Strategies for Mobile Wireless Internet

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Parallels with Television

- Electronic components firms assembled and sold television receivers
- Producer of broadcasting equipment founded network of television stations
- Little demand for television receivers until there was programming to receive
- Software drove demand for hardware
Parallels with Adoption of VCRs

- Television receiver firms introduced video cassette recorders to extend TV demand
- Little demand for VCRs until there was programming to receive
- Software drove demand for hardware
- Standards war resolved in one format per continent, e.g., Sony Betamax vs. VHS

Parallels with Cable-TV and Programming Packaging Industry

- Cable service providers extended their networks to gain increasing returns to scale
- Little demand for cable subscriptions until there was programming to receive
- Software drove demand for hardware
Parallels with Cable-TV and Programming Packaging Industry

- HBO bought “exclusive” rights to syndicate studios’ movies to foreclose competitors
  - Studios gained power and cost of syndication rights rose astronomically
  - New studios emerged to fill shortfall
- Programming packagers developed own exclusive programming (which they later syndicated to other distribution channels)

Justifications for Pioneering

“If you build the field, they will come …”

- Is first-mover advantage large enough to justify investments and sustainable?
- Which firms will subsidize pioneering
  - with which partners?
  - for how long?
  - with what expectation of gain?
Justifications for Pioneering

- Carriers
- Manufacturers of digital handsets
- Internet service providers (ISPs)
- Web hosting firms
- Network providers
- Software providers
- Independent portals
- Content providers
- Banks and financial service firms
- Merchants selling through Internet

Many Pieces ... Many Suppliers

Content Provider/Portal
Content server, Communications, WAP or SMS Gateway, Internet or Network Access

Carrier -- Network coverage, Available capacity, ISP & Access to Internet, CSD Billing, SMS Center

Users -- Mobile Phone/PDA with Browser, Dial-up Information, Site Information, Cash

WAP or SMS Gateway

Devices & Browsers

Network Access
**Competition vs. Cooperation**

Each specialist supplier wants to supply as many value-adding goods and services as possible (often in competition with partners).

Specialist suppliers join each others’ consortia to pioneer standards and entice early-adopter consumers to purchase products to create new lines of business.

Strategy evolves along diverse paths, creating conflicts.

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**Software Applications Value Chain**

**Data Network:** GSM, GPRS, EDGE UTMS, CDPD, BLUETOOTH

**Network/Operator Infrastructure:** Base Stations, Web Servers, Pre-paid billing, IP Billing, WAP Gateways

**Security:** Encryption, Digital Signatures, Kerberos

**Horizontal Applications:** E-mail, Calendar, Synch, Contact Management, Location, Voice Recognition

**Vertical Applications:** Banking, Trading, Healthcare

**Operating Systems:** PalmOS, Microsoft CE, Linux

**Handset & Terminal Devices:** Display, SIM

**Portal:** Content Development, Interface Design, Personalization, User Access & Control
Move Up Value Chain By Increasing Solution Value (and Complexity)

- Custom Applications
- Functional Enablement
- Bulletin Boards
- Travel Management
- Intranet Applications and HR Management
- Meeting Calendar
- Personal Information Management (PIM)
- E-mail and Messaging

Will Technology Drive Adoption?

- Transparency & Interactivity
- Content/ Services, M-Commerce
- Cash Flow
- Time to Commercialize
Differing Supplier Assumptions

- All consumers have digital handsets -- whether they want Internet access (or not)
- Consumers want video streaming and graphics on their telephony handsets -- hence 3G technologies are necessary
  - new spectrum, new network infrastructure
  - new communications software protocols
  - websites coded to accommodate multiple technology standards

Is Technology Deterring Adoptions?

- 3G issues take time to resolve (investments)
- 3G only facilitates video and audio features
- Mobile wireless Internet has been happening using 2.5G technology
  - Consumers have been disappointed with WAP
    - Handset availability
    - Speed of transactions
  - Carriers unwilling to subsidize WAP handsets?
**AT&T’s PocketNet Service**

- Premium version offered over Cellular Digital Packet Data (CDPD) network
- Basic stock quotes, movie & restaurant listings, directions, Yellow & White pages, email, access to Yahoo! & Excite portals, and ability to access any URL
- Opportunity to migrate users upward to complex technologies later
- Alliance with NTT DoCoMo to use *i-mode*

**Differing Consumer Assumptions**

- Early is better than perfect
- NTT DoCoMo’s Japanese consumers -- largely teenagers and early 20s -- accept lower graphics quality, text-only service for convenience of *i-mode* programming
  - SMS communications with peers
  - Independence and control over consumption
  - Games and gambling
U.S. Consumers Want Utility

- Digital communications device must be loaded with most popular and convenient Internet services and content
  - Website/portal brand equity matters
  - Personalization important
- Providers have 30- to 300-second window to serve/entertain subscribers
  - Short attention span services

Payoff is in m-commerce fees

- Business models are about how to extract rents -- what generates revenues?
- Many services are loss-leaders or must be given away (bundled) in calling plans
- Fewer Internet business models can be viable on mobile wireless services
Some Business Models Fail?

- Advertising model
  - content provider charges fees for placing banners, buttons, and other ads on site
  - personalized portal offers incentive to market products to selected consumers

  But European consumers will listen to commercials in exchange for free minutes

- NTT DoCoMo sells advertising in i-mode

- Affiliate model
  - Merchant has affiliates whose Websites have click through to the merchant
  - Every time visitor to an affiliate’s site clicks through to the merchant's site and buys something, the affiliate gets a fee (percentage of revenues)

  Portals can charge “click-through” fee
Some Business Models Fail?

- Infomediary model
  - Collects information on consumers and their buying habits from personalization profile
  - Sells information to firms that mine it for important patterns to make more-effective offers to attractive customers

Business Models That Work

- Brokerage Model
  - Firms act as market makers to bring buyers and sellers together and charge for transactions that they enable

- Brokers include those engaged in
  - buy/sell, fulfillment, market exchange, buyer aggregation, distributor, virtual mall, infomediary, auction broker, reverse auctions, sales via classified, and other search agents that bring buyer and supplier together
Business Models That Work

- **Merchant model** -- wholesalers and retailers sell goods and services over the Internet

- **Manufacturing model** -- disintermediation
  - manufacturers try to reach consumers directly through the Internet
  - instead of going through a wholesaler, retailer, or other channels of distribution

Business Models That Work

- **Utility model** -- e.g., prepaid cards
  - Customers pay as they go
  - Activities are metered and users pay for the services that they consume
    - e.g., minimum calling plans
    - e.g., users pay per download
Business Models That Work

- **Subscription model** -- members pay subscription price and in return receive high-quality content.
- Once customers have paid subscription fee, they often use the service much more than they ordinarily would.

Handset Provider Strategy

- Handset manufacturers do NOT create own pre-set portals in their devices.
- Accelerate investments in 3G infrastructure with technological upgrades before they are demanded.
- Encourage “thick client” solutions on hand set, e.g., “smart” devices, SIM cards, more features, PDA-like display.
**Critical Carrier’s Assumption**

- Average revenues per user will NOT fall -- even as prices fall -- because subscribers’ minutes of use will increase if valuable content is offered
- Willingness to subsidize handsets driven by expectations of 3G desirability

**Carrier Seeks Low Churn Rate**

- Higher revenues per user
  - diverse range of subscriber services
  - more minutes of value-adding data services
- Greater subscriber loyalty
  - higher personalization and convenience
  - user friendliness and switching barriers
  - offer E-Trade, Schwab or preferred service
Carrier Strategy Could Include

- Multiple transmission standards for diverse mobile Internet handsets, protocols
- Open access to encourage third parties to create services to accelerate mobile data use
  - cf. France Telecom’s closed environment vs. NTT DoCoMo’s 4,000 independent sites
- Own engaging portal -- disintermediate to information providers (cut out portals)
- Handset subsidization

Yahoo! Is Agnostic About Technology

- Yahoo! builds versions of its portal that are compatible with every mobile standard, every protocol, every language
- Yahoo! uses its market leadership to ensure positioning on all mobile devices (in competition with carrier’s own portal)
Can Independent Portal Survive?

- Provide valuable information, e.g., live share prices, news, weather, reviews
- Adapt to multiple mobile platforms
- Offer multiple delivery mechanisms, e.g., IVR, SMS, WAP, XML
- Technological leadership -- new platforms
- Sell prepaid calling cards to capture cash flows that carriers will not reverse bill

Can Independent Portal Survive?

- Build alliances with either media partners or operators at a very early stage
- Be flexible about business model if market potential is attractive enough
  - Take percentage of revenues if brand equity is strong enough (meter traffic created)
  - Give away transaction/ content revenues in other situations -- earn rents another way
Portal Could Ally with Banks

- Banks have been building out their technological platforms in anticipation of 3G networks and services.
- Banks have lower churn rates than carriers (due to higher brand equity).
- Banks could give away phones pre-set to their own portals and offer ISP service.

Relegate carriers to mere providers of pipes.