Realizing the Potential of Mobile and Wireless Solutions

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HP Americas

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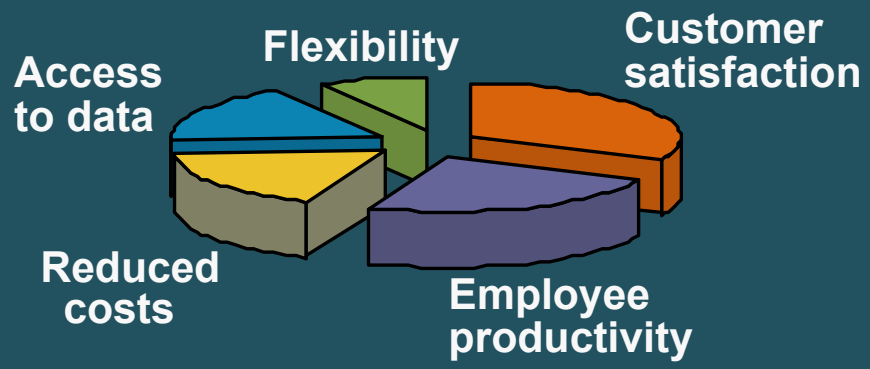
Market outlook

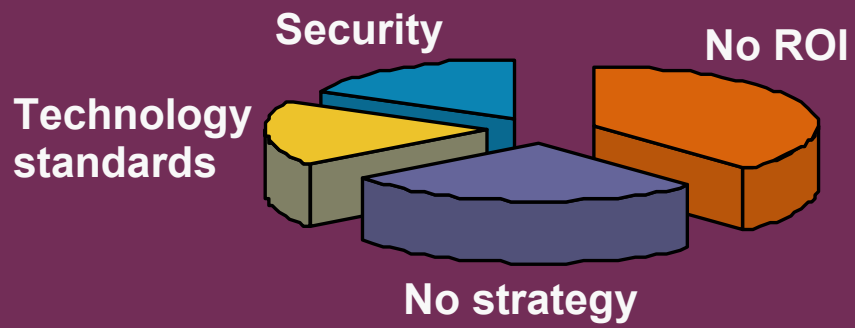
*Key **drivers***

- Improved customer sat
- Employee productivity
- Reduced costs
- Rapid access to data



*Key **inhibitors***

- Cannot calculate ROI
- No company strategy
- No industry standards
- Concerns about security



Source: IDC, November 2002

Market outlook

"Why not just wait for someone else to figure out ROI, technology, and security? What have we got to lose??"

"... wireless is not ready for prime time yet, so we've decided to do nothing ..."

Doing nothing is no longer an option

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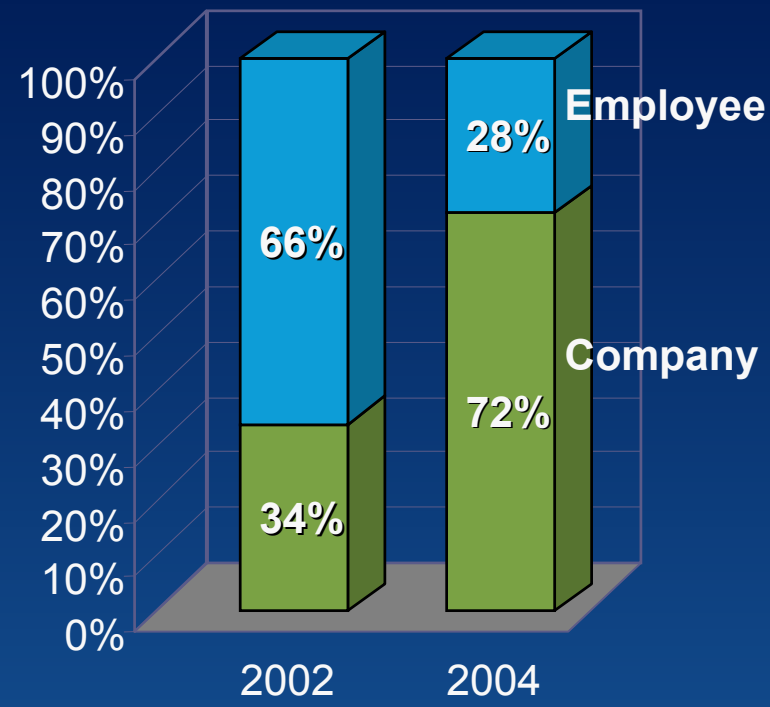
"My company isn't going wireless"

- Today, the majority of handheld devices are chosen by employees
  - Not necessarily paid for by the employee
  - Within the next 2 years, most companies expect to be selecting devices for employees
- Net result is that there is an uncontrolled adoption of devices inside many companies which either
  - Must be supported
  - Must be replaced
- For HP, this means that "enterprise" devices must be available through "consumer" channels
  - Circuit City, Best Buy, eBay!!



"Who chooses your handhelds today (including airtime), and how do you see this changing in the next two years?"

Doing nothing is no longer an option

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"My company isn't adopting wLANs"

The #1 security threat in wireless LANs today is…

eWEEK

Home > eWEEK Labs > Tech Analysis > Sniffing Out Rogue Wireless Lans

May 6, 2002

Sniffing Out Rogue Wireless Lans

By Anne Chen

With the price of 802.11b wireless access points dropping fast, it's not surprising that unsanctioned WLAN connections are popping up like weeds on corporate networks.

That's a problem for network managers because most wireless LANs that are based on the 802.11x standard lack built-in security, leaving corporate networks open to potential

The emerging end-user paradigm

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Mobile, connected, always in-touch

Hot Spots
- 802.11 public LAN

Office
- LAN – Wired and wireless, private and public

Home
- Broadband
- Home network
- Dedicated devices

Smooth and seamless transitions

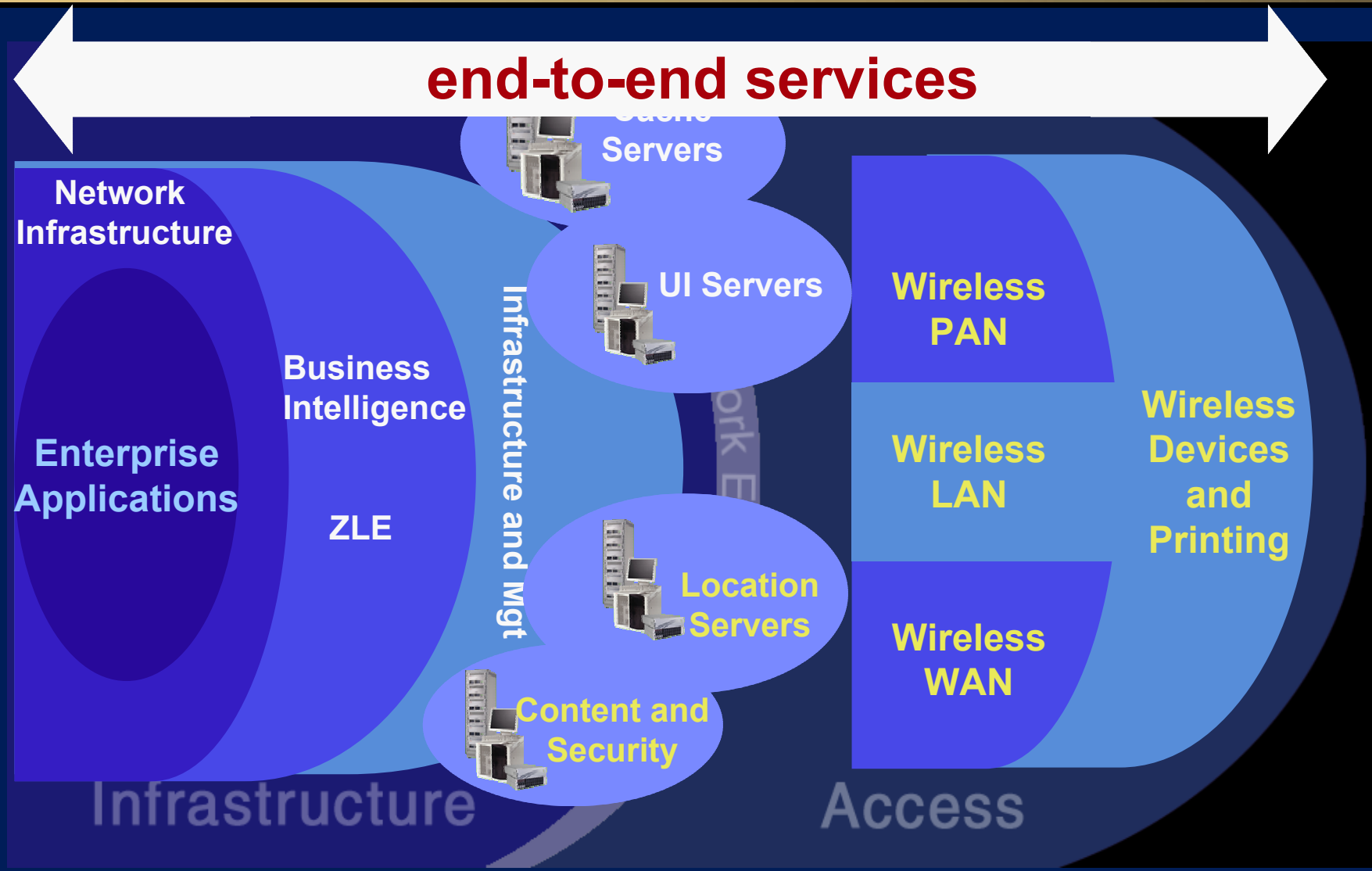
Airports
- Air connection
- Offline use

Hotel
- Broadband

Healthcare
- Offline use

Retail
- Point-of-Decision
- Access to in-store systems

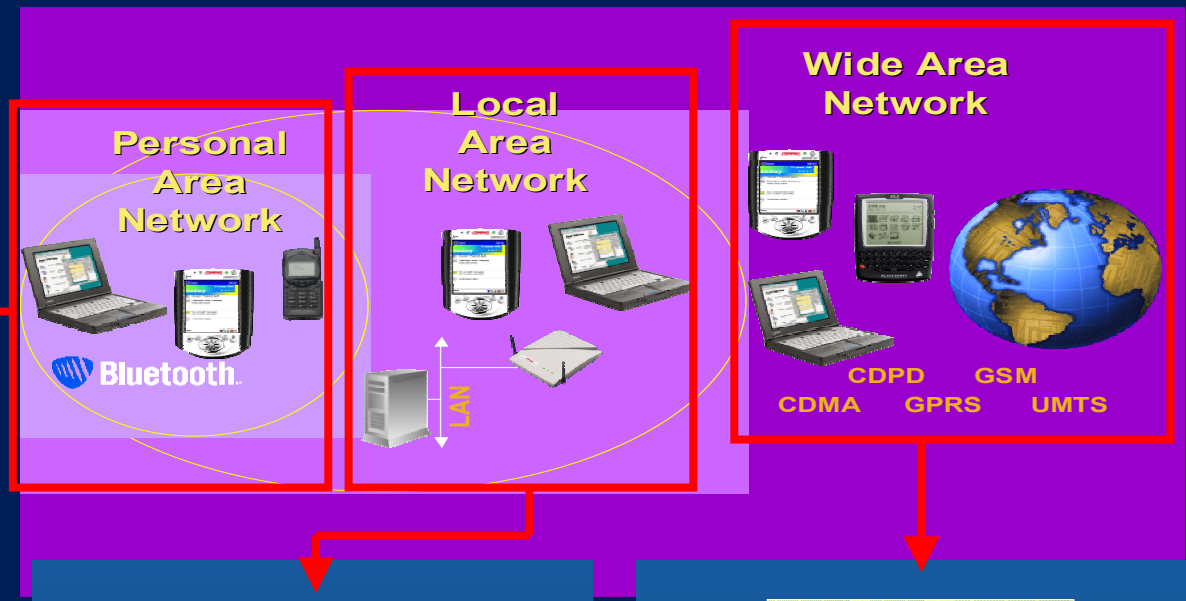
HP wireless and mobility solutions vision



HP wireless and mobility solutions vision

HP technology directions

Overview of 3 major wireless standards



Bluetooth

- Cable-replacement technology
- Allows local (3m) access to devices to share capabilities

IEEE 802.11

Wi Fi The Standard for Wireless Fidelity.

- Private or public access to intranet or internet
- Range of speeds specified within 802.11 standard

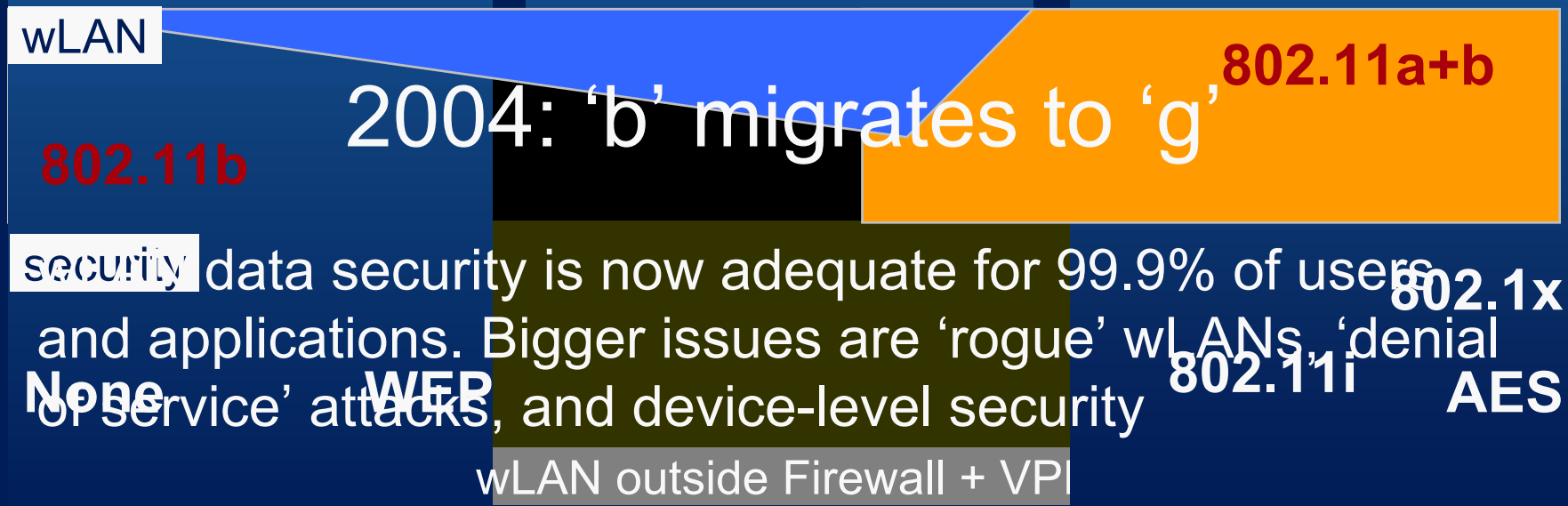
PDC cdmaO EDGE
TDM (IS-13 1xRTT WCDMA
cdma2000 MC
GSM GPRS

- 'Anywhere, Anytime' access to information
- Requires a Wireless Service Provider. Airtime contract,

HP technology directions

Wireless LAN and security standards

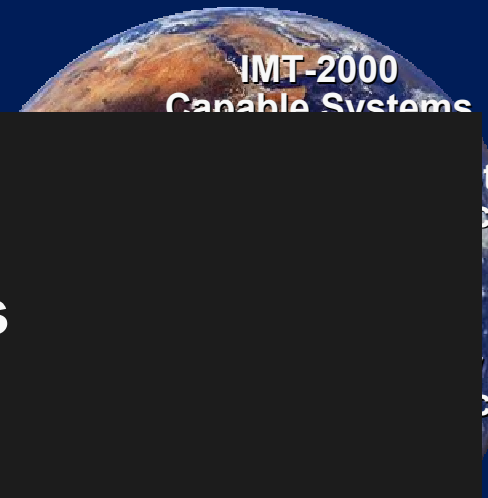
Consumer	SMB	Enterprise
Highly cost sensitive	Some cost sensitivity	Least cost sensitive
OK performance	Good performance	Best performance
802.11b compatible	802.11b compatible	802.11b compatible
No security concerns	Some security concerns	High security concerns



Wireless data security is now adequate for 99.9% of users and applications. Bigger issues are ‘rogue’ wLANs, ‘denial of service’ attacks, and device-level security

HP technology directions

Wireless WAN standards



- Very wide coverage areas
- Freely available devices
- wWANs not considered as “secure”
- Possible for applications to provide end-to-end security (VPN, etc)

TACS

AMPS

ting
trum

trum

ting
trum

1980s

1G

9.6 Kbi

- Voice

- SMS
- Text e-mail

- SMS
- e-Mail
- Web browsing (infancy)
- mCommerce

- SMS
- e-Mail
- Web browsing

- Internet access
- Document transfer
- high quality video

The emerging end-user paradigm

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Will the real 3G please stand up!

Office
- LAN – Wired and wireless

"3G" is unlikely to be a single wireless technology. It will be a hybrid, complementary model which leverages the strengths of:

– **wLAN (802.11a/b/g): high bandwidth, low cost,** limited coverage

– **wWAN (GPRS/1xRTT):** lower bandwidth, higher cost, **good coverage**

This will have a very significant effect on access devices. They will need to offer the ability to support both technologies, and to switch seamlessly between the two without user intervention

- Offline use

Hotel
- Broadband

Healthcare
- Offline use

HP wireless and mobility solutions vision

Wireless Devices and Printing

HP access devices

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N1000c
All-in-one

N800c/w
Mobile desktop

N610c
Profes...

N1...

...desktop

See the latest devices at the PSG booth

Compaq Tablet PC TC 1000

One device...

...multiple uses

h1900

h2210

h5400

h5550

HP wireless access device direction

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Integrated Bluetooth, wLAN ... plug-in wWAN

Tablet PC

Notebook

iPAQ PPC handheld

	Integrated		Add-ins	Bundle (all models)
	Bluetooth	IEEE 802.11	GPRS 1xRTT	
Tablet PC	Q3 '03			all Q2
Notebook	Now	802.11b: now 802.11a: q3 '03	GPRS: now 1xRTT: q3 '03	GPRS/BT phone 1xRTT/BT phone 802.11a/b AP/cards (g: tbd)
iPAQ PPC handheld	Now		(GPRS = sleeve)	

Converged or dual-body?

wLAN

wWAN

20%

converged

80%

'dual-body'

Current HPL research areas sensor technology integration

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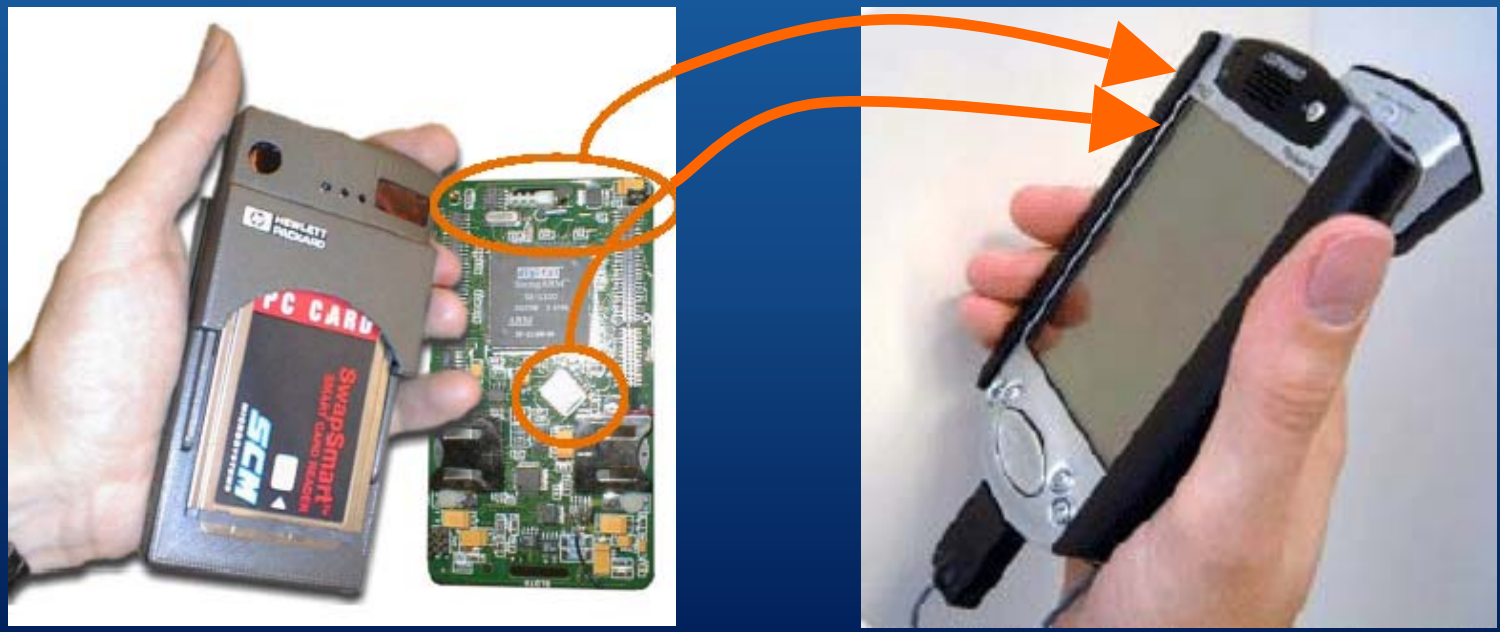
"Who, what, where"



Biometrics
Inertial
Light

Audio
Temperature
GPS

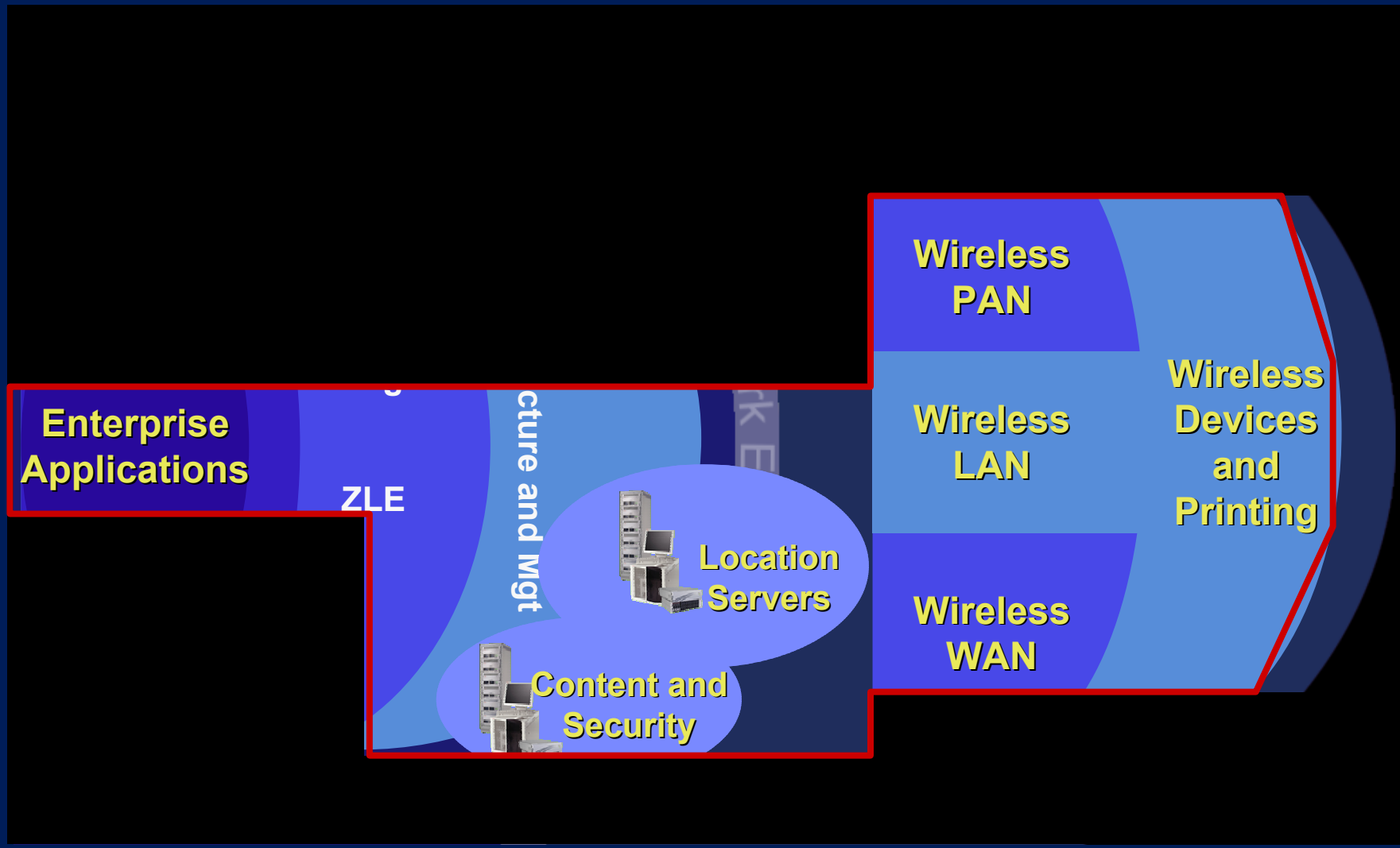
Video
Humidity
Image

Current HPL research areas

WebSign — sensors enabling services for PDAs

- iPAQ with integrated wireless and sensors
- Technology and algorithms
  - Location (GPS)
  - Orientation (accelerometers)
  - Wireless (wLAN)
- Automatically, PDA acquires services using “virtual beacons” relative to the user’s position
  - Web-based location information
  - Adjusts for user’s preferences

HP mobility solutions vision



HP mobility solutions strategy

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Our vision…

Wireless and mobility solutions offer the **compelling prospect** of providing suppliers, employees, and customers with **access** to enterprise **data wherever and whenever** it is needed

Our strategy…

To provide solutions that enable customers to achieve that HP will provide **end-to-end, scalable, secure wireless solutions** which offer our customers

Low Risk

Complete 'managed services' and 'life-cycle management' capabilities

Proven Performance

Solutions can be configured and tested in Solution Centers

Compatibility

With existing and emerging industry standards

- Drive the creation of new wireless standards
- Protect customers' investments and provide continuing ROI

Migration and Integration

Into new information architectures

- the Zero Latency Enterprise (ZLE)

HP mobility solutions

Providing end-to-end mobility solutions

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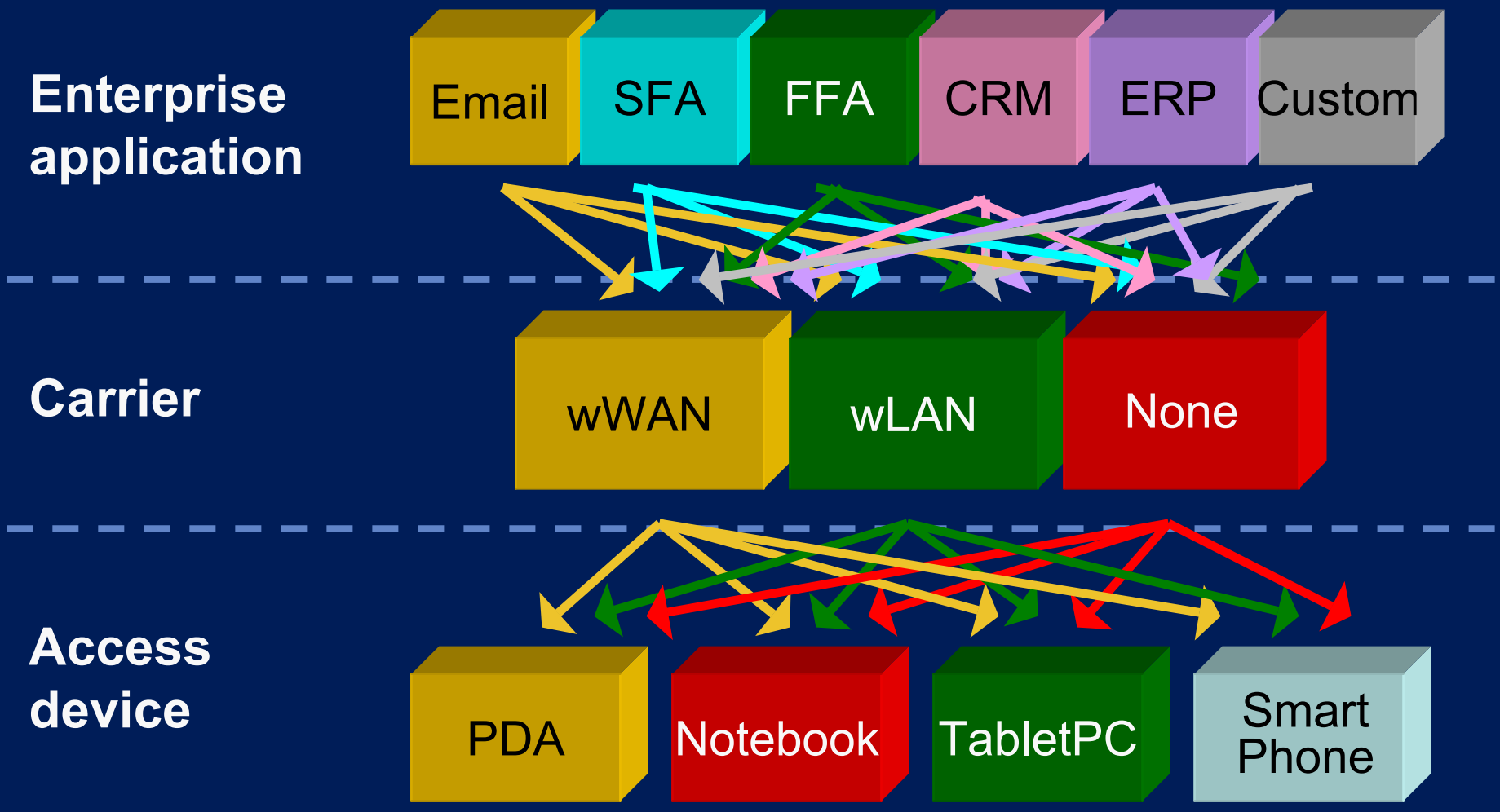
"... All I want to do is get email when I'm traveling ..."



Providing end-to-end mobility solutions

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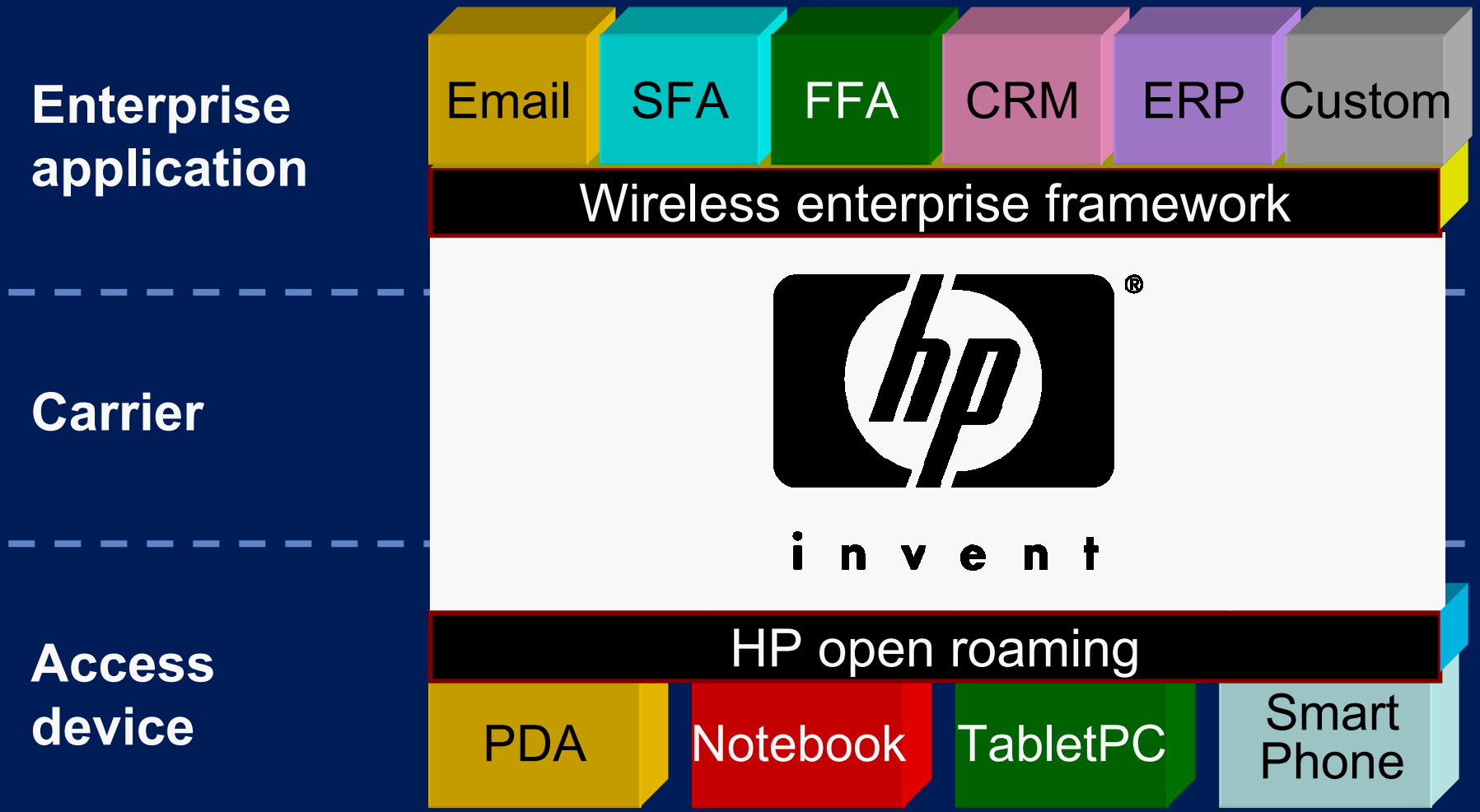
HP strategy



HP 'wireless enterprise framework'

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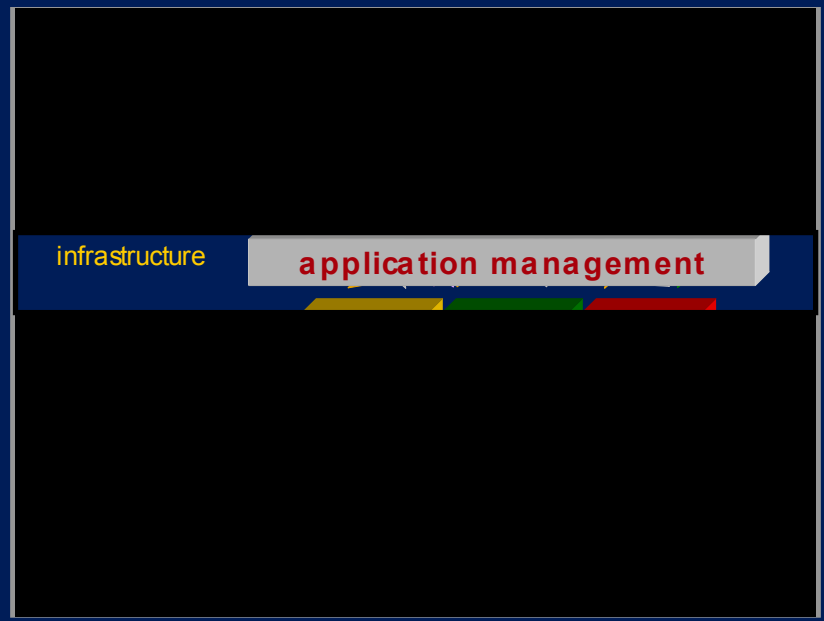
Managing enterprise applications and access

- An end-to-end wireless integration platform that enables a company's mobile workforce to interact with multiple existing enterprise application data anytime, anywhere
  - Built in security: authentication and encryption
  - Single user login to multiple applications
  - GUI-based transaction development with device and application simulators
  - Supports multiple enterprise applications: SAP, Siebel, Oracle, Exchange, Notes, etc.
  - Supports multiple access devices: tablet, notebook, pocketPC, Palm, Blackberry, WAP



Wireless enterprise framework 10-user Pilot System

Included 10 iPAQs, server, software, consultancy, implementation, training, 6 months support

Functions Any combination of data from Oracle, Siebel and SAP apps with rich Mobile Messaging (Exchange or Notes). Includes six end user transactions (2 posting and 4 inquiring)

Time Implementation in 4 weeks or less

HP open roaming

Application

IP

Open roaming
security, mobility, simplicity

Intranet LAN

Wireless LAN

Intranet

IP zone

Dial-up

Mobile Network
GSM-Data
HSCSD
GPRS

Internet Access
ISDN
Modem
ADSL

Implementing a wireless enterprise

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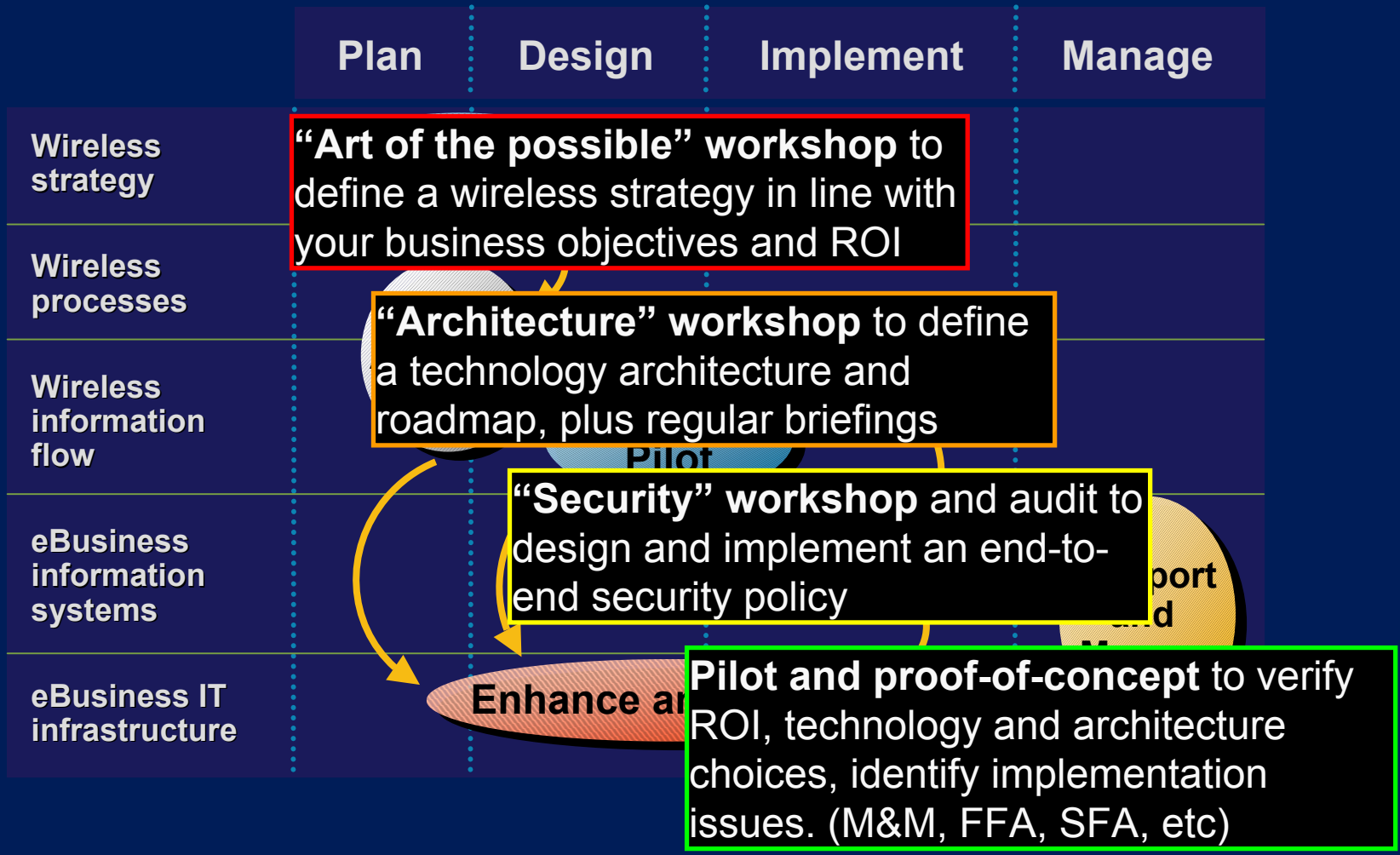
How HP can help



Packaged offering phases

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I. Demo	*II. Proof-of-concept*	*III. Pilot*	*IV. Deployment*
Fast Start	**POC**	**Bundled solution**	**Custom deployment**
PSG-led packaged demo for customers to experience mobility	**Demonstration of ability to access customer data with a mobility solution**	**Packaged service to do a phase I deployment of full mobility solution**	**Custom migration and deployment services**
HW: 1 server, 5 devices	HW: 1 server, 10 devices	HW: 2+ servers, 10+ devices	HW: servers, devices, printers
SW: OS, ISV pre-loaded	SW: OS, ISV pre-loaded	SW: OS, ISV pre-loaded	SW: MSFT, ISVs
Services: none	Services: ISV install/config	Services: install/ config/support	Services: install/ config/support
Price: FREE	Price: ~$5-10k	Price: $30-100k	Price: custom
Scope: just hw/sw demo; no integration with production systems	Scope: demo environment with limited live data functionality; no external access (security)	Scope: deployment of limited users, live data, full access with security	Scope: custom
Demo data /demo screens	Production data/ demo screens	Production data/ production screens	Production data/ production screens
wLAN and wWAN access	wLAN and wWAN access		

Customer examples

'Wireless City' – Bellevue, Washington

Challenge

- Improve service delivery to citizens, exchange information with staff, maintain communication in emergency situation, with limited funding

Solution

- iPAQ pocket PC, Infowave, Sierra Wireless, AT&T Wireless for inspection services
- Solutions rolled out for messaging, city inspectors, parks, emergency services

Impact

- Improved level of service
- Same day issue of permits
- Real time access and updates to critical city data
- Improved communications

Customer examples

New York State Office of Mental Health

Challenge

- Provide current clinical information for mental health field workers

Solution

- Equip field clinicians with iPAQ pocket PCs accessing mental health records, medical reference data, mapping directions and office applications, including voice recording

Impact

- Better medical decisions, especially for intensive workers, with private, confidential access to patient histories and reference data
- First production-ready example of wireless technology for behavioral mental health

Customer examples

Starbucks

Challenge

- Enhance the in-store experience with wireless for world's leading specialty coffee retailer and roaster

Solution

- HP, T-Mobile and Starbucks creating wireless hotspot and personalized content for iPAQ and other devices
- HP Services implementing wireless local-area networks in dozens of Starbucks locations

Impact

- 2500 Starbucks locations in the US will be equipped for wireless internet access by end of 2002

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