# Creating A Digital Nervous System For The Real-time Enterprise


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**&**

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# Digital Enterprise

***Connected systems greatly enhance your competitiveness***

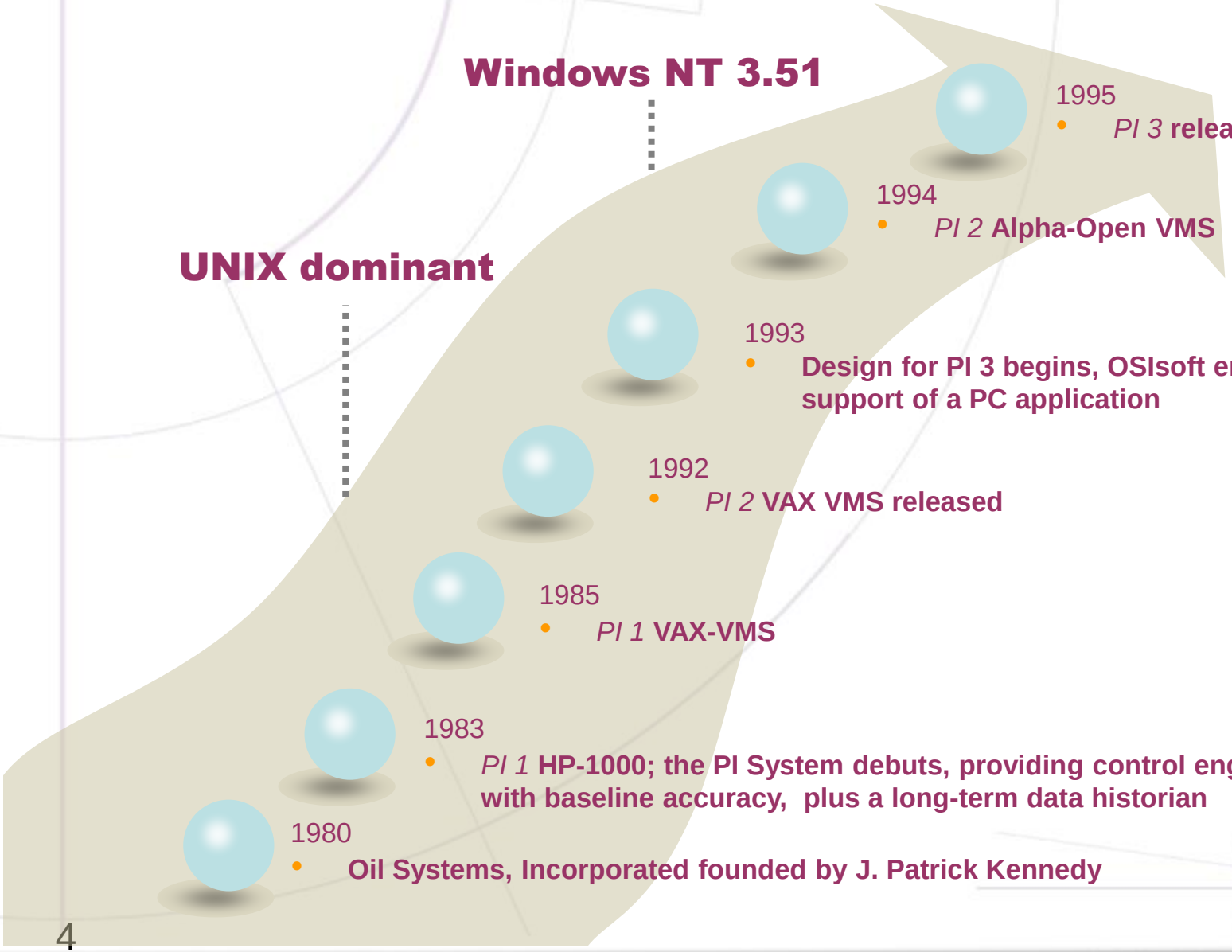
**“You cannot manage what you cannot measure”**

***Bill Hewlett of Hewlett Packard***

**“Leaders have to act more quickly today. The pressure comes much faster”**

***Andy Grove of Intel Corporation***

# Early PI Technology Milestones



# Circa 1995

- OSIsoft support for both Windows / Intel and Unix platforms
- Most large PI systems shipping on Unix platforms
- Saw the introduction of the Pentium® Pro Processor 2P 200MHz, Intel's first widely available server class chip
- From 1995 to 2002, PI Server team focus was on features
- Improvements in performance and scalability resulted from Intel platform improvements

# 2003: PI 3.4

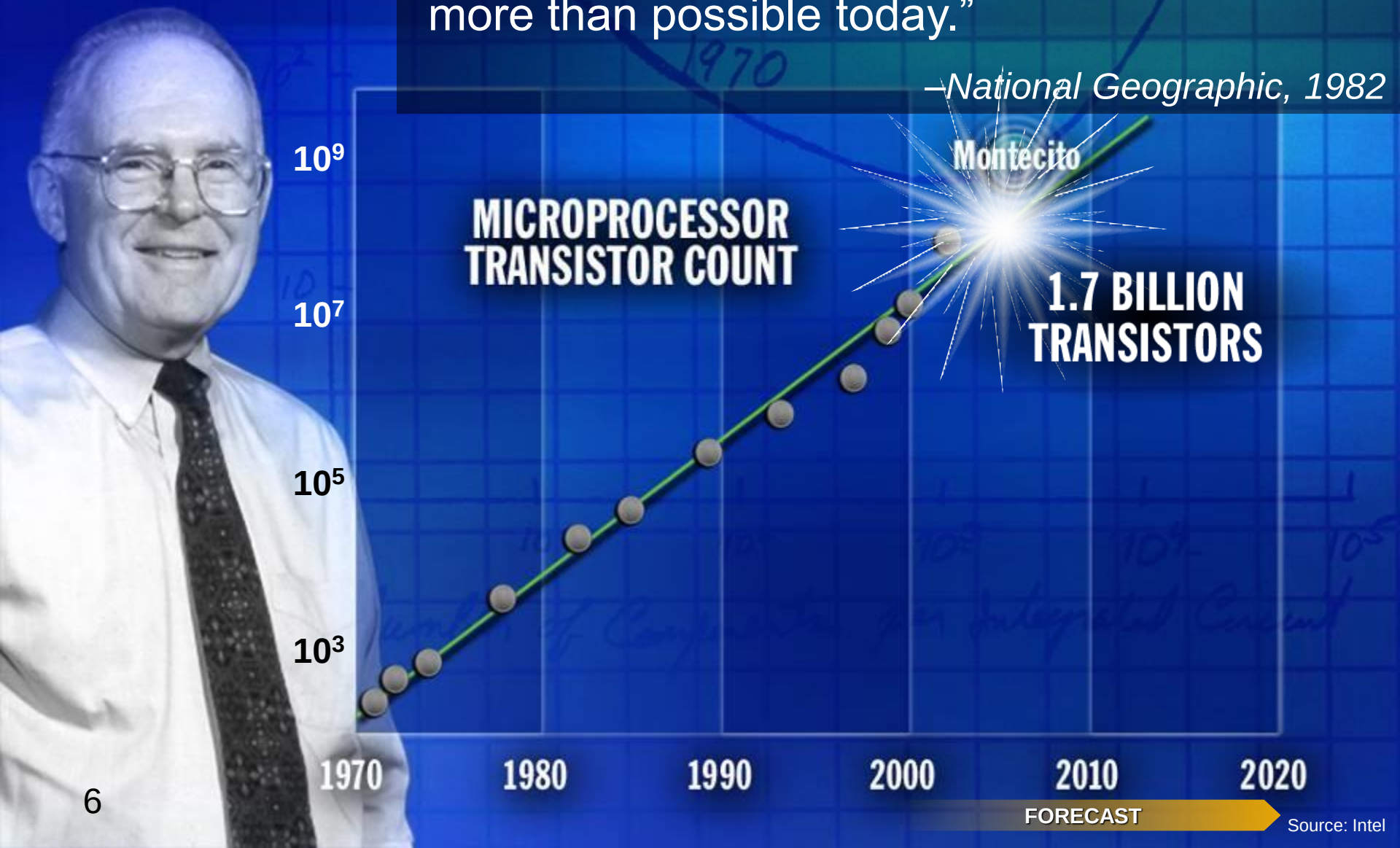
- Encountered the memory and scaling wall in 2002
- PI 3.4 introduced major architectural changes
  - Better memory management and multi-thread capability
  - Takes advantage of SMP
  - Step change in performance and scalability
    - Today we can handle *2 million points* and data rates around *80,000/second*

# 2003: PI 3.4

- Future performance improvements expected to come from Intel's 64-bit platform
  - With 64-bit, perhaps *50 million points*?
  - Consider a complex problem: monitoring critical infrastructure, such as the electric grid
    - Millions of points, tens of thousands of events per second

"Eventually **one billion transistors**, or electronic switches, may crowd a single chip, 1,000 times
more than possible today."

*–National Geographic, 1982*



# State of the Art Computing & Communication Example:

## Increasing the Velocity of Decision Making in Oil & Gas

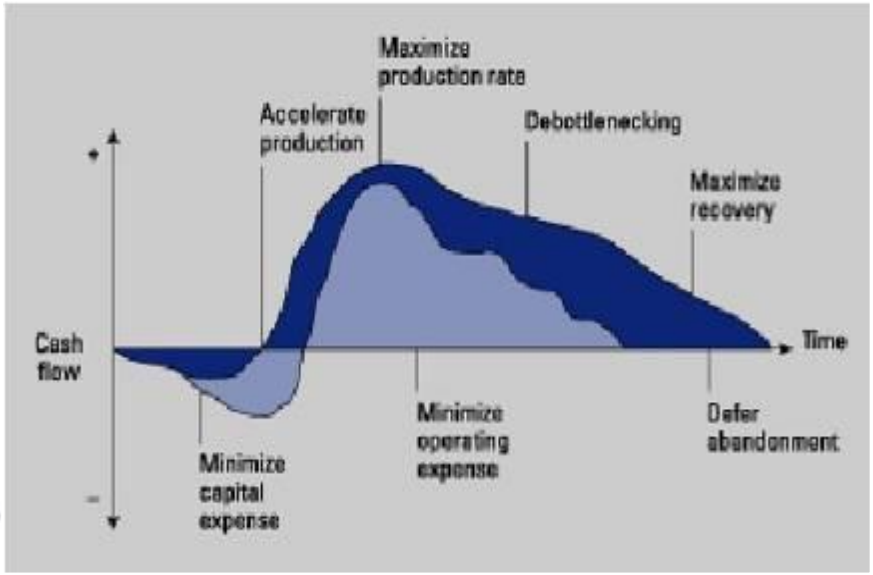
- **Reduced capital cost**
- **Lower operating costs**
- **Increased daily production**
- **Increased recovery**

**Estimated Field Gains**

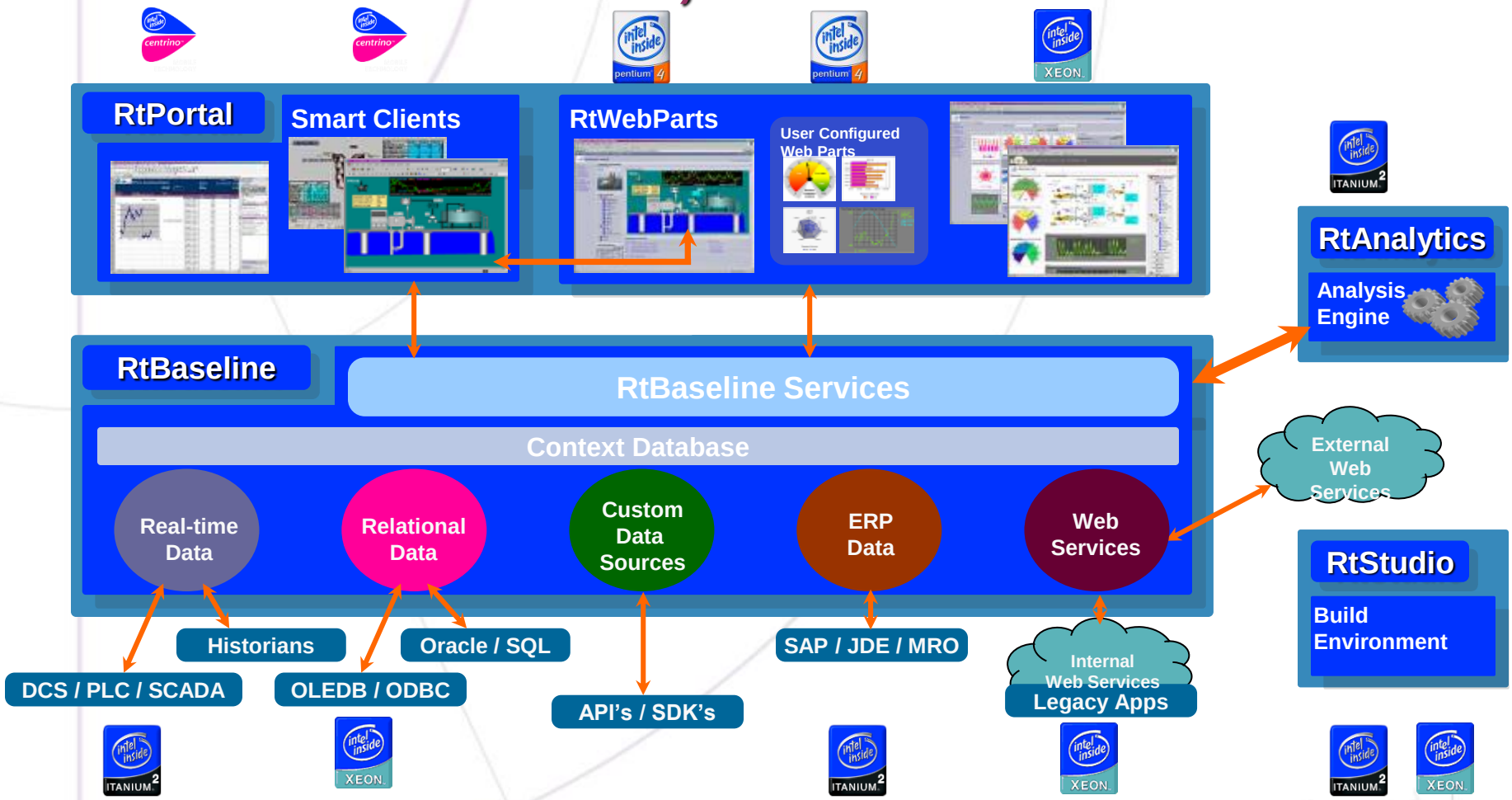
| Metric | Potential Gain |
|---|---|
| Field production rates | 5 -10% |
| Ultimate field recovery | 3 -10% |
| Complex project cycle time | 10 -25% |
| Operating costs | 10 -25% |
| Worker productivity | 50%+ |

Source: CERA

**Cash flow Cycle**



# Delivering Real -Time / Right - Time Solutions SAP, OSI & Intel




OSI & SAP based solutions target Digital Refinery, Pipeline and Oil Field Solutions

# Two Enterprise 64-bit Architectures

| PREVIOUS ARCHITECTURE/SOLUTIONS | TRANSITION BENEFITS | ARCHITECTURE OF CHOICE |
|---|---|---|
| **RISC** Replacement | Exceptional performance – choice of operating system, software & hardware vendors | Intel Inside Itanium 2 |
| **IA-32** Architecture | 64-bit support, great performance for 32-bit apps | Intel Inside Xeon; Intel Inside Pentium 4 |

**Intel is driving 64-bit computing from datacenter to desktop**

# Launching New 2005 MP Platform with additional Customer Benefits


| CUSTOMER REQUIREMENTS | BENEFITS |
|---|---|
| **Platform longevity**<br>**Scaling application performance** | **ARCHITECTED for DUAL CORE**<br>**667MHz dual FSB**<br>Ready for Virtualization Technology |
| **Ability to manipulate large datasets** | **64-bit Computing**<br>DDR2-400 Memory |
| **High levels of reliability and serviceability** to increase server uptime | **Additional advanced RAS** features vs. DP servers |
| **High bandwidth I/O subsystems** | **PCI Express* I/O** |
| **Lower utility costs and ability to use existing infrastructure** | **Demand Based Switching** with Enhanced Intel SpeedStep® Technology |

# MP Platform Reliability, Availability and Serviceability (RAS) Features

- Error-correcting system bus†
- X8 single device data correction
- Memory Hot-swap
- Memory RAID

**Additional RAS features* keep MP platforms up and running**



†64-bit Intel® Xeon™ processor MP 8MB L3 cache only, *vs. Intel DP platforms

# Intel Advantage

- Leadership in:
  - Processor Technology
  - Manufacturing Processes
  - Research & Development
  - Ecosystem Enablement
- Global presence


Innovate with Intel & OSIsoft

# Thank You

- Increase Enterprise Awareness
- Make Your Digital Data a Real Asset
- Transform Your Business