



IBM Pervasive Computing

# WebSphere Everyplace Overview

**Session  
B5**

Making a Quantum Leap in On Demand Mobile Computing



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# Agenda

- **Business Environment**
- WebSphere Everyplace Access Overview
  - Benefits
  - Modules
  - Supported Devices
- Summary
- Q&A

# What Does Pervasive Computing Bring to the Marketplace?

*Pervasive Computing allows business processes to be actionable by remote users and devices . . .*

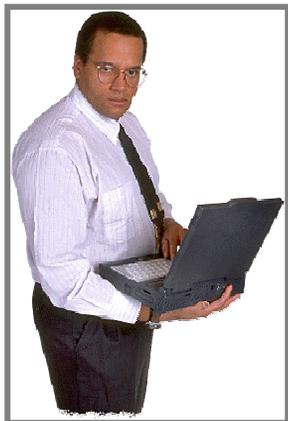
- Securely extending the business integration equation
  - ▶ Beyond traditional office environments
  - ▶ Beyond traditional interaction modalities
- Optimizing business processes at the edge of the network



Business to Employee - Workforce Mobility

Business to Consumer - Browser and Conversational Access

Business to Machine - Sensor and Actuator Solutions



# What Problem are we solving?

Increase information velocity (one second versus one hour)

- **Expediting** information from where it is created...
- To **where it is needed**...
- While maintaining...
- Data/speech/ transaction/device **Integrity and Security**



## Costs / Benefits:

- Cost to Implement vs.
  - ✓ Increased revenue
  - ✓ Reduction in cost
  - ✓ Reduced time to service
  - ✓ Enhanced mission accomplishment



vs.



# Wireless Roaming Is Here Today !

- In 2004 -
  - 625M WW Cell phone shipments
  - 11.7M PDAs were sold
  - 30M total hotspot users
  - 50% of business laptops had WiFi, LAN's, WLAN's, WMAN's, WIMAX's

## Some important points:

- Explosion of network and device presents opportunities and dilemmas
- Public Wireless LANs becoming a commodity, with all-you-can-eat for ~\$10 / day
- WiFi chipset suppliers are aggressively competing, with prices falling
- So opportunity exists because:

- ▲ • WiFi chipset shipments and pricing
- ▲ • Public Wireless LAN access points
- ▲ • 2.5-3G build outs and pricing
- ▲ • high-end device capabilities and pricing
- ▼ • IT spending



# Why companies are using wireless.

- ✓ **Increase Productivity**

**Maximize** the utilization of their mobile resources - Same personnel

- ✓ **Gain Customer Loyalty & Retention**

**Increase** the speed of responsiveness to customer issues or to sales situations

- ✓ **Generate Additional Revenue**

**Maximize** the customer-facing time of their mobile workforce

- ✓ **Increase Profitability**

**Minimize** the cost of providing field service to their customers

# When companies see ROI in wireless?

- The mobile workforce currently performs tasks that require one of the following:
  - **Access to data and information** (for example: schedules, timetables, manuals, price lists, product catalogues, customer accounts, maps)
  - **Documentation and data capture** (for example: forms completion, reporting, order entry, information gathering, surveys, inventory status capture)
  - **Collection and analysis of information** (for example credit history verification, quote generation or settlement of complaints, invoicing etc.)
  - **The company faces strong competitive market pressures**

# Typical DAY IN THE LIFE MOBILE WORKFORCE Scenario

1. Log onto device and GPRS network
2. Review schedule for the day
3. Review customer deliveries and ensure goods are in the vehicle, logging presence via bar code
4. Dock device in the console in the vehicle, seamlessly transfer to bluetooth network-in-vehicle (or on the train) and complete updates to device as you travel to 1<sup>st</sup> customer location.
5. Files updated include
  - ✓ Customer history and order status
  - ✓ Product information updates
  - ✓ Any urgent business process alerts or notifications

6. Travel designated route, visit customers (deliver requested goods, samples, brochures)
8. At customer location, consult with customer, discuss new products, offerings, run projections based on requirements, produce quotes, close deals, capture signature
7. Update work CRM files, order status, record time spent, goods/samples delivered (updating truck inventory)
9. Respond to alerts and modify route as needed

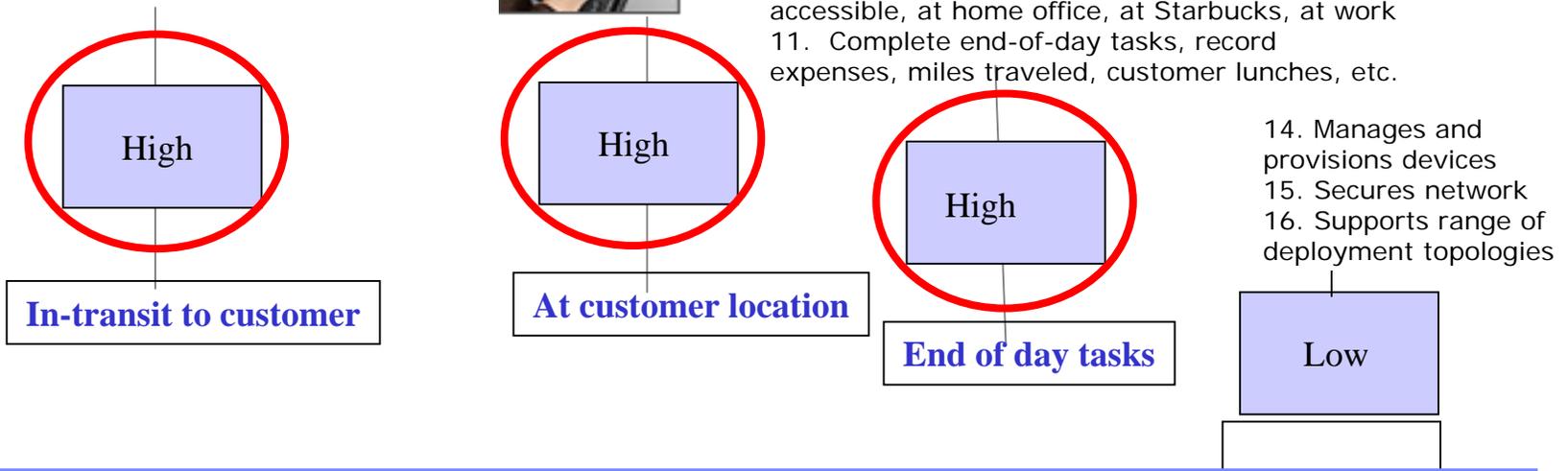


10a. While in transit, connectivity acquired allows real-time, bi-directional update to corporate systems and to user's device.

or

10b. Synchronize files when broadband is accessible, at home office, at Starbucks, at work

11. Complete end-of-day tasks, record expenses, miles traveled, customer lunches, etc.



14. Manages and provisions devices
15. Secures network
16. Supports range of deployment topologies

Improve CRM, responsiveness, accuracy, eliminate duplication

# For Mobility, the key issue is Productivity

**Improve employee productivity**

Secure access to business applications for mobile employees



“**Field service organizations** that have provided mobilized technology to field personnel for at least two years outperform those that have not by a margin of two to one.”

**Mobile technology** holds – and in many cases has delivered on – the promise of seamless and zero-latency connectivity between the field and the back office.”

Aberdeen Group - Analyst Mark Vigoroso

Source: MobilePipeline, 10/6/04

# Mobilizing your Business Process

**Mobilization projects today span both extensions to existing backend applications and creation of new Wireless applications**

• Nearly 28% of developers once again choose the Java (J2ME) platform as their initial choice for targeting their wireless applications. (Wireless Development Survey 2005, 2005 Evans Data Corp)

• When asked if they tend to extend pre-existing apps or write new ones, wireless developers surprisingly answer in favor of the latter: 78% of respondent's apps are brand new, compared to 58% which are extended. (Wireless Development Survey 2005, 2005 Evans Data Corp)

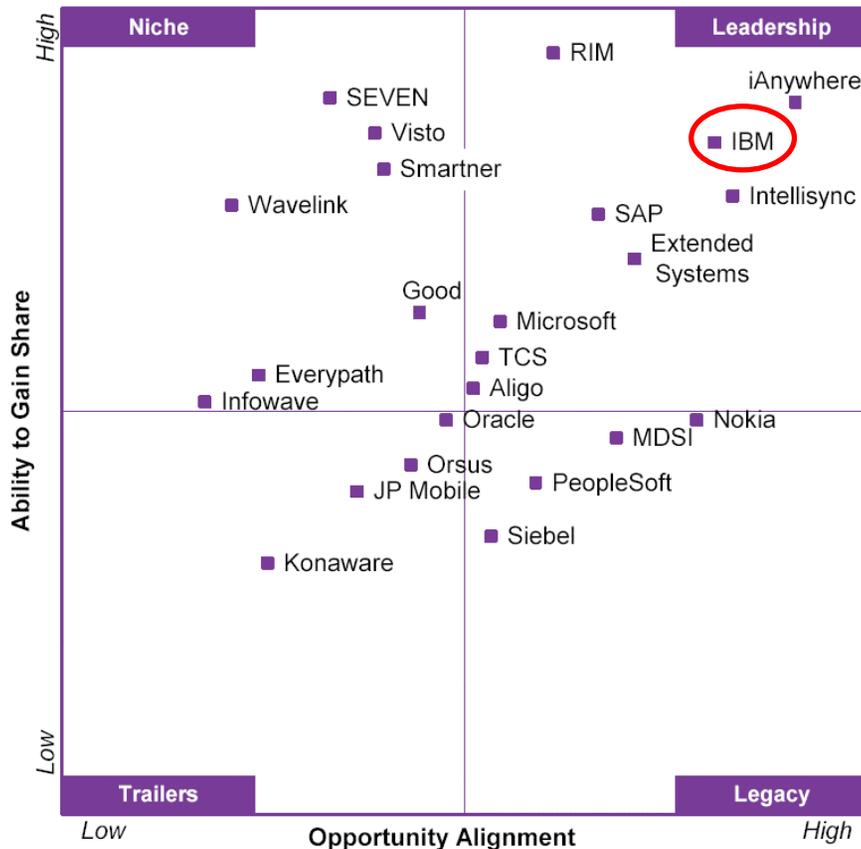
What percent of your wireless applications are:	Extensions of applications already written for NON-wireless applications	Extensions of applications already written for wireless applications	Brand new applications written specifically for wireless applications
0%	29.8	42.3	21.7
1-25%	17.8	28.5	25.5
25-50%	21.7	21.1	23.3
51-75%	10.3	4.2	7.9
76-99%	9.3	2.4	5.7
100%	11.1	1.6	15.8

*Wireless Development Survey 2005: Spring, © 2005 Evans Data Corp*

# What are Analysts saying about IBM "wireless" / "mobile"?



IDC Leadership Grid: Worldwide Mobile Middleware Market



*“...the #4 position in revenue on the strength of its WebSphere Everyplace Access product. IBM had the largest growth among all vendors within the mobile middleware market more than doubling its revenue. IBM’s growth is an example of the growth IDC expected within this market from some of the largest vendors.”* IDC Report on Mobile Middleware Market, Nov 2004



**“With its latest version, IBM WebSphere Everyplace Access software now *supports more handheld operating systems than any other vendor* - Palm OS, Linux, Symbian, RIM and Microsoft Windows CE. Together, these handheld operating systems account for over 90% of the worldwide PDA and smartphone markets.”** by Todd Kort, Gartner, July 2004

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# Pervasive Challenges

## Mobility Challenges

- ✓ Connectivity / Disconnectivity
- ✓ Authentication and authorization
- ✓ Security
- ✓ Voice/Data Access
- ✓ Device management
- ✓ Scalability
- ✓ Services
  - ▶ Messaging services
  - ▶ Location Awareness
  - ▶ Intelligent Notification
  - ▶ Context Awareness



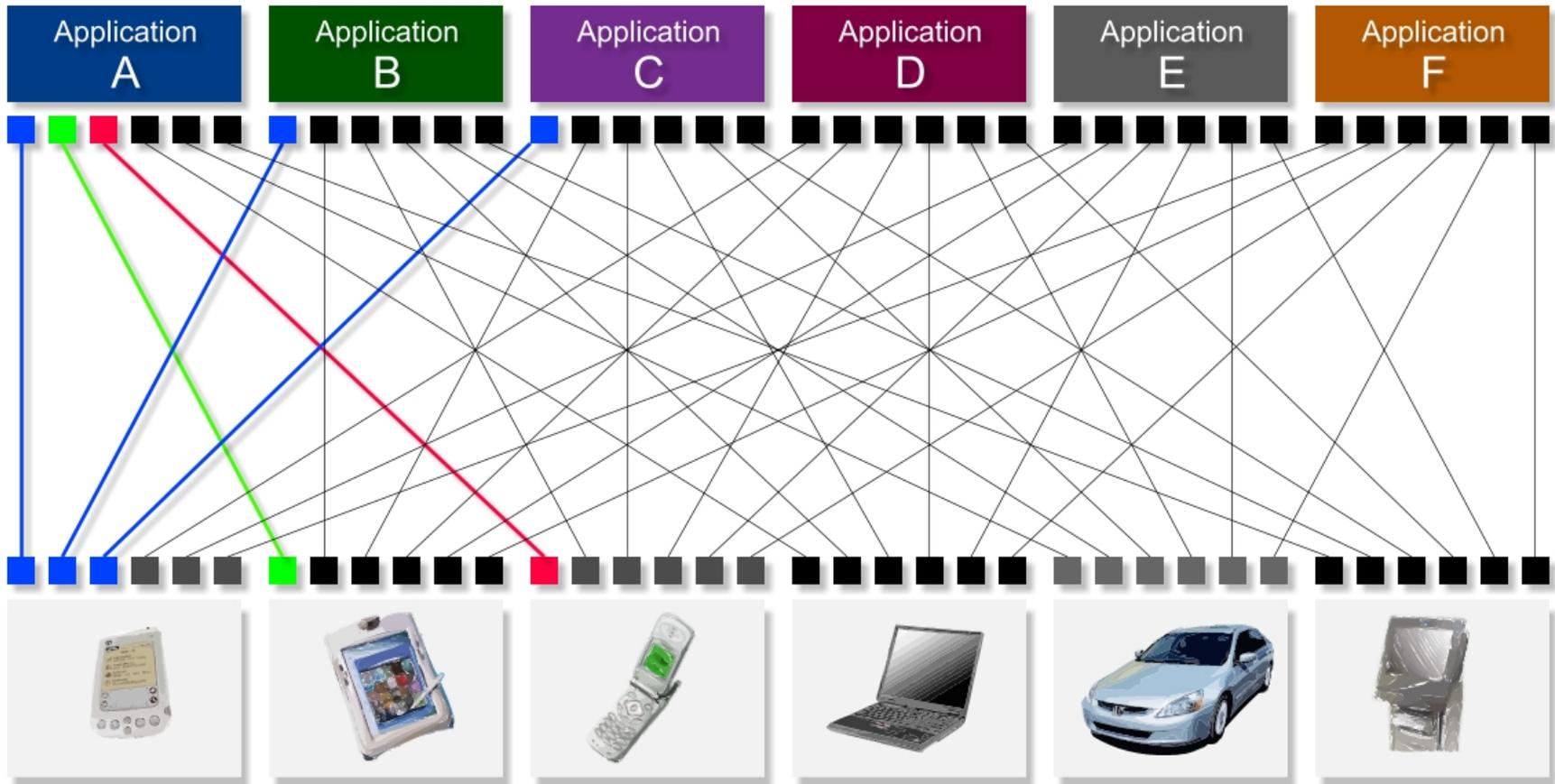
## Application Challenges

- ✓ Content aggregation
- ✓ Customization and personalization
- ✓ Application reuse
- ✓ Multi-device capability



# The Infrastructure Challenge

**M applications...**

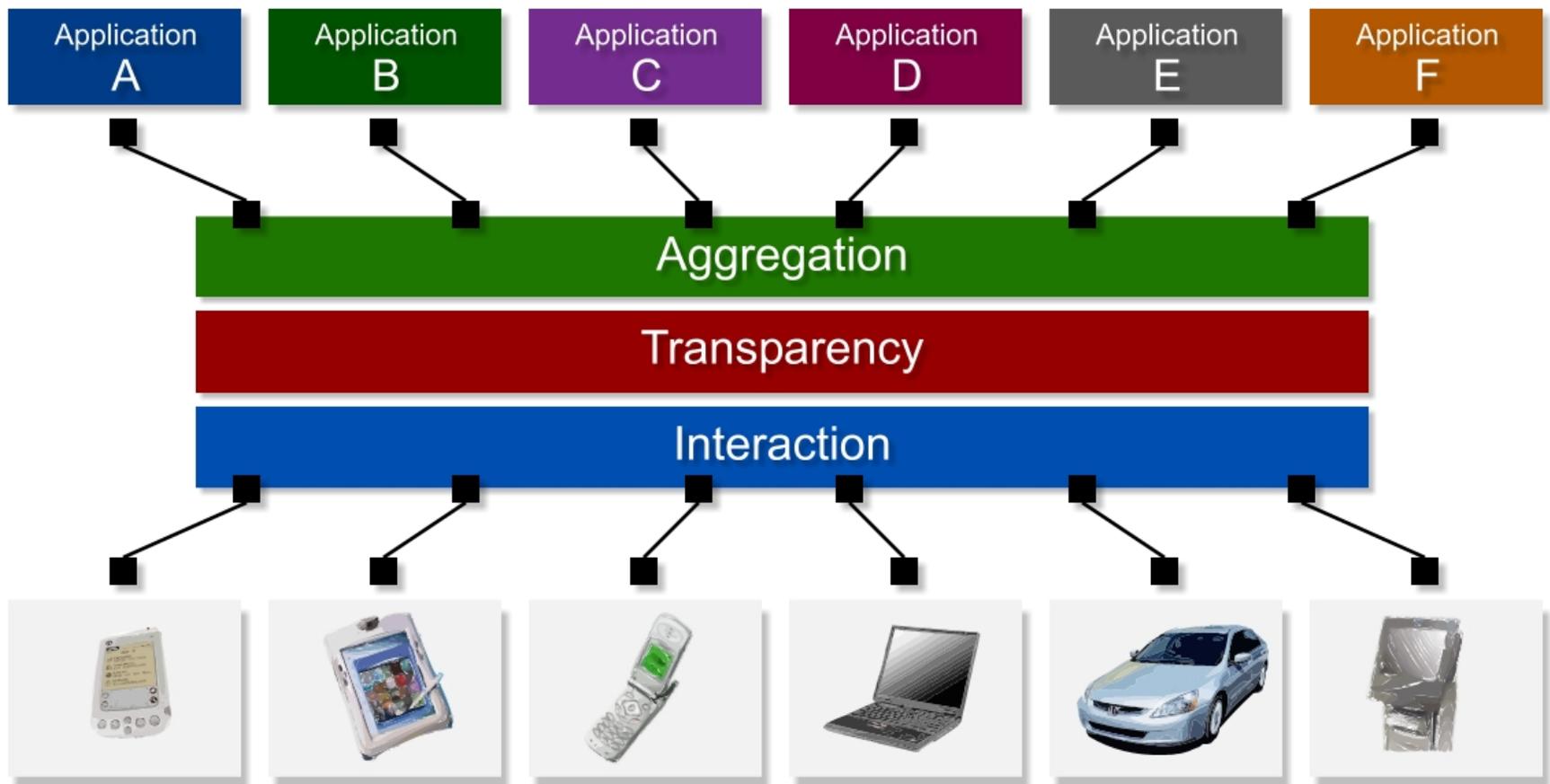


**N devices**

*How do you solve an expanding "M x N" matrix?*

# IBM's Mobile Application Platform

*A comprehensive integrated mobile enterprise delivery environment*



# Extending WebSphere Access and Interaction

Skills and infrastructure re-use across modalities, connections and devices

## Voice Access

- Natural language understanding
- Next generation media servers
- Multiple speech engine support

## Device Support

- Device management
- Datastore
- Secure messaging
- Secure VPN
- Instant messaging
- PIM/e-mail



## Mobile Access

- Connected, disconnected, intermittent
- Edgelets and disconnected portlets for distributed applications

## Multimodal Interaction

- xHTML + VoiceXML (X+V)
- Eclipse
- X+V tools
- X+V extensions to WEA

# WebSphere Everyplace Access

**Extend the reach of business applications to pervasive devices**

## Business Value

Connect multiple applications to multiple devices

**Support for any connectivity option**

- connected
- intermittent
- disconnected

Leverages portal framework

Extends On Demand business value proposition

WebSphere  
Everyplace  
Access

## Capabilities

- J2EE Applications
- Data Sync (DB2e)
- Off-line web content
- Adapt web/portal content
- Intelligent off-line forms
- Instant Messaging**
- Intelligent Notification Services**
- Server Initiated Actions
- Multimodal
- Mail & PIM (syncML)**
- Device Services
- Plus, Tools & Toolkits

PocketPC



PalmOS



Symbian



Tablet PC

# WEA Supported Devices

## Palm OS

- Tungsten C, Tungsten W, Treo 600,
- (Treo 300, Kyocera 7135 – limited support)

## Symbian OS

- Sony Ericsson P900
- Nokia 9500 Communicator (interim release is planned)

## Pocket PC 2002, and Windows Mobile 2003

- Hitachi G1000
- HP iPaq 3760, 1935, 4150, 5550
- Symbol MC9000, MC8800
- MM02 XDA II
- Toshiba e405
- Dell Axim X3
- Siemens LOOX 610



## WEA Resource Checker:

Additional Pocket PC 2002, Pocket PC 2002 Phone Edition, Windows Mobile 2003 and Windows Mobile 2003 Phone Edition devices may also be used with WEA. The use of a software tool, WEA Resource Checker, is required to determine whether the device, its OS and planned usage of WEA is compatible.

# Mobility and Session Persistence

# Cross Network Roaming Is Key

- WiFi is becoming a ubiquitous technology
- GPRS - GSM - 1XRTT - CDMA - WiFi handoffs are a critical link and must incorporate a **seamless handoff**
- Concerns about **data integrity, encryption and session interruption** are barriers
- Users must be able to **switch network connections** to optimize throughput and access fees
- Corporate customers have been unimpressed with GPRS throughput

# WebSphere Everyplace Connection Manager (WECCM)

## Business Value

**Cost-effectively and securely extend business applications to mobile employees**

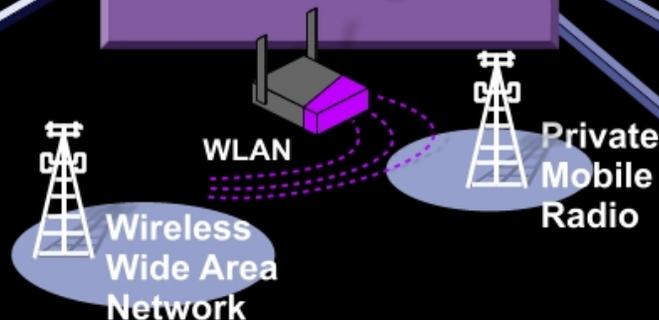
Highly scalable

**Integrates with existing authentication infrastructure**

**Potential to significantly improve employee productivity**

**Enables Connectivity and security across a broad array of both Public and Private networks**

**WebSphere  
Everyplace  
Connection  
Manager**



## Capability

**Secure seamless roaming among a wide variety of wired & wireless networks**

Government-grade authentication and encryption FIPS 140-2

**Intelligent network optimization and utilization**

**Preserves user sessions across network transitions**

# Mobile Environment Architecture

## Everyplace Client



## WECM Mobility Client

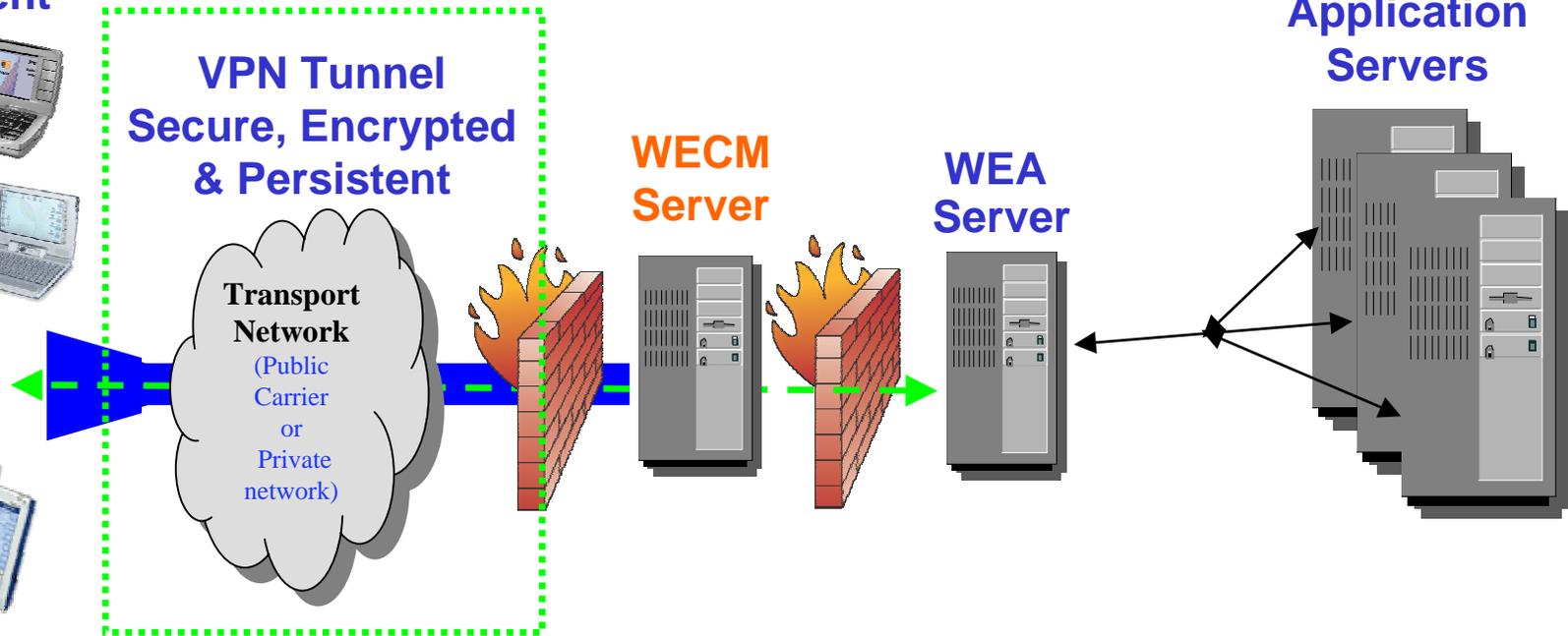
**VPN Tunnel  
Secure, Encrypted  
& Persistent**

**Transport  
Network**  
(Public  
Carrier  
or  
Private  
network)

**WECM  
Server**

**WEA  
Server**

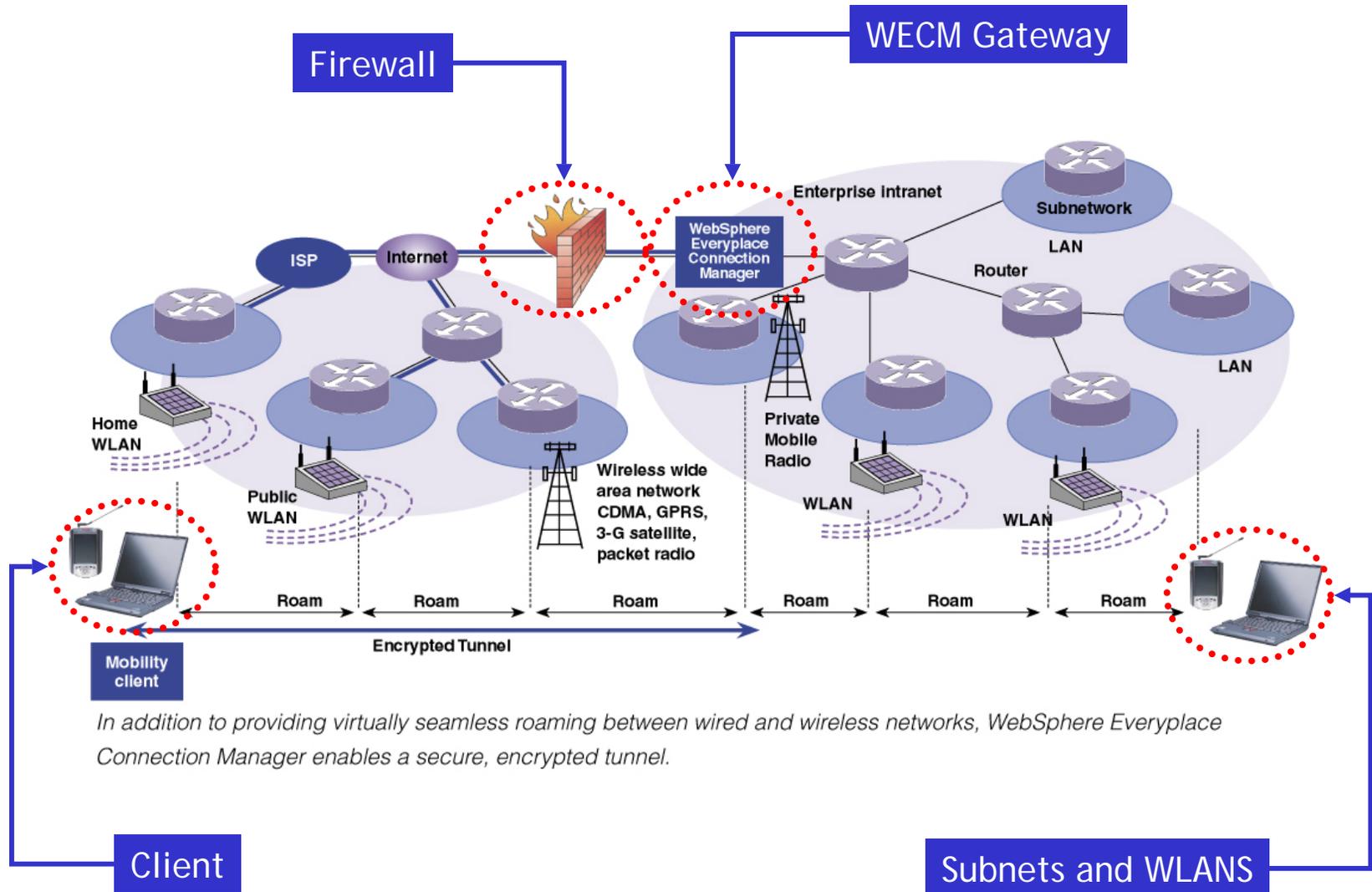
**Application  
Servers**



## Benefits:

- Flexibility across 35 different types of networks
- Improved connectivity, at higher security levels
- Increased productivity with seamless persistence

# WECM Roaming Network Perspective



*In addition to providing virtually seamless roaming between wired and wireless networks, WebSphere Everyplace Connection Manager enables a secure, encrypted tunnel.*

# Supported Networks

## Cellular Networks:

CDMA

TDMA

GSM CSD, SMS

PCS 1900

PDC (Japan)

PHS (Japan)

CDMA2000, 1XRTT, eVDO

GPRS (GSM)

PDC-P (Japan)

iDEN

CDPD and CS-CDPD

AMPS & N-AMPS

## SMS-C Connections:

SMPP

SMTP

SNPP

UCP

WCTP

## W-LAN, W-PAN

802.11x

Bluetooth

## LAN Connections:

Ethernet

Token Ring

## Internet Connections:

Cable Modem

ADSL/DSL

ISDN

ISP

## Dial Connections:

DIAL/TCP

ISDN

PPP

PSTN (POTS)

## Public Non-IP Radio Networks:

DataTAC 4000 (US)

DataTAC/IP

DataTAC 5000 (Europe)

Modacom (Germany)

DataTAC 6000 (Asia)

DataTAC/IP

Mobitex (Worldwide)

Mobitex/IP (US)

## Private Packet-Radio Networks:

Dataradio

Motorola Private Radio  
(DataTAC)

## Satellite Network:

Norcom

Wireless Matrix

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# Industry Solutions



## Mobile Office

- Increases employee productivity by wirelessly accessing their Notes e-mail, calendars and directories remotely



## Field Force Automation for Electronics Industry

- Extends work management system to its mobile field service workers and automates monitoring of remote sensors



## Field Force Automation for Utilities

- Enables intelligent dispatch & scheduling, and remote ordering of equipment & parts



## Sales Force Automation

- Provides field based sales force access to back end information on customer needs and wants with an intelligent alert profile

# Delivering Real Customer Value

## *Real-time Access ...*

**“We are reducing expenses by having the field forces use wireless PDA devices to connect (via WECM) to their backend systems to enable more effective operations and management.”**

Development Manager, Danish State Railways



## *Intelligent Notification ...*

**“We reduced delays in parts turnaround by one day...to potentially save \$15M..by deploying a WebSphere Everyplace solution.”**

Information Technology and Systems Division Chief, Hill Air Force Base



## *Operational Efficiency ...*

**“The IBM wireless solution redefined our process for claims handling in the field so it is streamlined and takes costs out of our business..”**

Information Technology Manager, Progressive Insurance

**PROGRESSIVE**

## *Secure ...*

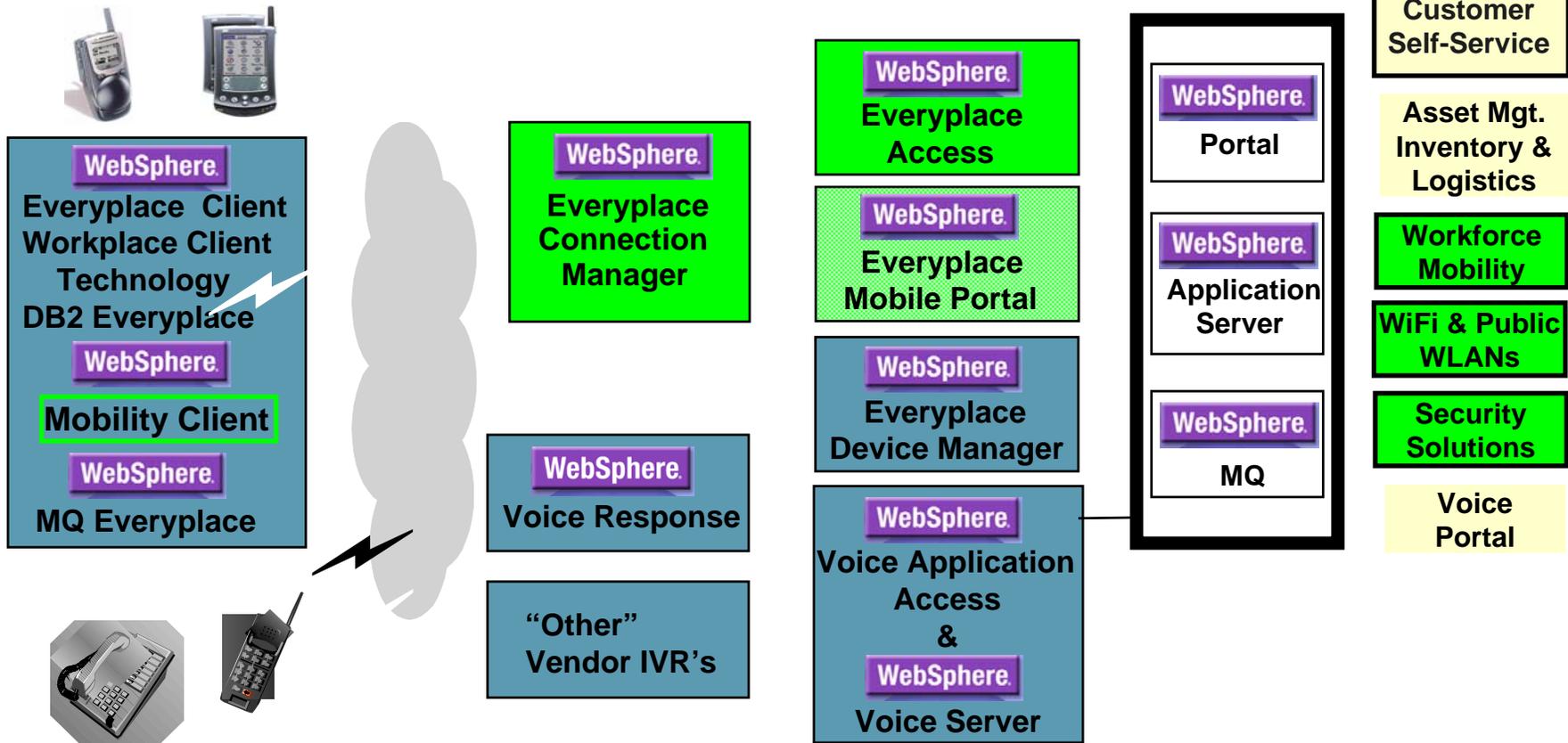
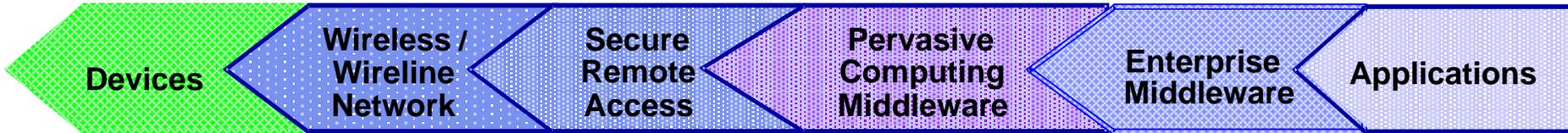
**“WebSphere Everyplace Connection Manager provides seamless roaming and anyplace, anytime access to information our officers depend on...”**

Business Lead for the eCOPS Project, Toronto Police Service



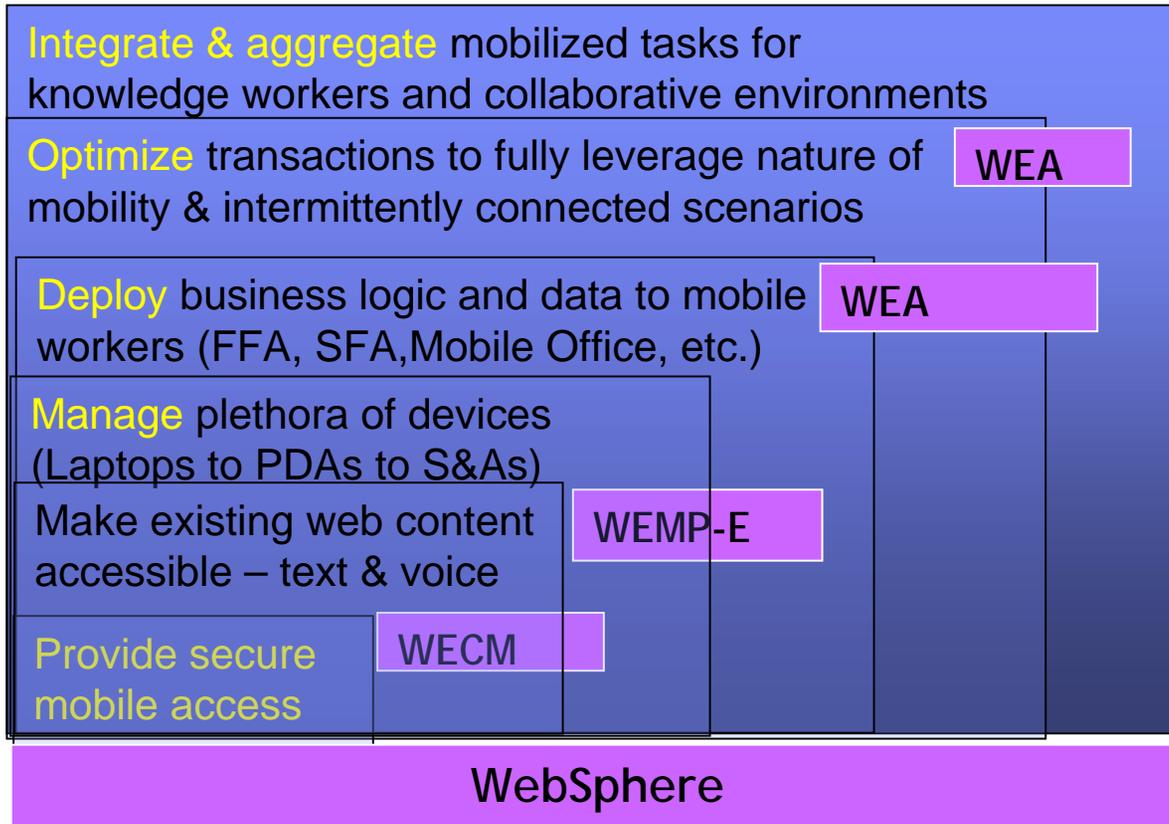
# Tying it all Together

IBM provides a comprehensive, integrated platform for mobile and conversational access



# ...With the right Infrastructure.

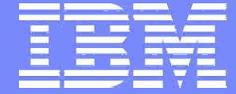
Thin to Rich.... Connected to Intermittently Connected  
 Deliver the right "fit for purpose" capability



# Additional Information

## **WebSphere Mobility, Speech and RFID Information Page**

<http://www-306.ibm.com/software/info1/websphere/index.jsp?tab=products/mobilespeech>



IBM Pervasive Computing

Questions?

