Modern Mobility

MUSE 2009
Vancouver, BC

Introductions

Speaker Info:

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Senior Vice President
Application Software Division

Modern Mobility

Objectives

- Understand today's mobile computing technology
- Understand the potential future for mHealth
- Equip yourself to make wise, well-informed decisions

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Defining mHealth

- Medical and public health practice via mobile devices
- Devices include: mobile phones, PDAs, monitors, etc.
- Data transmission across wireless networks

Example mHealth Use Cases

- Collecting healthcare information from patients
- Delivering healthcare information to providers
- Real-time monitoring of patient condition (e.g. VS)
- Direct provision of care (mobile telemedicine)
- Mobile e-Prescribing

A Physician Might …

- Access Electronic Health Records (EHR)
- Review lab results
- Order diagnostic tests
- Write electronic prescriptions
- Access medical reference data (e.g. ePocrates)

An RN Might …

- Positively ID a patient via barcoding
- Document interventions
- Document the administration of medications
- Capture patient specific charges
- Document the collection of lab specimens

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Topics

- **Wireless Networking**
- **Mobile Devices**
- **Data Security**
- **Emerging Technologies**
- **Emerging Applications**

Practical PDAs: Handhelds for the Real-World

Presented by:
William Lawson, CTO of MercuryMD
Frank Fortner, Sr. Vice President of Iatric Systems

Iatric Systems
Innovative Healthcare Solutions

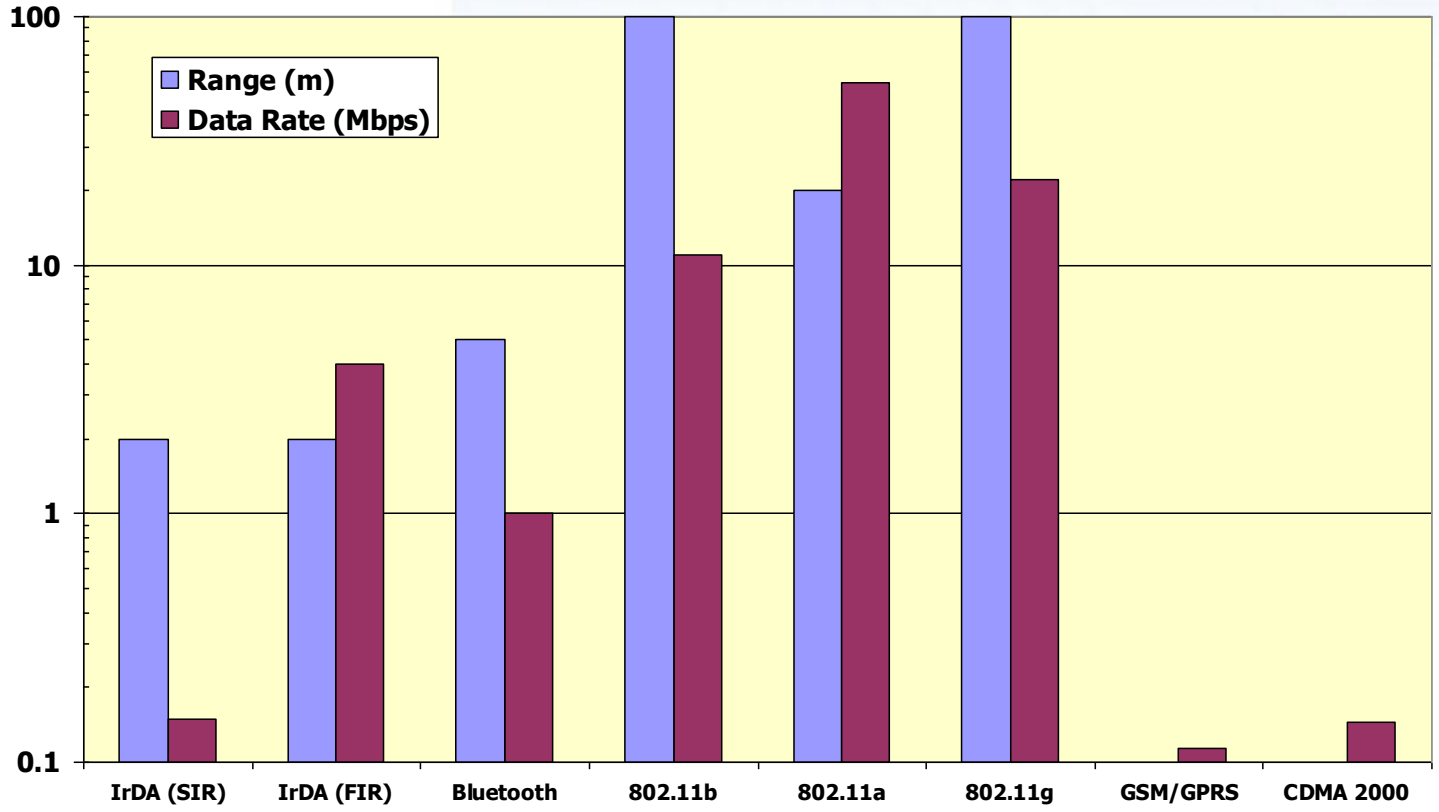
MERCURYMD

MUSE Flashback to 2003!

Wireless Networking

Back in 2003 …

- **802.11b** drove most wireless LANs at 11Mb/sec
- **802.11g** was only weeks away from ratification
- Bluetooth was early in terms of industry adoption
- Cellular WAN technology was 2G (60-70kbps)
- Google and Apple were forming world takeover plans



Wireless Networking Standards back in 2003

Today…

- **802.11g** dominates the scene at 54Mb/sec
- **802.11n** is selling in a non-ratified form
- Bluetooth has people talking to themselves in airports
- Available cellular WAN technology is 3.5G **
- Even faster technology is on the horizon

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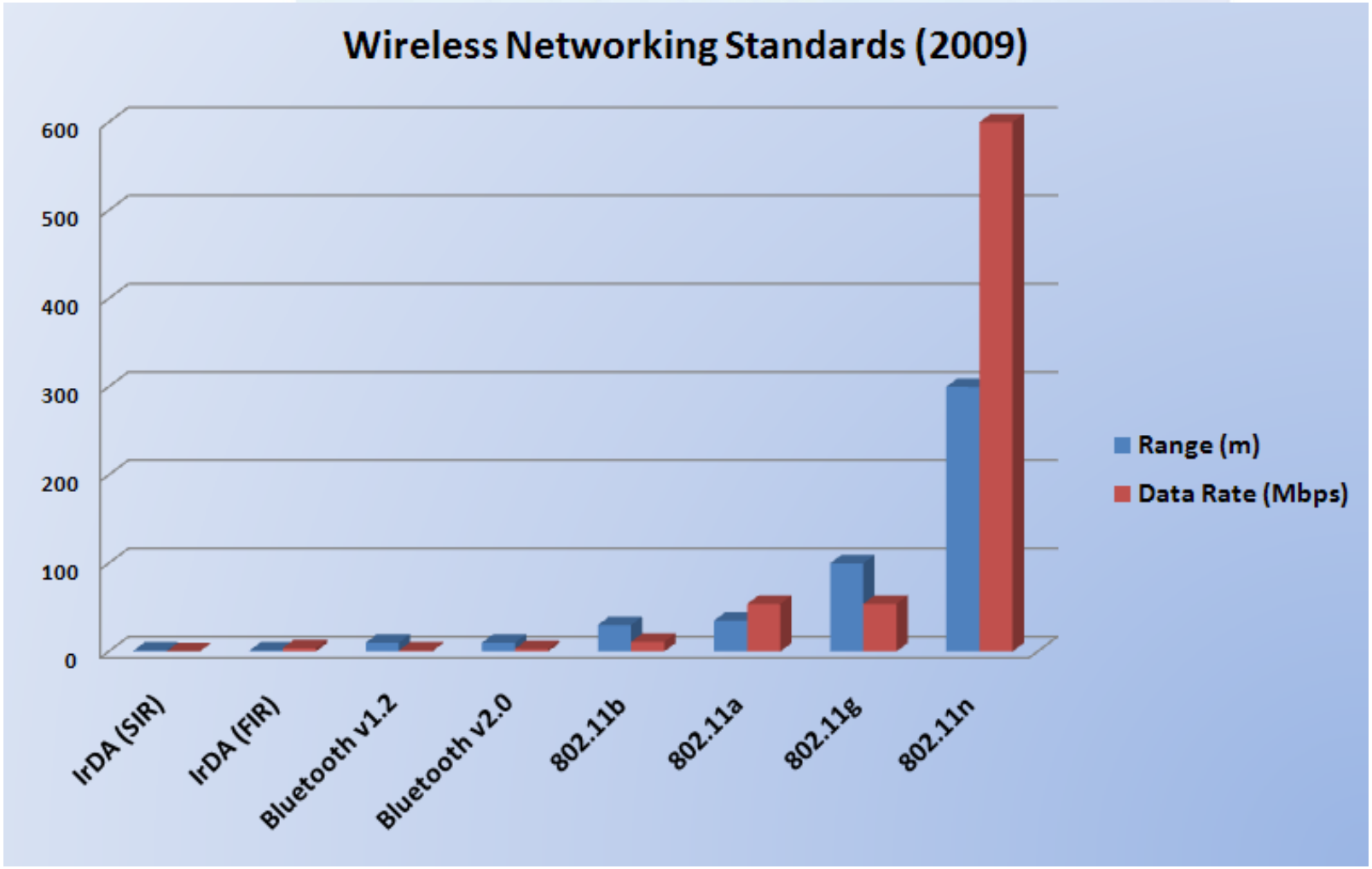
Wireless Networking



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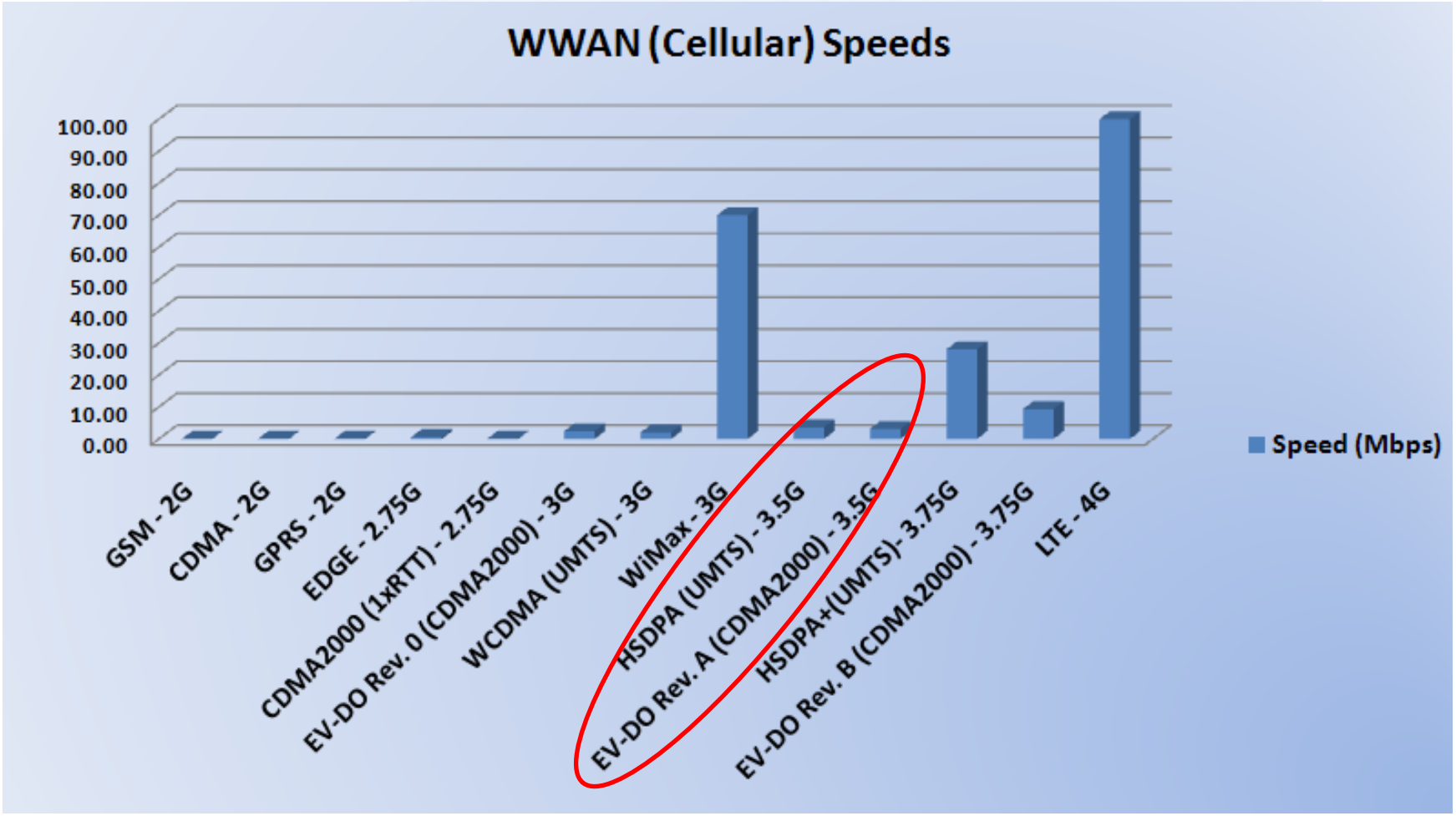
Wireless Networking



Mobile Devices

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Mobile Devices

MY, MY, how the time has flown!!

First sold in 1998

Street Price = $400!

16 MHz CPU

2 MB of RAM

From the Palm III…

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Mobile Devices

To the current ‘King of the Hill’

Mobile Device Considerations

- Memory
- Processing
- Battery Life
- Mobile OS
- Browser

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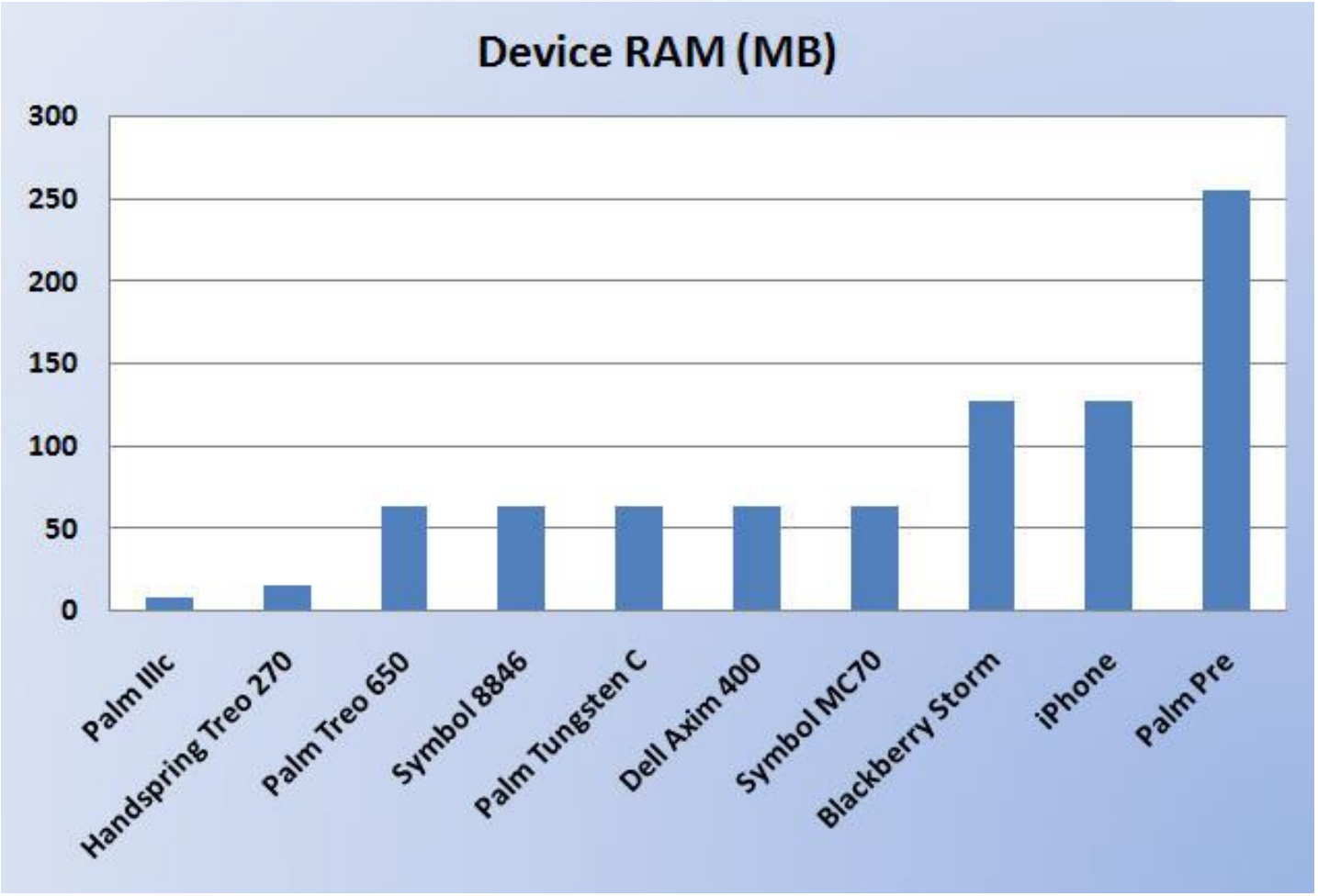
Mobile Devices

- **Memory**
- Processing
- Battery Life
- Mobile OS
- Browser



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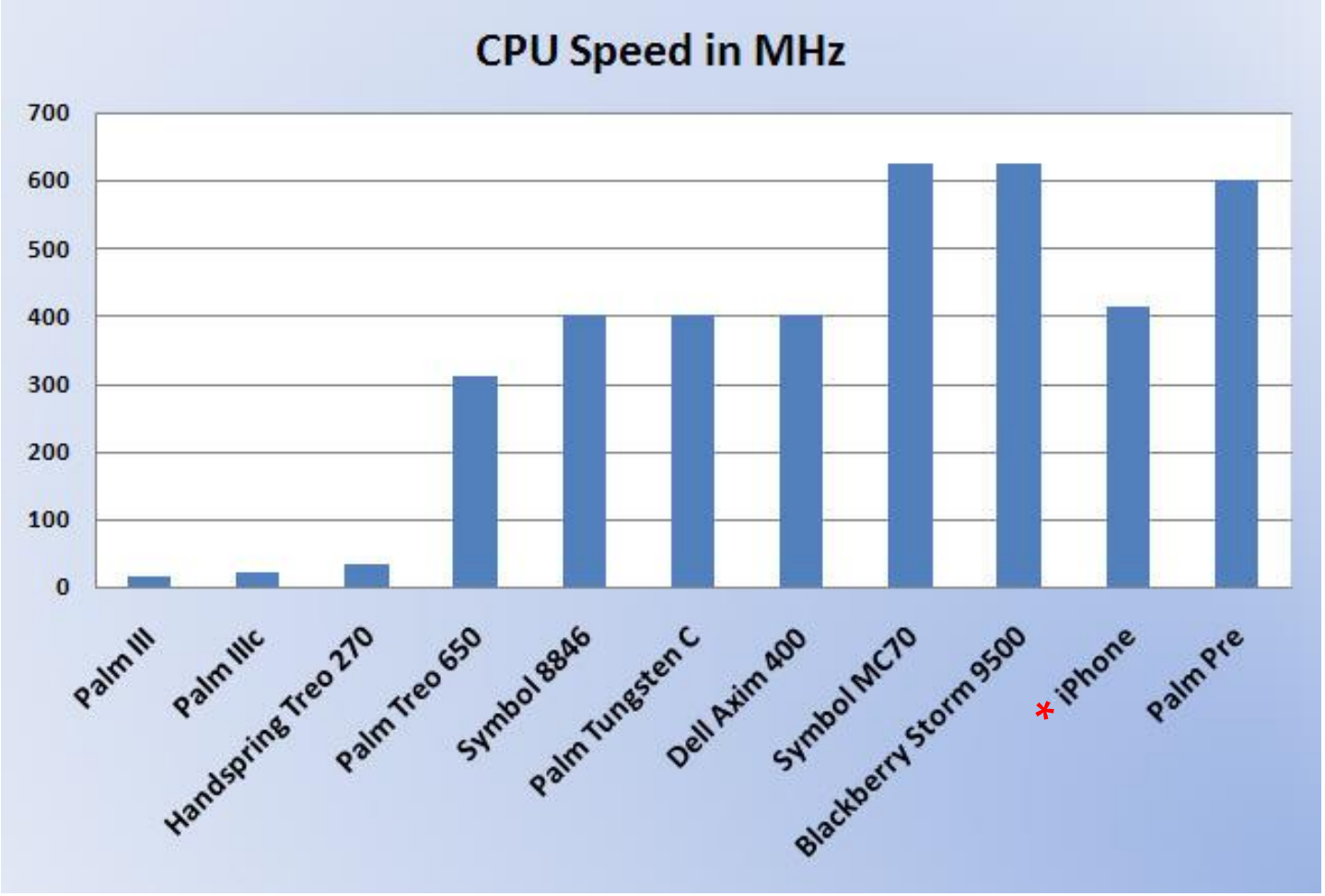
Mobile Devices

- Memory
- **Processing**
- Battery Life
- Mobile OS
- Browser



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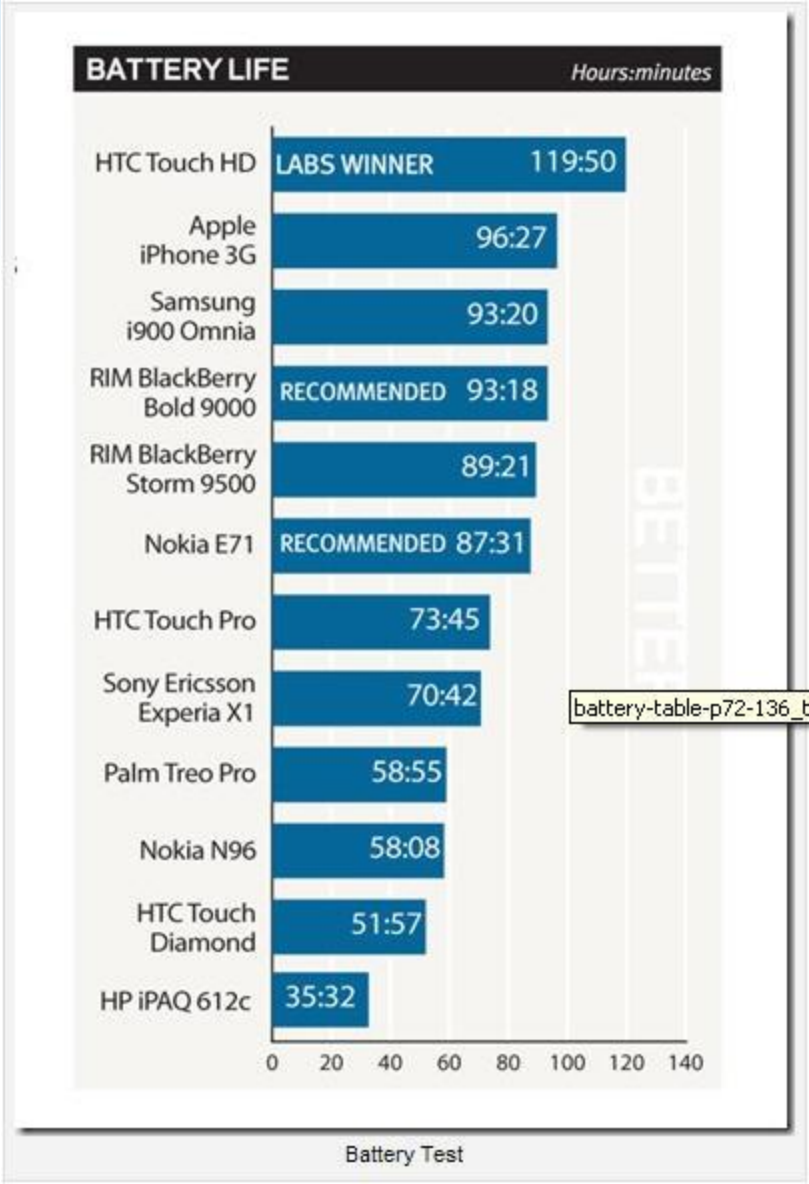
Mobile Devices

- Memory
- Processing
- **Battery Life**
- Mobile OS
- Browser

PC.Authority.com.au did extensive battery testing with these devices running them through a series of data and voice intensive operations.

Upshot:
35-120 Minutes under constant usage



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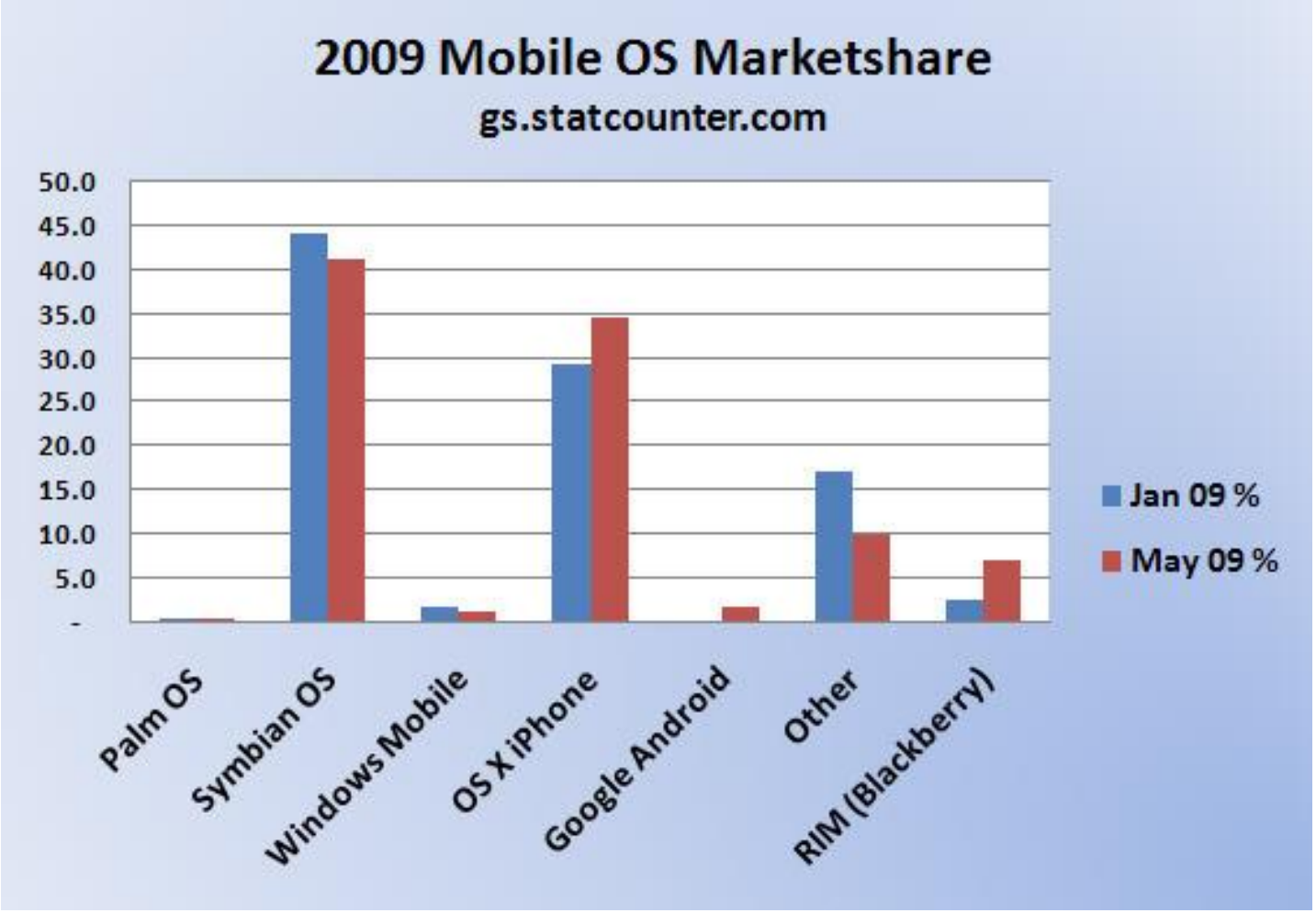
Mobile Devices

- Memory
- Processing
- Battery Life
- **Mobile OS**
- Browser



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Mobile Devices

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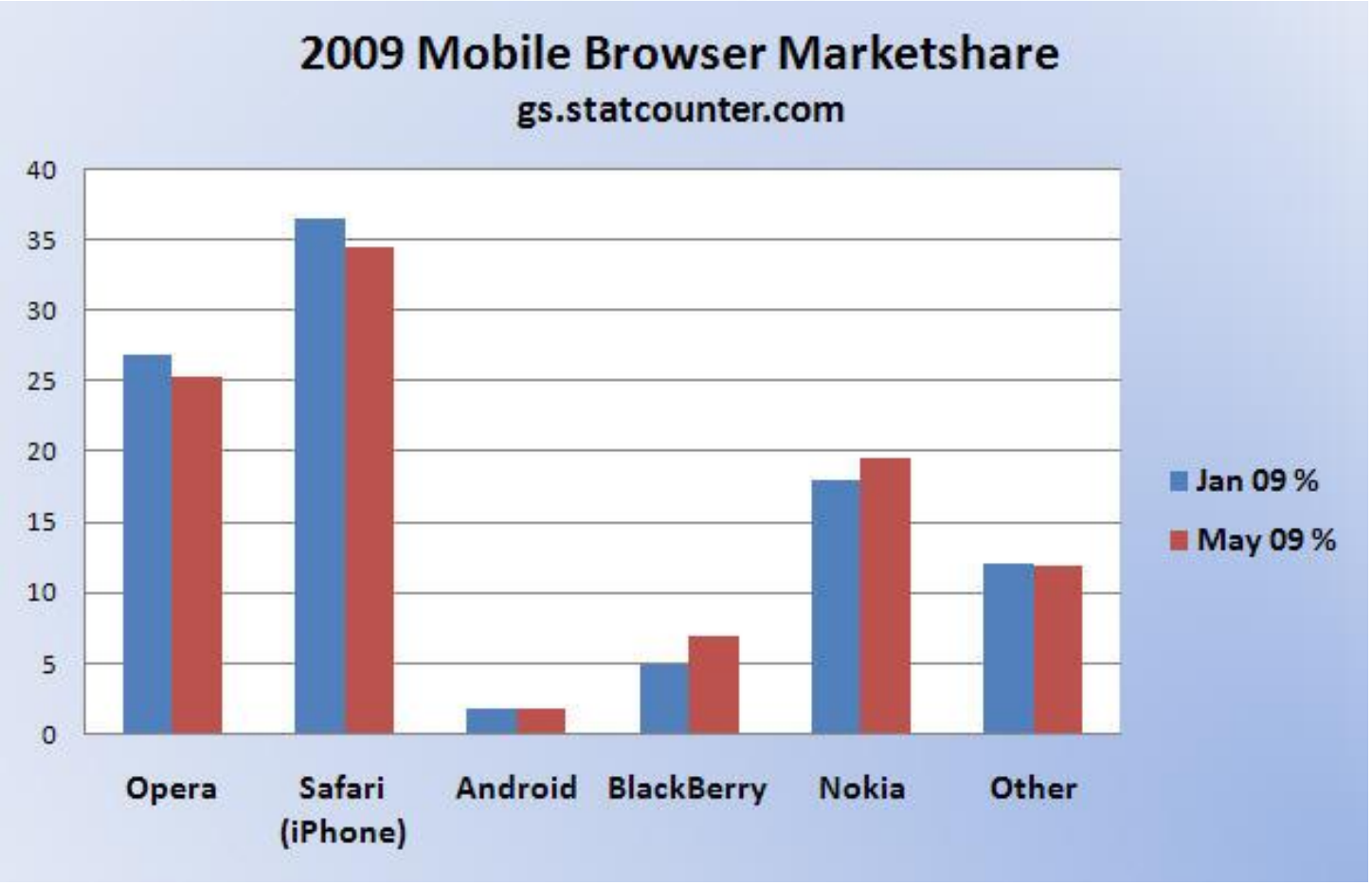
- Mobile OS
- **Browser**



iPhone

(You say you want a revolution?)

Top 5 Reasons for Apple's Success with iPhone

- Revolutionary user interface
- AppStore
- Robust developer tools
- OS X (Apple should have called it the MacPhone)
- Enhanced storage capacity for music, video, apps, etc.

Data Security

Security of Data on the LAN (Problems)

- No barrier to entry / wall jack to find
- Anyone in range with NIC can access network
- Rogue access points hidden under desks

Security of Data on the LAN (Solutions)

- Back in 2003, WEP was leading security solution
- WEP is “better than nothing” but can be hacked
- People tend to print out 26 character hex keys
- MAC filtering was also used; easily “spoofed”

Security of Data on the LAN (Solutions)

- Today, many still use WEP Encryption
- Those seeking tighter security use 802.1x
- With 802.1x, the key changes with every connection
- Popular implementations are PEAP and LEAP

Web Application Security

- Data encryption via SSL or optional client side cert.
- User authentication
- No data storage on mobile device
- No caching of user credentials

Emerging Technologies

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Emerging Technologies

- 4G (LTE)
- Cloud Computing
- High Capacitance Batteries
- Flexible, touchscreen displays

Emerging Applications

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Emerging Applications

- PHRs and Mobile Patient Portals
- Mobile Patient Monitoring (e.g. glucose meter)
- Enhanced MPOE & e-prescribing software
- Mobile Patient Care (telemedicine; video consults)
- Mobile Device Imaging (CT, MRI, X-Ray)

THANK YOU!!

IATRIC systems

Thank you for attending!