

Software Development - Required Knowledge, Skills and Competencies

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Agenda

- A Brief History of Software Development
- Programming, the Internet and WWW
- Net Connectivity
- The Java Vision & Its Implications
- Platform Independence & Open Source
- Java Enterprise and Desktop Systems
- Why You Should Care
- Q&A

A Brief History of S/W Development

- 1822 Charles Babbage's difference engine
- Programming in machine code & Assembly Language
- 1957 FORTRAN (FORmula TRANslating system)
- 1958 John McCarthy of MIT created LISP
- 1959 Business computing began - COBOL
- 1964 Basic extended to Visual Basic
- 1987 Perl - "duct tape of the Internet,"
- Algol led to Pascal, C, C++, and Java an Object Oriented World

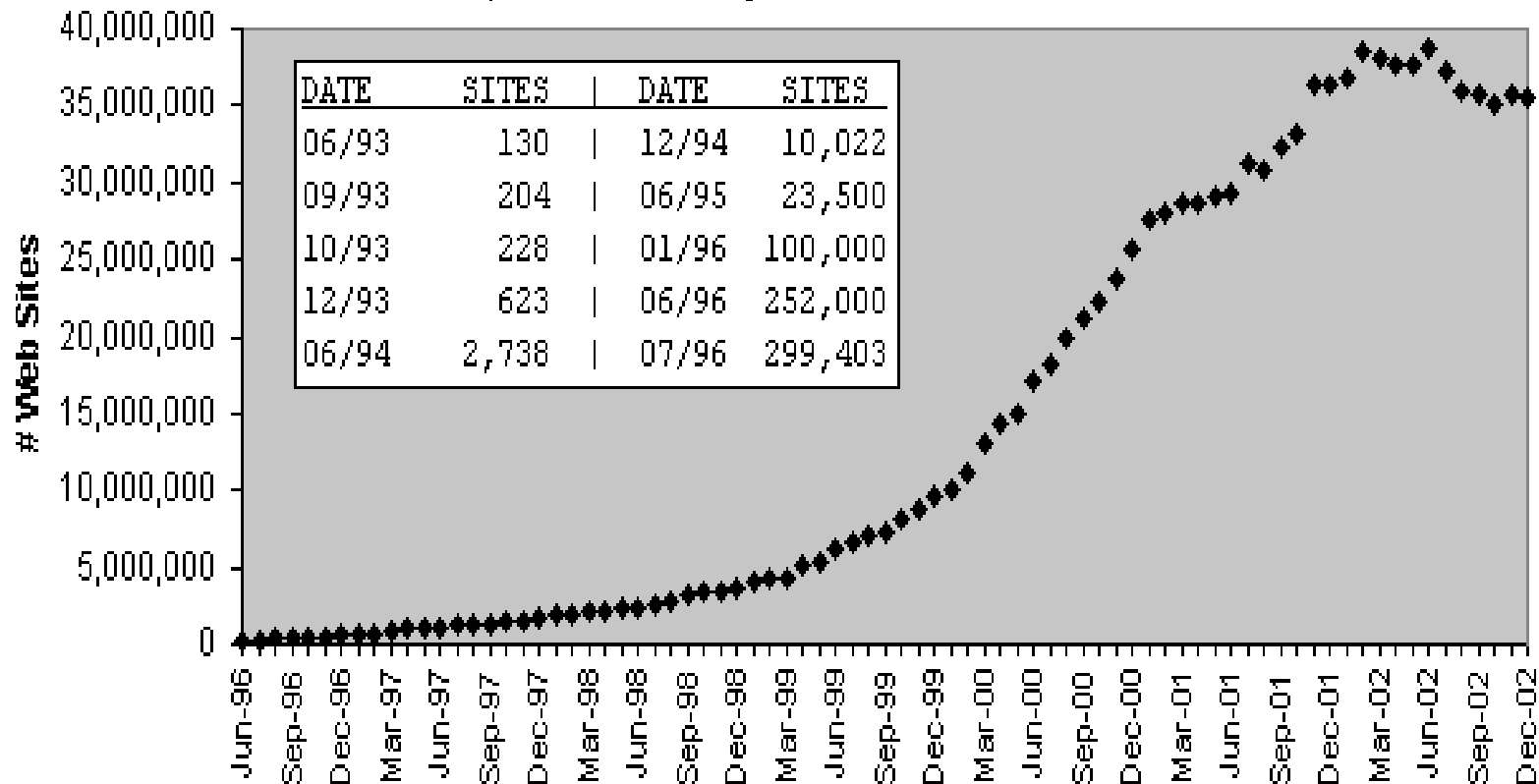
Gartner: Top 10 technologies for 2004

- Instant Messaging, Wi-Fi, Security, Internal Web services, Policy-based management, IP telephony, Utility computing, Grid computing, Network security technologies, RFID tags (miniaturisation and wireless)
- “It’s all about investing to reduce the cost and time in business processes” said Bob Hayward, Gartner’s senior vice-president & research fellow

The Internet & WWW

Hobbes' Internet Timeline Copyright ©2003 Robert H Zakon

<http://www.zakon.org/robert/internet/timeline/>



Al Gore created the Internet and it was good! ;-)

Vision

Everything
of Value Connected
to the Network



Networks of Value



80%
of Web
Servers



550M



150M



400M

Greg Papadopoulos – Sun's CTO

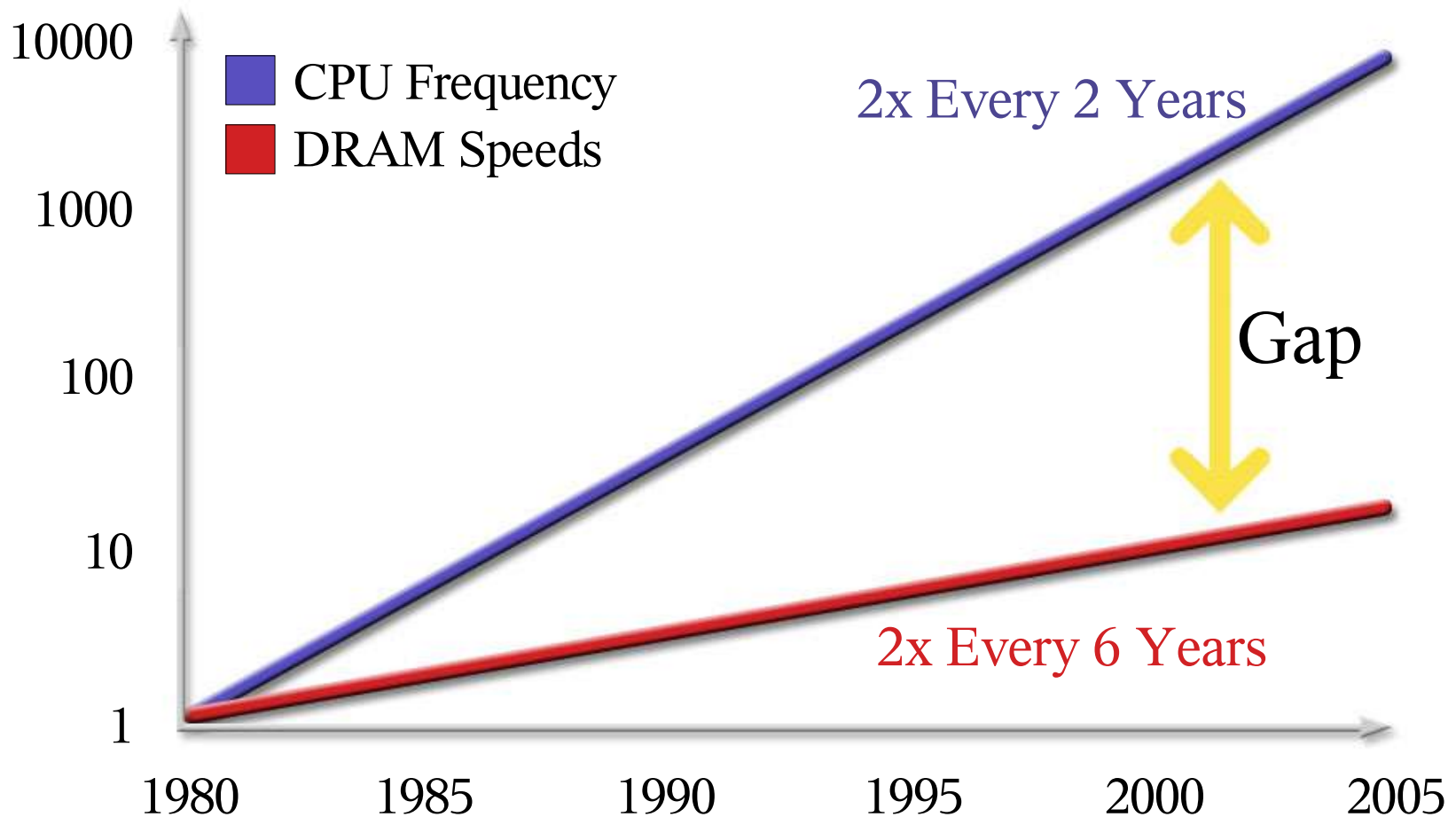
“We have only seen one-tenth of one percent, at best, of what the network revolution will be in terms of the number of connections that will ultimately be made to the Internet. Think trillions and trillions of devices.”

A Case for More 'Net Connectivity'

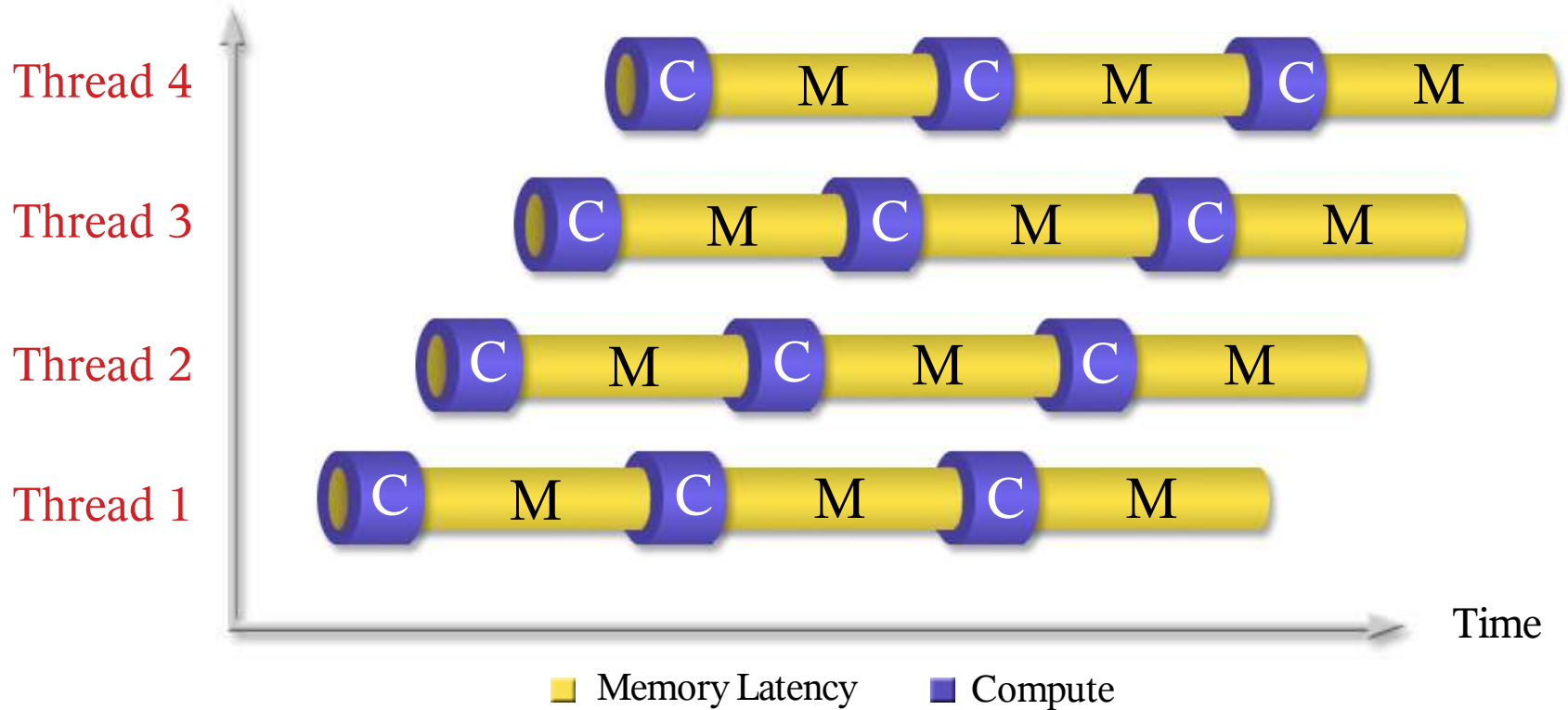
- Dan Gillmor's nose-pinching homecoming!
- Is a net browser on the fridge door needed?
- Should a house or a building be like a car?
- Could you avoid problems with information?
- Could you save \$ by making smart choices?
- Java enabled devices could be the answer!

Clockspeed: Diminishing Returns

Relative Performance



Chip Multithreading (CMT)



Sun's Growing x86 Offering



Powered by Java, Solaris OS and **Red Hat Enterprise Linux**



Sun Fire V60x Compute Rack Grid System



Sun Fire Blade Platform 1 and 2 Processor x86 Blade Servers

NEW



Sun Fire V65x Server

NEW



Sun Fire V60x Server

New Pricing



Sun LX50 Server



Java & It's Implications

- Java – “write once run anywhere”
- Programming language choice matters!
- Object Oriented programming matters!
- Programming tools matter – JDK, Bluej...etc
- Reuse matters!
- Collaboration and communities matter!
- Scalability matters!
- Money matters!

Open

Based on open Internet standards and practices

- Open for ISV partners to build value
- Open for service partners to deliver integration and support
- Open for customers to choose best of breed



The McGraw-Hill Companies

BusinessWeek

www.businessweek.com

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FORD

A LOT IS RIDING
ON THE NEW
F-150 PICKUP

HEINEKEN

WAKING UP AN
OLD WORLD
BREWER

BROADBAND

HOW THE U.S.
CAN CATCH UP

RESEARCH

A MECCA FOR
BIO-MEDICINE

DRESSING

EPIDEMIC

Crippling
computer
viruses
threaten
the info
economy.
Can
they be
stopped?

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Desktop Alternative Means...

Secure

Familiar

Engaging

Productive

Manageable

Affordable

Java Desktop System



Windows Desktop

Internet Explorer

Outlook

Microsoft Office

MSN Instant Messenger

.NET

DHS Warnings

MS Windows/Office



GNOME

Mozilla

Evolution

StarOffice

GAIM

Java

JavaCard

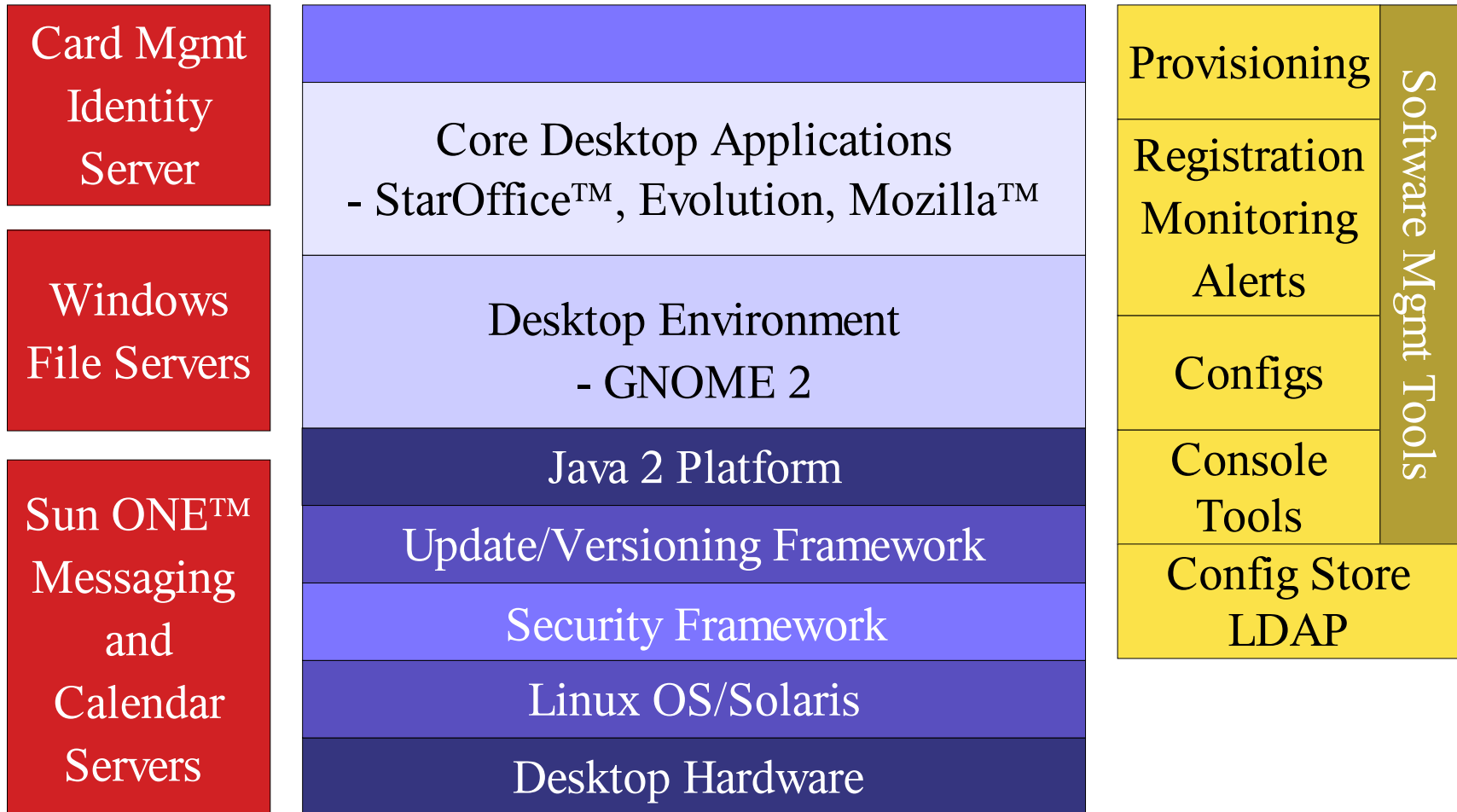
Java Desktop System

Java Desktop System Architecture

Server Integration

Desktop

Management



Integrated
Tools



Developer-
Optimized
Experience

Java Enterprise
System Runtime

Developer
Services

Complete “Create-Build-Test” Environment

Java Studio Enterprise

- First developer platform specifically created for the Java Enterprise System
- Comprehensive platform to create, test, and deploy applications on the Java Enterprise System
 - Full featured IDE for complete Java Web services development
 - Reference applications, sample code, tutorials
 - Developer resources including email support, and moderated forums
 - Software updates and support
- Most affordable developer platform available today
 - Free for Edu use

IT Skill Shortage

- During the “Internet bubble” we had a shortage
- We still have an IT skill shortage
- IT is starting its next “wave”
- Everything will be programmable – Java enabled
 - cell phones, smart cards, appliances...
- New IT positions being created in 2003 – 493,000

Why You Should Care

- The US average compensation for Java programmers rose 11% from last year to \$93,500 according to the JAVAPro 2002 Salary Survey.
- Certification pays – 74% of IT professionals surveyed said their primary certification had a significant impact on their salary increase according to Certification Magazine's Salary Survey, Dec 2002.

Questions



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“A mind, once stretched to a new idea,
never returns to its original dimensions”

Oliver Wendell Holmes