras</td>
<td>mid-1990s</td>
</tr>
<tr>
<td>Digital Video Cameras</td>
<td>Late-1990s</td>
</tr>
<tr>
<td>Camera Phones (Photos)</td>
<td>2002</td>
</tr>
<tr>
<td>Camera Phones (Vid Clips)</td>
<td>2003</td>
</tr>
<tr>
<td>Camera Phones (Live Video)</td>
<td>2005</td>
</tr>
</tbody>
</table>

Cameras/video cameras trends
- Smaller, more powerful, connected
- Time from image capture to publication has been reduced to near real-time
- True convergence – imaging, communications, computing

Source: Nokia

www.ebstrategy.com
Mobile Imaging Value Proposition

Store up hundreds of my photos & video clips.
That is my photo album in a pocket

Print high quality images at home, office and retail

Share my images over MMS or e-mail as easily as send a text message

Capture and print good quality photos in fast easy way

Edit video & still content on the move with different editing applications

View my images in bright colors and a large size

Source: Nokia

Imaging Behavior

Memory keeping  Detail documenting
Long-term consumption

Emotional content

Social snapping  Informative illustration
Short-term

Purposeful content

Source: Nokia
Multi-Channel Customer Strategies – The Big Picture

Starbucks Consumer Experience Innovation Using Wi-Fi

McDonald’s Wi-Fi Business Model – Stupid or Clever?

I-Mode Portal – History, Evolution and Business Model

FOMA – Next Generation Portal

Key Takeaways
Things to think about further…

Lessons from Pioneers

<table>
<thead>
<tr>
<th>Promise</th>
<th>Reality</th>
<th>Business Problem:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to new customers</td>
<td>Few transact online</td>
<td>Overspend – Business Model not sustaining</td>
</tr>
<tr>
<td>Lower acquisition costs</td>
<td>Acquisition costs higher</td>
<td>Churn - Don’t differentiate their customer offerings</td>
</tr>
<tr>
<td>Lots of new products that create critical mass</td>
<td>No ROI in sight for any products</td>
<td>Value - Don’t understand customer value proposition</td>
</tr>
</tbody>
</table>

www.ebstrategy.com
Going Forward: A New Era of Consumer Mobility

- Mobile Portals are moving rapidly into a new phase of advanced features and services

- Three key industry drivers are:
  - Applications on the move
  - Successful take off of Multimedia Messaging Service
  - Explosion of new innovative products
    - Music, Media and Entertainment
    - Gaming, Social Networking
    - Car and Fleet Telematics
    - Imaging -- Camera Phones and Mobile Printing

- Increasing role of software based on open and compatible standards
  - Leading to a richer consumer experience