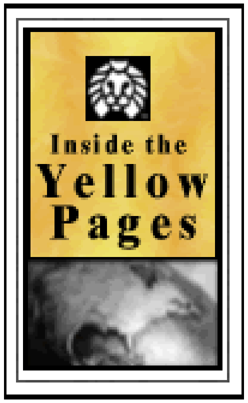
Beyond Wireless:
A Look to the Future



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1 The Wireless World

The difference between wireless and mobile

- Wireless is a technology
- Mobility is a state of mind
- Multi-channel strategies
- User-centric view of mobility, not techno-centric view

Vision

- “Always connected to everything”
- “The mobile internet”
- Looking tarnished in Europe
  - It’s clearly not “the mobile internet”
  - Confusion about what to do next
- Very successful in Japan
  - iMode
- Consumers and road warriors
  - European operators targeted consumers
  - Business market potentially much larger in US

Business

- Players
  - Large telcos operating mobile networks (analogue & digital)
  - Wireless-only ISPs (Metricom/Go America)
  - Portals - operator-linked & independent (Vizzavi, Yahoo!)
  - Content providers (UpMyStreet, Zagat)
  - Aggregators/syndicators (InfoSpace)
  - Phone & PDA makers (Nokia, Handspring)
- The wireless service provider owns the relationship with the users and gather the money
    - Knowledge of who the user is
    - Location information
    - Billing information
- Many intersecting relationships during early phase of the industry

Technology

- Tapestry of technologies
  - Carrier technologies
  - Hardware (phones and PDAs)
  - Location technologies
  - Interface standards
- Lack of single carrier standard may hold back consumer take-up
- “3G” attracting attention
- Technology path still not clear

Technology summary

- **Single device**
  - WAP phone, iMode phone or similar “smartphone”
    - Usually access dedicated WAP or iMode sites only
    - Some offer e-mail access also
    - No local storage possible for WAP phones
  - Wireless PDA
    - Can browse Web sites - easiest if they are simple
    - Can download content from web sites
  - Unwired PDAs
    - Can download content from web sites when connected to host PC
- **Multiple devices**
  - Notebook PC or PDA with wireless modem or link to mobile phone with modem
- **Voice as a major interface**
- **Future will see wide selection of single & multiple devices**
  - Tuned to needs of different classes of user
  - But not in the short term…
- **No one technology has emerged as a clear hit with users**
  - Apart from iMode

Business

- Consumer uncertainty
- … or universal uncertainty?
- Little demand in Europe for current services
  - WAP phones sold but not used
  - Need for full 3G services not proven
  - Several start-ups now run-downs
- Investors losing confidence in wireless companies
  - Operators have huge debts
  - Many content start-ups have no convincing business model
  - Recent 3G delays are further eroding investor confidence

Business

- Where is the market?
  - US will account for less than 10% of advertising, commerce & content revenues by 2003
    - $0.7 bn
  - Asia will account for 66%
  - Total market $7.5 billion
    - Jupiter Media Metrix
- US market held back by operators' unwillingness to share airtime revenues
- Similar experience in Europe
- Successful business model for iMode in Japan

Ad-supported business model

- Very small display space
- Studies and trials show limited user acceptance
- Location-based advertising
  - Display & text messaging
  - Content owner needs to have access to location information
  - Owned by operator
  - Terms of any deal to sell this unclear at the moment
- Directory entry ranking
  - User may stop looking after first few entries
- Couponing
  - Lakeside/ZagMe experiment suggests some optimism
  - Participating retailers had problems managing demand!
  - Highly localised

Airtime business model

- Revenue share
  - Part of iMode's success
  - Not probable that US operators will adopt NTT DoCoMo's strategy
- Licence or syndication fees
  - Few content providers have succeeded in getting licence fees
  - Potential for strong YP owner in productive local markets?
    - Operators may see YP content as essential for portal
- No-money exchanges
  - Common experimental approach
- Direct payment from user
  - Hard to implement for low-value business
  - Needs separate charging channel

Japan: iMode

- Most successful mobile service
  - Revenue model for content providers has lead to plethora of content & applications
  - Entertainment & games dominate
  - Strong marketing
  - Lower levels of PC internet use in Japan
  - Always on

What's working in Europe

- Who's got it right
  - SMS information services
    - Sports info, reality TV
    - Users familiar with technology
      - Especially young users
    - Available on almost all phones
    - Free to user - sponsored content
    - Advertising opportunities
      - ZagMe/Lakeside experiment
- Where it's gone wrong
  - Operators
  - WAP content providers
  - Dangerous overspending on 3G
  - No clear path to m-commerce
  - Operator greed
  - Content providers with no compelling proposition
  - Failure to awaken consumer interest
  - Underestimating how long it would take

2 Critical Success Factors

Yellow Pages and Wireless: Perfect Together?

- Compact YP dataset fits limited wireless presentation options
- Benefits from making data dynamic
- Supports ad-based models
  - Highly measurable
  - Intriguing couponing opportunities
  - Dynamic pricing opportunities
- Access is sporadic and need-driven
  - Reinforces traditional YP role: directional information in place at time of need
- YP scoping makes data inherently local
  - Detailed local content for local use
  - Local market knowledge; paid content adds depth
- Making the relationship with the operator work
  - Easier for local information - only have to do deals with selected operators

“Fit”

- Meets need while user mobile
- Compact
- Structured
- Can be communicated across media (voice, WAP, SMS)
- Communications-based
  - E-mail under-emphasised in Europe
- Synchronisation between personal information stores
- Location-based services
- Interface design for tiny screen
  - …or voice interaction
- Bandwidth limitations
- Device limitations
  - Processing power
- Voice interaction
  - 70% of US mobile calls made from cars
- Web as set-up interface

Price

- Too many European services expensive to access
  - Lengthy WAP calls for limited information
  - “Free WAP weekends”
- Some US operators limit to more expensive price plans
- Some charge for access to anything other than “featured” sites
- Mobile operators vary in attitude towards airtime
  - WAP use cheaper than voice calls for some networks

Accessibility

- No more “walled gardens”
- Not clear that WAP portals were worth it
  - Have some value for beginning users
  - Often concealed service several levels deep
- Many services marketing direct to end user, bypassing operator
- Independent portals not faring any better than operator portals

Coverage

- Content provider coverage area must match or exceed system operator coverage area
- May provide competitive advantage to those with national databases
- Accurate, comprehensive databases are essential
  - Users can see what is missing

Quality

- User expectations extremely high
  - When you're wrong, you're VERY wrong
    - "There's no McDonald's here"
    - "I got off this exit and the Exxon station had been closed down months ago"
- Value-adds increasingly important
  - Getting beyond undifferentiated lists
    - Advertising helps
    - Rating/ranking is highly desirable
    - Limited options even more important with limited screen space
  - Issues in mixing rating and rankings with paid content

Does it need to be mobile?

Mobile is simply a delivery platform; "without added utility, mobile is an exercise in futility"

- Discovery characteristics
  - Locational finding & travel assistance
    - I am here; what's around me?
    - I need X in this geography
      - Gas stations, bathrooms, parking etc
    - Privacy concerns
- Convenience characteristics
  - Access to time-sensitive information
    - Financial
    - legal
  - Access to voluminous information
    - Product data
    - Case citations
      - Mobile - but on notebook PCs & PDAs rather than phones
  - Casual access to obscure data
    - 1948 batting averages?
    - Cost of reaching potential users
    - Is there a viable business model?

3 Frenetic Activity From Every Angle

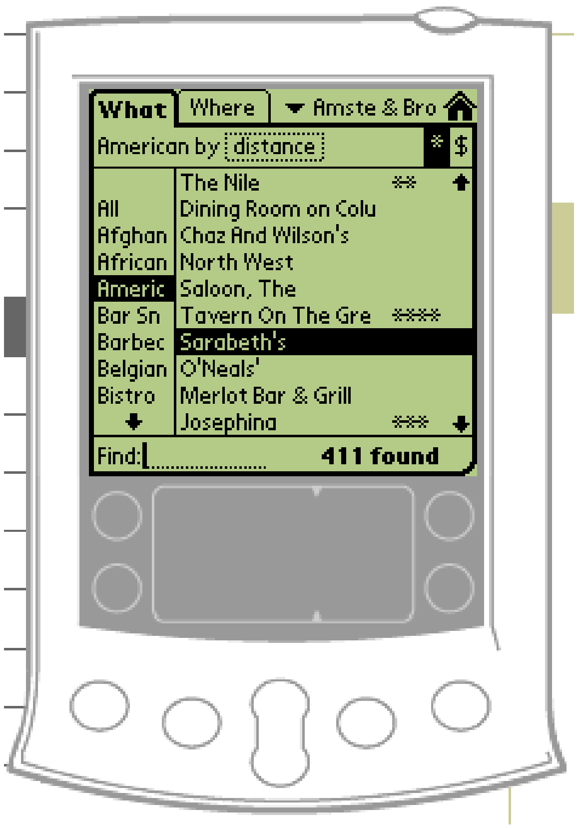
Telco Yellow Pages

- Yell
  - Repurposing of web version
  - Interface problems
    - Hard to give feedback about selection criteria
    - Listings hard to manage
  - Speed
  - No advertising or enhanced entry opportunities
- Verizon
  - SuperPages now offered for WAP users
- WorldPages.com/TransWestern
  - Offers Web and PDA versions
  - Acxiom content

Web-based content providers

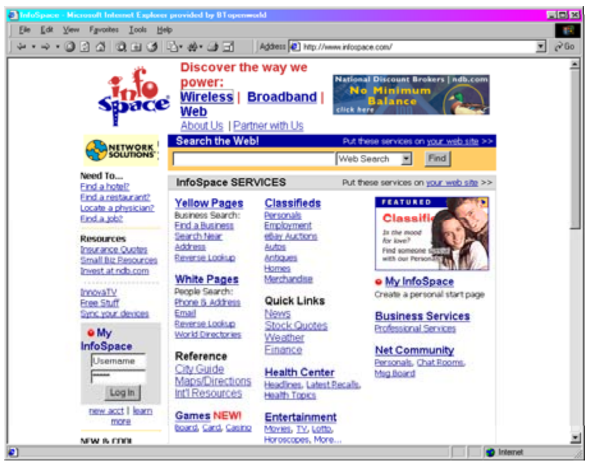
- UpMyStreet
  - Powerful "Find my nearest" feature
  - Needs user to input postcode
- InfoSpace
  - Deals with operators for complete portals
    - Cingular
    - Virgin
    - US YP content: Verizon
    - UK YP content: Thomson Local Directories
- 555-1212.com
  - Making significant wireless directory push
    - InfoSpace content

Distribution platforms



- Vindigo
  - Restaurant & entertainment guides
  - Downloadable to PDA from web via PC
  - Integrated with synchonisation system
  - Updating scheduler
- AvantGo
  - Primarily a software/infrastructure company
  - Also acts as a portal for those who use its software

Aggregators and syndicators



- InfoSpace
  – Complete private-label portal service
  – YP content from independents (Info USA, Thomson)
- ZED / Powertel
  – European
  – White pages; no yellow pages currently
  – Subscription-based

Location Facilitators

- **Go2**
  - Location-based directory services
  - Coverage incomplete
  - Deals with Burger King & Coca-Cola
  - Available on major wireless networks
  - Free entries + premium ($20/month)
  - Couponing available
  - Plans to share commission from retailers with operators
  - Deals with major consumer brands, retailers & branch-based companies
  - Auto-location under trial
  - Power to be significant intermediary
  - Anyone can have a go2 address
- Vicinity
  - Primarily designed to maintain location/outlet directories for national companies
  - Integrates Web and wireless delivery
  - Has technology to determine cellular caller's location to provide nearest location information via IVR
  - Specific interface for infoUSA data

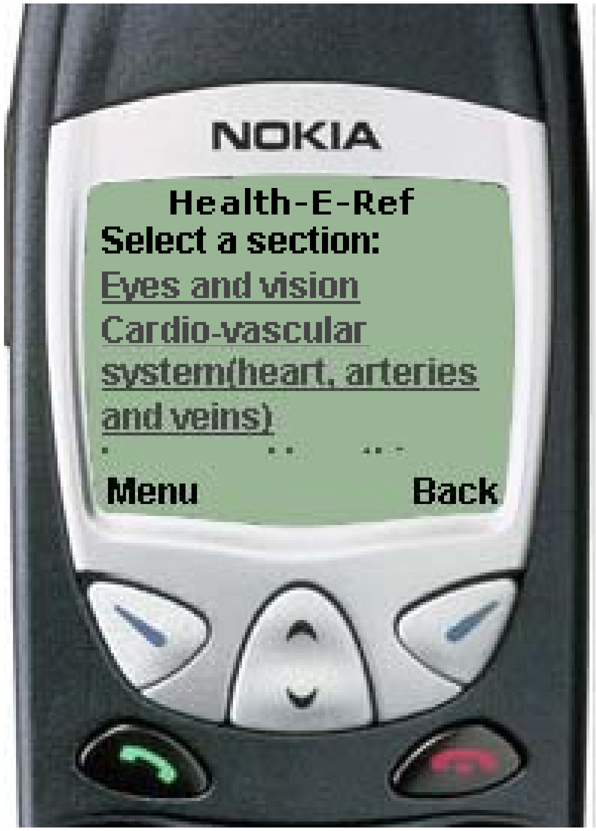
Specialty consumer content

- Zagat
  - Distributes through Vindigo and direct
  - Advertising-based
- eXitSource
  - Highway exit services
  - Advertising-based
- Fodors
  - International travel guides
  - WAP access
  - Downloadable to PDA with real-time updates
  - Advertising based
- Besttoilets.com
  - “the place to go before you need to go”

Specialty BTB content

- Martindale-Hubbell
  - Lawyer contact data and biographies
- Hoover's
  - 17,000 company profiles
  - Via Sprint PCS Wireless Web

Specialty reference applications



- PocketDoctor
  - Start-up
  - Multi-channel strategy
    - Web
    - WAP
    - PDA (with AvantGo)
    - SMS
  - Portal presence
- Westlaw Wireless
  - Largest case law database
  - Full-text access
  - Legal directory access
  - Full PDA support

4

Is wireless the "next big thing?”

Stand back from the hype!

- The “do everything with your mobile” advocates
- Most important to mobile operators & hardware makers
- Will take longer to realise & monetise than the boosters proclaim
- But real opportunities nevertheless

Example applications with high potential value

- Mobile professionals
  - E-mail with attachments
- Early adopters
  - Digital photographs
- General consumers
  - Comparison shopping tools
    - IBC/Qualcomm survey

M-commerce

- Security issues not yet fully solved
- How will transactions work?
- “Knowledge about the world” infrastructure will be expensive to install
- Opportunities in:
  - Location-based services
  - Wireless coupons
  - Wireless banking
- Short-radius transmitters in every window?
  - High-tech sandwich signs

Advertising

- Users in studies & trials lukewarm, but not yet hostile
  - Initial enthusiasm tends to decline over time
- Ads must be targeted to interests
- Little enthusiasm for click-through to voice-call merchant
- How big? The choice is yours:
  - A $0.7 bn business by 2003
    - Jupiter Media Metrix
    - Advertising, commerce, subscriptions (US only)
  - Or…a $4 bn business by 2005
    - Kelsey Group
    - Advertisements, promotions, coupons (US only)
  - Or...a $16 bn business by 2005
    - Ovum
    - Advertising (worldwide)

Advertising

- Segmenting by local users should make advertising affordable for local businesses
  - “Per impression” opportunities like Web portal keyword-driven ads
- 31% of users surveyed by Kelsey/ConStat willing to receive ads in return for free information & services
  - But trial showed declining interest over time
  - 1,000 users in trial

5 Strategic Considerations for YP companies

Don’t rush

You’re not too late so take the time to do it right

- Work out what users and advertisers actually want
  - More likely to succeed with limited, focused services than comprehensive ones
  - Is it worth paying for?
  - Do you need the whole YP?
    - Much harder to use if you put everything in
    - Focus on local markets & niche content
  - How much will it cost to implement?
  - Do you have marketing channels?
    - How much will it cost you to create them if not?
  - Can you build a very simple, intuitive interface?
  - Can you persuade an operator it’s worth having on the default portal?
  - Or can you persuade users it’s worth bypassing the default portal to get to?

Competitive issues

- Operators want “one stop shopping”
  - Natural advantage for those with national YP databases
- Lock-up operator portal slots early
  - No perceived advantage to carrying multiple YP databases
- Having the most advertising is not necessarily an advantage
  - Traditional factor in market dominance conflicts with small display screens
- Having the most information is an advantage
  - Structured content is extremely valuable (e.g. hours, credit cards)
- Quality remains a tough sell
  - Operators will find comfort in established brands

User issues

- Information overload
  - Simply pushing more data at users is a recipe for failure
- Answers not data
  - “Tell me where to go”
- Integrated information
  - “Don’t just tell me the restaurant’s address and phone, make the reservation for me”
- Accurate information
  - Zero tolerance for inaccurate data
  - Expectations rising daily

Advertiser issues

- “You want me to pay how much more?”
  - As distribution technologies proliferate, the value proposition must be crystal clear
  - Wireless may be more visceral than even the Internet
- Highly measurable
  - Impressions
  - Electronic coupon redemptions
  - PI pricing may make sense initially
- High value
  - Real-time updating
  - VOP – Vicinity of Purchase advertising medium
  - Dynamic pricing
  - Bluetooth interface?
- Ubiquity
  - Everywhere the advertiser needs to be

Technology issues

- Which technology?
  - Building a good WAP interface to a good web site need not be very expensive
  - Versioning for multiple devices is major problem
  - Which devices does your market use?
  - Content management systems should support several interfaces
- Design user interfaces for small screens & limited inputs
- Content providers should focus on:
  - User needs
  - Content structure, management & storage for multi-channel delivery
  - Develop/deploy multiple interfaces to relevant content

Strategic issues

- Timing
  - Most pure-play content providers with no operator deals will lose money for foreseeable future
  - Need compelling content and big marketing budgets to reach end-users
- Don’t do over-long deals
- Don’t do exclusive deals
- Pay attention to new competitors
  - Can you own the relationship with the user?
  - Can you find a space in the transaction flow?
- Partnerships
  - Relationships with operators important
  - Not clear which way the money will flow - likely to depend on relative negotiating strength in early days
    - Must-have information vs must-have access

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