Improving the Development of Multimedia Applications
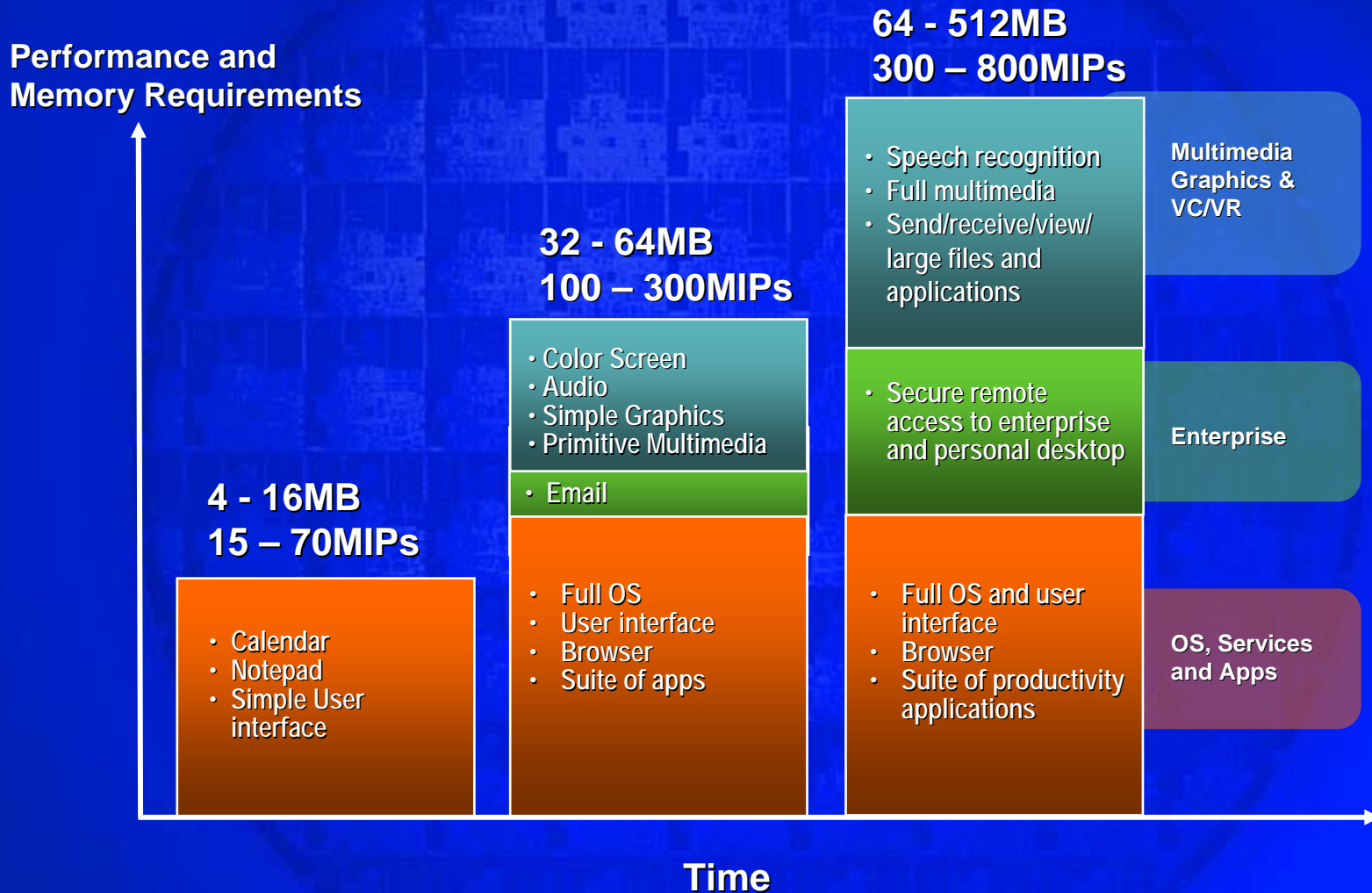
Gary Forni
Director of ISV Enabling
Cellular and Handheld Group
Intel Corporation

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Expectations of a Richer User Experience

Performance and Memory Requirements

64 - 512MB
300 – 800MIPs

- Speech recognition
- Full multimedia
- Send/receive/view/ large files and applications

Multimedia Graphics & VC/VR

32 - 64MB
100 – 300MIPs

- Color Screen
- Audio
- Simple Graphics
- Primitive Multimedia

- Email

- Secure remote access to enterprise and personal desktop

Enterprise

4 - 16MB
15 – 70MIPs

- Calendar
- Notepad
- Simple User interface

- Full OS
- User interface
- Browser
- Suite of apps

- Full OS and user interface
- Browser
- Suite of productivity applications

OS, Services and Apps

Time

Deliver Seamless Experience from PC to Phone

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Simplifying Application Portability

PC

| IA32 |
| MMX |
| SSE2 |
| SpeedStep |
| Security |

Phone

| Intel® XScale |
| wMMX |
| wMMX2 |
| Wireless SpeedStep |
| Security |

Cross Development Tools →

Common IPP/ APIs →

Common IPP /APIs →

Driver Support in OS BSPs →

Common Security Primitives →
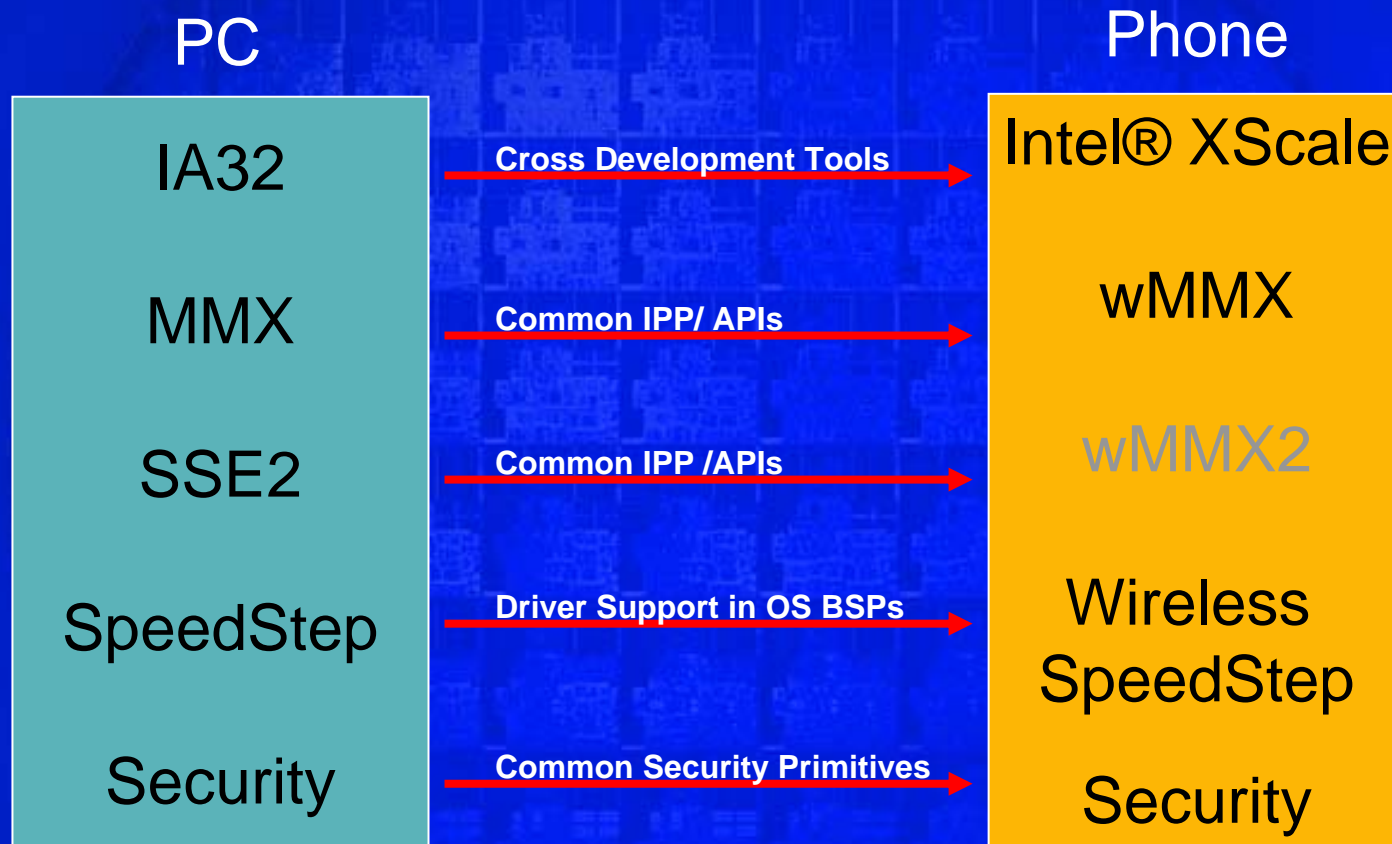
Larger system features migrate to SFF

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Intel® Wireless MMX™ & WMMX2

- WMMX – Wireless MMX
  - **43 SIMD multimedia instructions**
  - **Fast TTM and ease of development**
  - **Major performance bump**
- **Introducing WMMX 2**
  - **14 New Instructions provide greater functionality over Intel PXA27x WMMX™**
  - **New Instructions target additional acceleration of the following critical algorithms**
    - **Audio and Voice Processing**
    - **Video Processing**
    - **General DSP Operations**

MMX Technology

- **Enhanced Performance**
- **Power optimized**
- **Same Programming Model**

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Which Symbian OS* Tools does Intel offer?

- **Profiling tool**
  - **VTune**
  - **To find bottlenecks in the code**
- **Intel compilers**
  - **Produces highly optimized code**
  - **Offers WMMX/2 switches for**
    "automatic" optimization
- **Performance libraries**
  - **(IPPs/GPPs)**
  - **Allows re-use of code**
- **Development boards**
- **Optimization Kit (including a real device)**
- **Optimization guides, books, case studies, etc**
- **Technical support from optimization engineers**
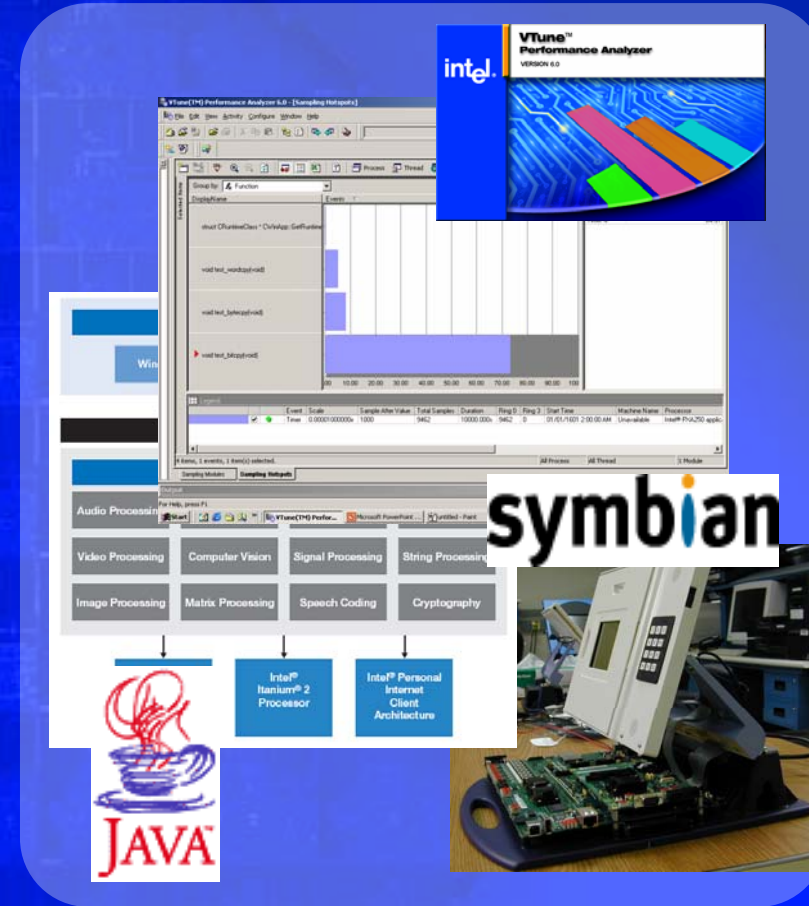
Why should you optimize for Intel® Xscale® and Symbian OS*?

- Better application performance
  - Performance enhancement usually 15% to 100%, sometimes up to 10X
  - Average is about 50%
- Customers prefer good performance
  - "Is your application optimized?"
- Co-branding and co-marketing opportunities
  - Developer Community
  - Joint white papers
  - Exhibitions, keynotes at major events
- Matchmaking opportunities
  - Intel has relationships with major operators and OxMs
  - Intel promotes optimized applications

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Intel Handheld Platform Features

PC quality video
Intel® Wireless MMX™ Technology:
Designed for high-performance multimedia
Video at 30 frames/sec[1]

Hi Quality Digital Imaging
Intel® Quick Capture Technology:
• Supports 4+ Megapixel cameras
• Support for advanced mobile audio formats[3]

Low power consumption
Wireless Intel SpeedStep®
 Technology:
• 5 low-power modes
• 15.5 hours of MP3 playback[2]

Robust Security
Intel® Wireless Trusted Platform
• OMA-compliant DRM[3]

Intel-based Handsets Deliver Outstanding Multimedia, Battery Life, and Security

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1 Frame rate for resident application. Actual throughput will depend upon network conditions.
2 On Intel's PXA27x–based handsets
3 Depends on appropriate software on each device

Symbian & Intel Joint 3G Reference Platform Demo

- **Last year we announced a joint 3G Reference Platform with Symbian**

- **This year we are showcasing the 3G Reference Platform at the Exhibition**
  - **Symbian OS v9* and Series 60 Platform 3rd Edition***
  - **Come to see us in Booth 46!**

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* Trademarks and names are property of their respective owners

Summary

- **Using solution-ready optimized Symbian OS* applications reduces Time-to-Money for handset manufacturers, carriers and ISVs**

- **By optimizing applications and middleware for XScale platforms, users typically experience significant performance improvement and, in addition, power savings**

- **Improved application performance enhances the end user experience with the phone and applications**

- **Intel's ISV, Symbian and content provider relationships provide flexibility and differentiation choices for carrier and OEM customers**

- **Intel facilitates cross architecture application migration**

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