



PRESENTS

**NETWORLD INTEROP**

an INTEROP event

# Wireless LAN Hot Spots

## Projections for 2001-2002

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# What is a Wireless LAN Hot Spot?

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- A publicly accessible location that provides broadband wireless Internet access.
- Characteristics of WLAN Hot Spots
  - High Speed
    - 11Mbps wireless
    - DSL/T1 connectivity to the Internet
  - Limited coverage area (~100 meters indoors)
  - Uses Wi-Fi (802.11b) certified equipment

# Factors influencing the success of Wireless LAN Hot Spots

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- Growing footprint

Site Type	Number of public sites			
	Domestic		International	
	2001	2002	2001	2002
<b>Airports</b>	8	25	4	10
<b>Airline Lounges</b>	40	100	40	80
<b>Hotels</b>	400	900	200	500
<b>Retail</b>	900	4000	NA	1000
<b><i>Total</i></b>	<b><i>1348</i></b>	<b><i>5025</i></b>	<b><i>244</i></b>	<b><i>1590</i></b>

# Factors influencing the success of Wireless LAN Hot Spots (cont'd)

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- Market awareness/education
  - WECA 'Wi-Fi' marketing efforts
  - Analysis/comparison to 3G networks
- Corporate use of VPNs
  - Secure connection to corporate resources
- Broadband at home
  - Cable/DSL Internet access becoming common
  - Also requires VPN access to corporation

# Factors influencing the success of Wireless LAN Hot Spots (cont'd)

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- Ease of use
  - WLAN Detection (SSID browsing)
  - Authentication process
  - Hot Spot Roaming
- Wi-Fi enabled PDAs
  - Portable form factor

# Role of large cellular carriers

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- Market awareness/validation
- 3G build-out
- Bring large customer base to the table
- Bundling of WLAN Hot Spot service with 3G service

# Complimentary nature of Wi-Fi Hot Spots and 3G

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	<b>Wi-Fi Hot Spot</b>	<b>3G Cellular</b>
<b>Typical Coverage Area</b>	Inside	Outside
<b>Speed</b>	11 Mbps	2 Mbps
<b>Range</b>	~100 meters	miles

# Hot Spot Roaming

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- What does roaming mean for the consumer?
  - Short Term
    - Use same username and password for authentication
    - Single bill from home ISP
  - Long Term
    - Seamless handoff with other Hot Spot providers
    - Seamless handoffs with 3G operators



# Hot Spot Roaming (cont'd)

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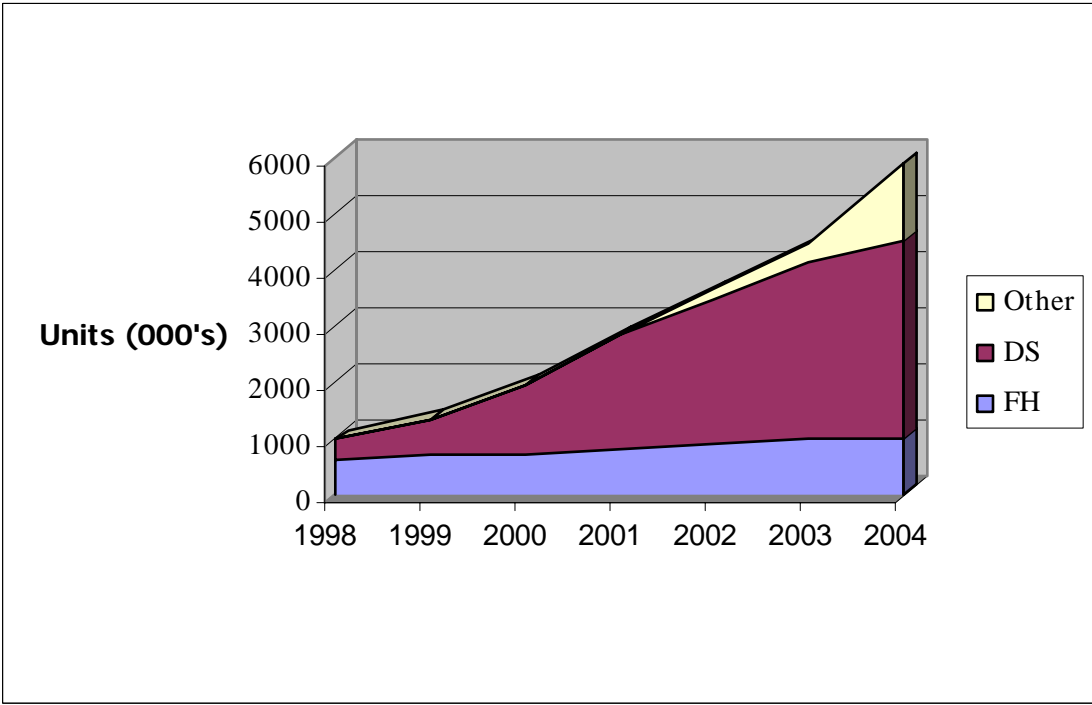
- How will roaming work?
  - Short Term
    - Similar to dial-up model used today
    - Login with '@realm' username construct
    - Bilateral agreements between Hot Spot providers
    - Multilateral agreements via clearinghouse operators
  - Long Term
    - Seamless handoffs will require network upgrades
    - 3G operators can use indoor infrastructure to extend outdoor coverage areas
    - Multi-mode wireless cards will handle both Wi-Fi & 3G

# Hot Spot Roaming (cont'd)

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- What is the user experience?
  - Short Term
    - Browser-based authentication
  - Long Term
    - Client-based authentication (802.1x)

# Statistics - WLAN NIC Growth

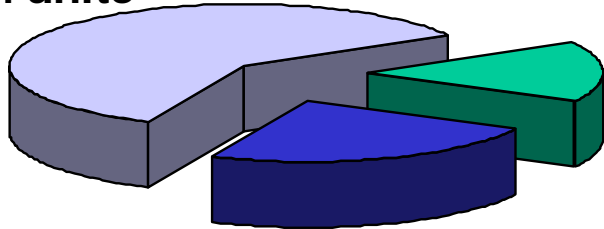


	1998	1999	2000	2001	2002	2003	2004
FH	609	692	701	814	904	988	1011
DS	361	642	1254	2019	2579	3137	3522
Other					165	328	1382

Source: Cahners In-Stat Group, January, 2000

# Statistics - Laptop Use

Sales  
15 M units

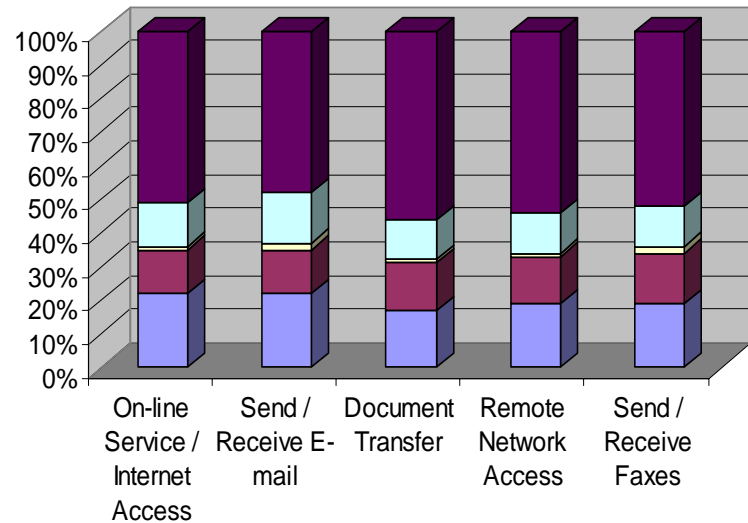


Field Support  
4 M units

Executives  
6 M units

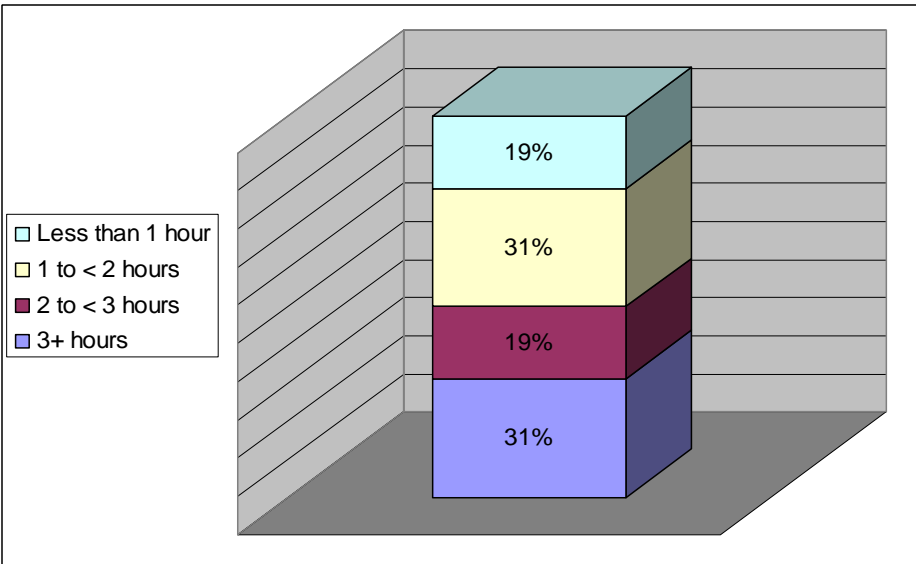
*25 Million laptops in use today by travelers; 36 Million laptops in use by 2002*

*Laptop dominates in all top on-line applications*



■ Wireless Phone 
 ■ DK/NA 
 ■ Pager 
 ■ Handheld Computer 
 ■ Portable Computer

# Statistics - Business Traveler Internet Access Profile



Hours of Use While Traveling

## Applications Used While Traveling

