

**IDF2012**  
INTEL DEVELOPER FORUM

# Developing for Microsoft\* Windows\* 8 on Intel® Architecture Based Tablets and Hybrids

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**TABS001**

Sponsors of Tomorrow: 

# Agenda

- Background
- Intel® Silicon Roadmap for Tablets and Hybrids
- Intel® Architecture and Windows Software
- Intel Enabling Resources for Windows
- Summary and Call to Action

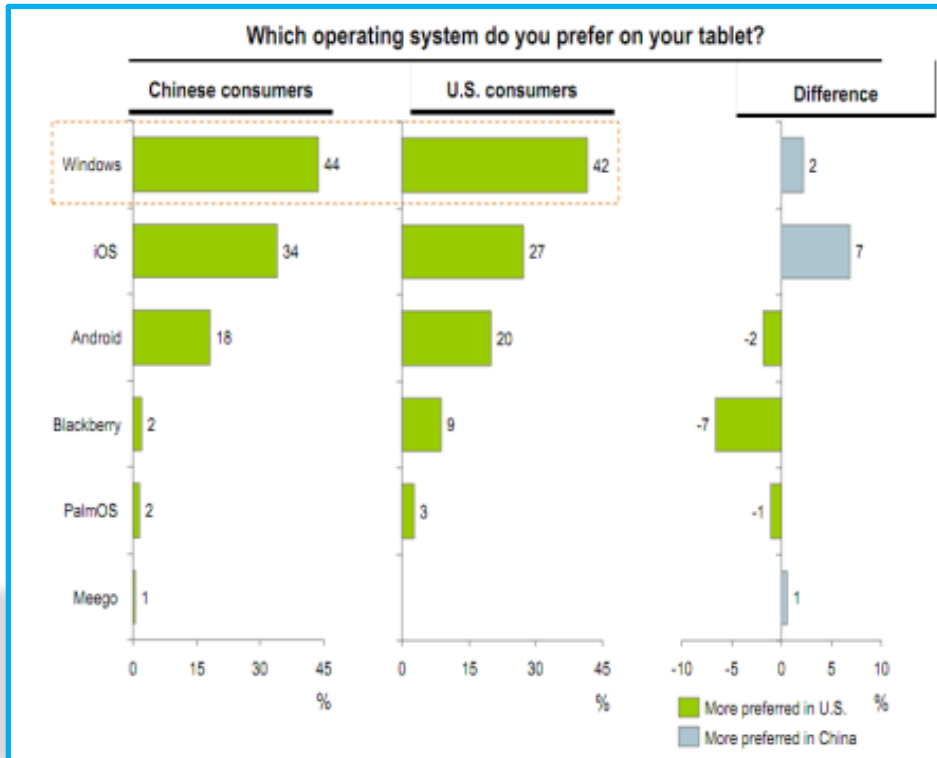
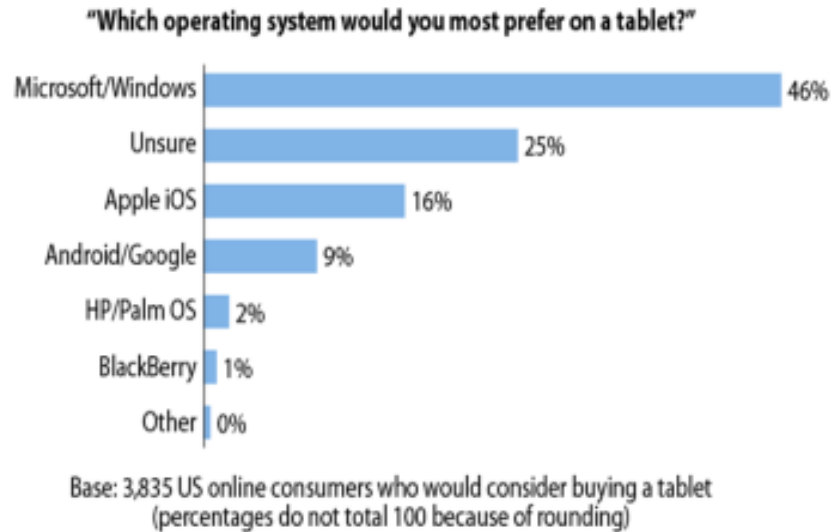
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**URL is on top of Session Agenda Pages in Pocket Guide**

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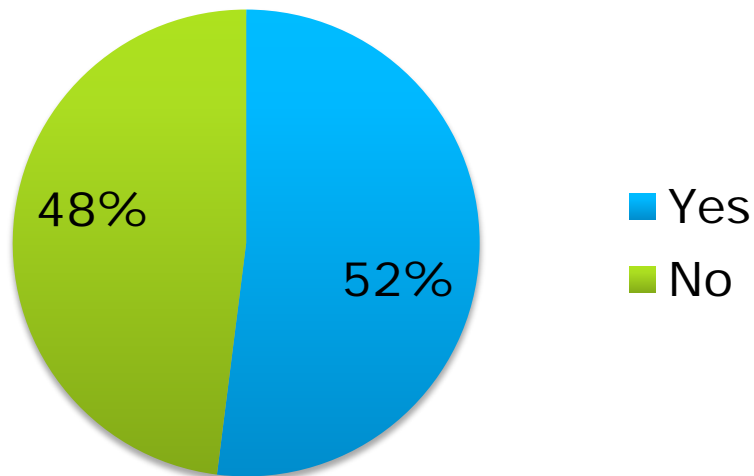
# Consumer Surveys On Tablet OS's



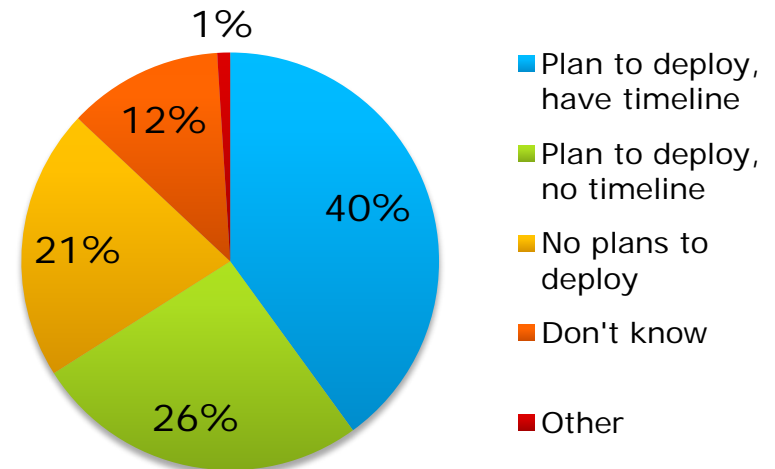
**Forrester: Consumers Prefer Windows ...  
on Tablets**

# Business Demand for Windows\* 8

Do you plan to upgrade to Windows 8?



Do you plan to upgrade mobile devices to Windows 8?



***Information Week: Of IT professionals planning to upgrade, 2 in 3 plan to upgrade mobile devices to Windows 8***

# Microsoft\* Windows\* 8



Windows  
reimagined

All the apps  
you want

Cloud-  
connected

Get more at  
the Windows  
Store

Reimagined  
browsing with  
IE10

At home and  
at work

Great  
experience  
across all  
hardware

Built on a solid  
foundation

# Intel® Architecture (IA) for Windows



*Over twenty years of continuous development, tuning, optimization, industry standards and developer tools focused around to advance Intel Architecture for Windows*

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# Mobile and Communications Group

*Establish Intel as the provider of revolutionary experiences on mobile, tablet, hybrid, and emerging devices by delivering leading-edge platform and wireless technologies that delight and amaze our customers*



# Intel and Windows\*

## Winning Tablets and Hybrids



### Exceptional User Experience

- Touch-first, multi-point interface
- Responsive UI
- "Live" tiles (AOAC)
- Sensors – Touch, ALS, GPS, etc.
- Comprehensive Wireless capabilities
- Full Windows Desktop application-compatibility
- Long Battery Life

### Si, OS, Driver Enhancements

- Fine-Grain Power Management
- Instant On (Fast Boot/Resume)
- HD-capable Si & HD Video offload
- Comprehensive support of USB devices
- Proven solutions for Security & Manageability

***Windows\* 8 on Intel® based tablets will provide PC capabilities through Intel experience & expertise***

# Intel Advantages:

## *Experience & Ecosystem*



### Overall Performance

Improved performance across the spectrum:

- Processor performance
- Battery performance in mobile & on-the-go uses
- Balanced compute & graphics performance
- Immersive graphics & multimedia
- Fast response & boot / resume



### Compatibility & Consistency

- Maximize BOTH 'Metro-style' & traditional Desktop app performance
- Consistency between a users' multiple devices spanning mobile
- Utilize a broad spectrum of peripheral devices with any 'platform'



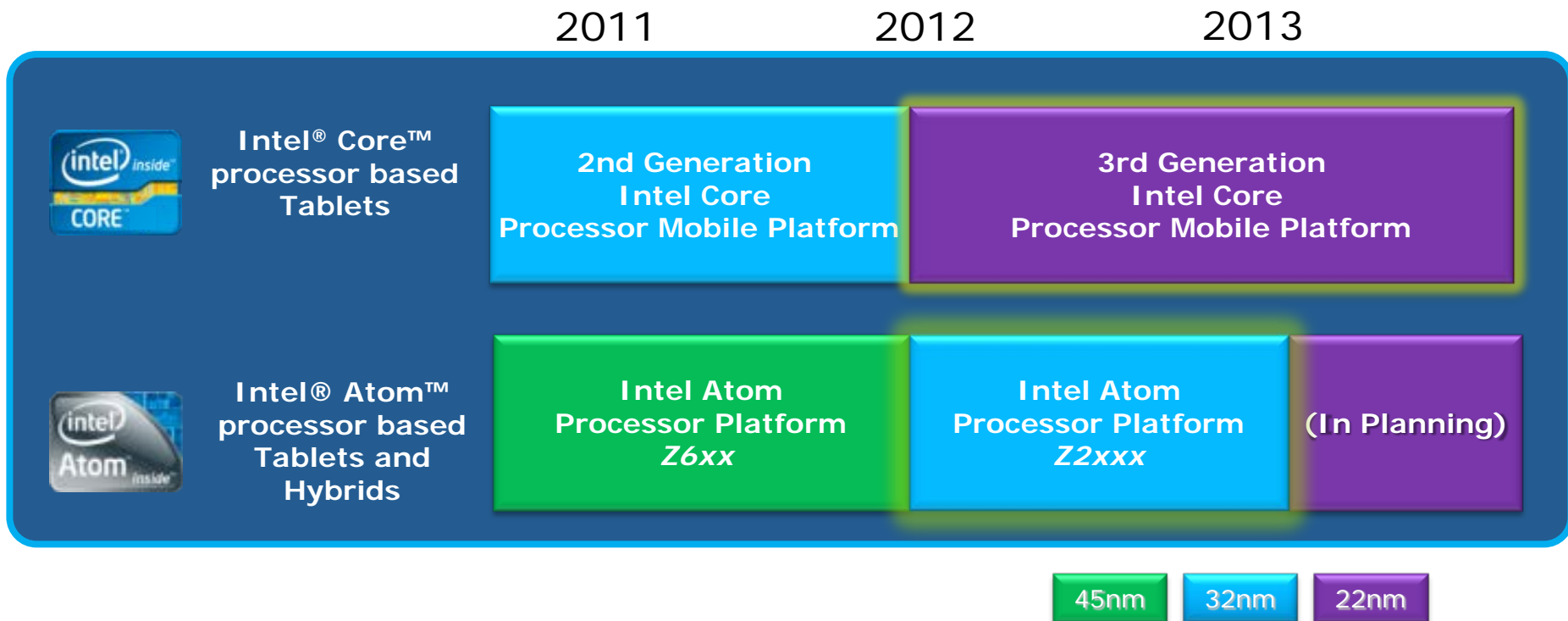
### Security & Protection

Improved security/protection

- Protection of personal information while shopping, playing or banking online
- Secure boot for fending off viruses & malware
- Anti-theft
- Anti-malware services

***Best-in-class software development, enabling and optimization expertise at Intel and with our ecosystem partners!***

# Intel® Tablet and Hybrid Platform Roadmap Overview



*Transitioning 3 process technologies over the next 3 years*



# Intel® Atom™ Processor Z2760

*Based Platform for Tablets & Hybrids (Codenamed Clover Trail)*

## Mobility Features



9+ Hours  
Battery Life



~30 Days  
Standby



<1.5  
Pounds



<9 mm  
Thin



3G/4G

- Supports Microsoft\* Windows\* 8 Operating System
- Exceptional Performance
- Improved Battery Life
- Improved Connectivity
- Enhanced Protection and Manageability
- Windows Desktop Ecosystem Support

## Experience Features



Intel® WiDi  
WiFi Direct



Connected  
Standby



One Tap  
NFC



Silicon Hive

Advanced  
Imaging



Compute  
Continuum

<sup>1</sup> Intel® WiDi Technology requires an Intel® Wireless Display enabled PC, compatible adapter, and TV. 1080p and Blu-Ray\* or other protected content playback only available on 2nd generation Intel® Core™ processor-based PCs with built-in visuals enabled. Consult your PC manufacturer. For more information, see [www.intel.com/go/widi](http://www.intel.com/go/widi)

# 3<sup>rd</sup> Generation Intel® Core™ Processor

Based Platform for Tablets Codenamed Chief River



*Backward compatibility with millions of applications and device drivers in the Windows Desktop Ecosystem*

- Supports Windows\* 7 and 8 Operating Systems

*Faster CPU Performance  
Intel® Turbo Boost Technology  
Up to 4C and 8MB of Intel® Smart Cache  
Intel® Hyper-Threading Technology  
Last Level Cache (LLC) Shared between CPU and Processor Graphics for better performance*

- Leading Performance

*Intel® AVX Extensions and AES-NI Instructions improvements and added Security*

Targeting Halo Experiences for Business and Gaming Segments



*Improved Graphics with Next Generation Intel® HD Graphics with DirectX\*11  
16 Graphics EUs Available for Better Graphics, Media*

- Enhanced Security
- Next Generation Intel® HD Graphics

*Lower Average Power  
DDR and GT Power Gating for lower idle power  
Power Aware Interrupt Routing for Power Savings  
Support for DDR3L (low voltage DDR3)*

- Power Efficiency

# Intel Launch Platforms for Windows\* 8

*Existing Windows Ecosystem Support?*

No

Yes

Yes

Competitors



*Native Connected Standby on Windows\* 8?*

No



Competitors

<sup>1</sup>Intel® Core™ processors can take advantage of Intel® Smart Connect Technology to update programs by periodically waking your PC from Sleep Mode to keep applications up to date

***Intel® Atom™ is expected to be the only time-to-market platform to offer both existing app support and connected standby, while Core brings higher performance, native graphics, and additional system memory***

# Intel® Experiences on Windows\*

## Compute Continuum and Near Field Communication



- Easy connection with gadgets
- Foundation framework for simple that could be leveraged by other apps

## Intel® Insider™



- Watch HD movies the same day DVD is released
- End to end Hardware protection for premium content
- Share content securely with other Intel® Architecture based devices in the same domain

## Advanced Imaging



- Advanced Image Signal Processor
- Provides the necessary ingredients to enable best in class cameras
- Features like facial recognition, burst mode

## WiFi Direct and Intel® WiDi



- Stream online or local media content to your TV
- Interoperability with DLNA and WiFi direct certified CE devices
- Clone mode and Extended desktop mode support



# Intel Differentiation by Segment



9+ hours  
Battery



3G/4G



Connected  
Standby

Basic



~30 days  
Standby



< 1.5 lbs  
light



< 9 mm  
thin

## Business

- Backward App Compatibility
- Security and Manageability
- Domain Join
- Encryption

## Education

- Intel® Wireless Display
- Intel Learning Series
- Advanced Imaging

## Entertainment

- Intel® Wireless Display
- Advanced Imaging
- Intel® Insider™
- Compute Continuum
- NFC

## Gaming

- Hyper Threading
- Burst Mode
- WiFi Direct

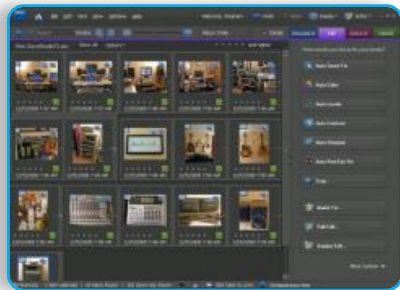
*Intel is well positioned to address these segments*

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# Windows\* Desktop Application Support on Intel® Architecture (IA)

Productivity  
*Quicken\**



Productivity  
*Adobe\*  
Elements*

Education  
*Rosetta Stone\**

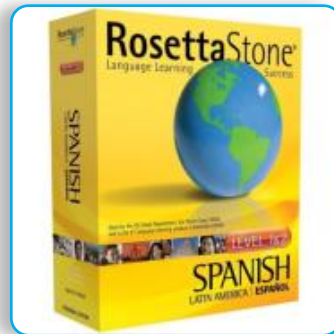
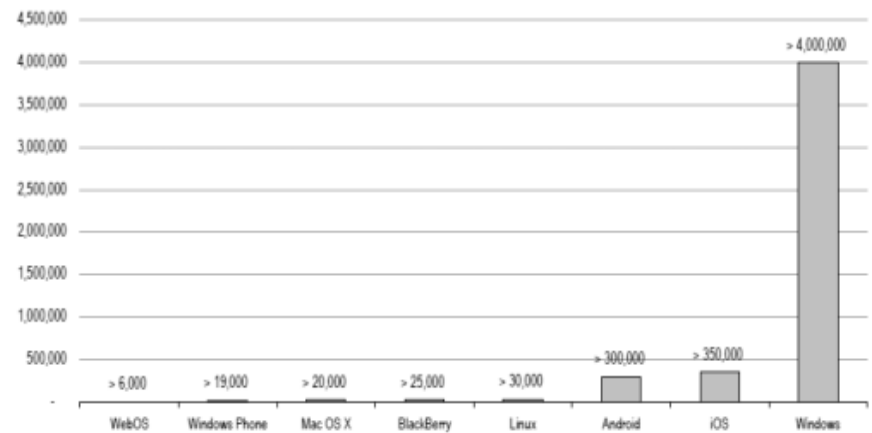


Exhibit 45: Applications by Operating System



Source: Company data, Credit Suisse estimates.

**Windows\* on IA has the largest existing library of applications**

# Intel ISV Engagements for Windows\* 8

## Embrace and Extend Metro\* Experience

- Energy efficient and performance apps



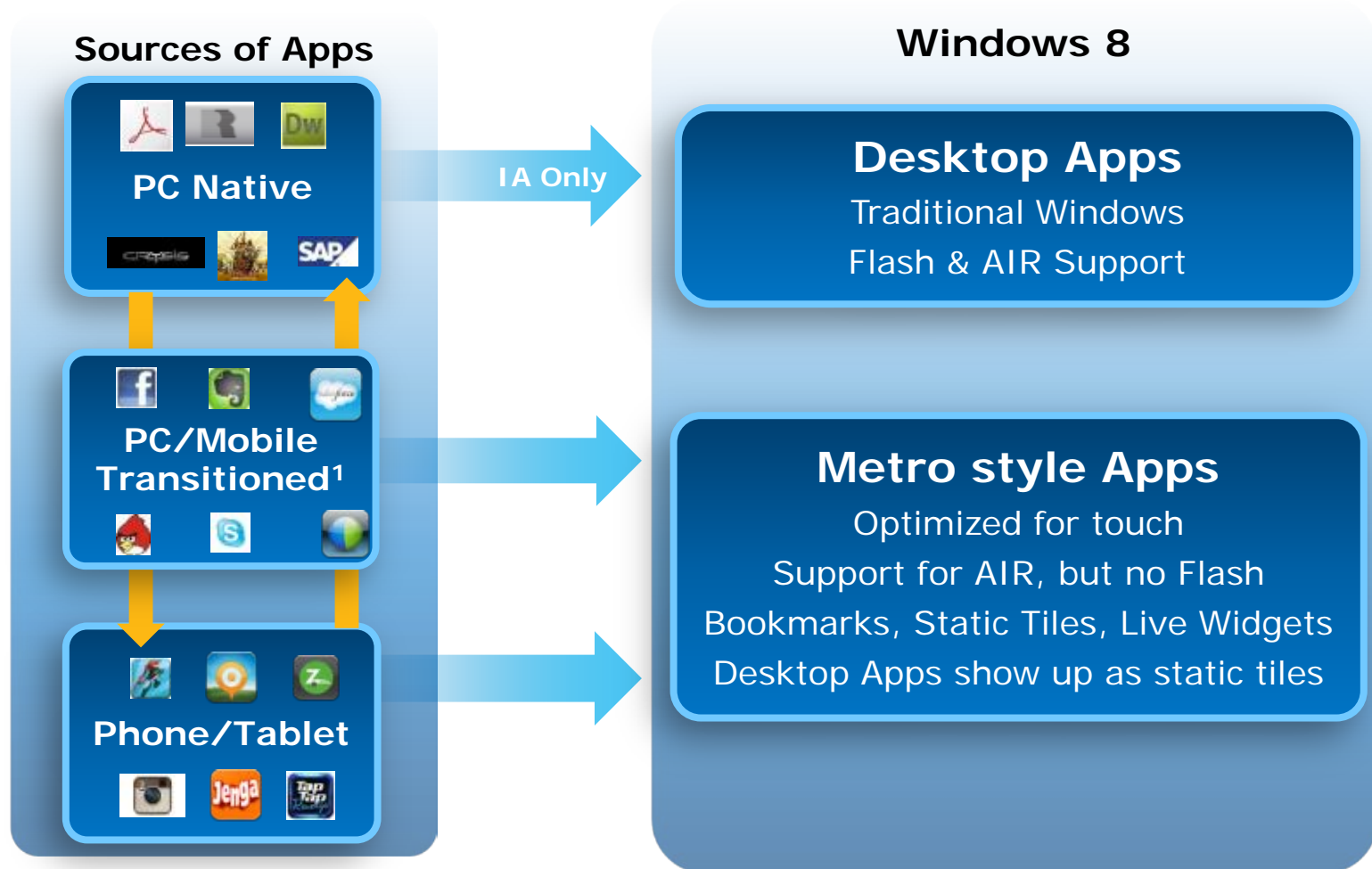
## Differentiate with Desktop Apps

- Intel® tools to optimize performance
- Differentiate: touch, power, performance/responsiveness and security



*Intel's ISV enabling will continue with Windows\* 7 and ramp for Windows 8*

# Application Migration to Windows\* 8



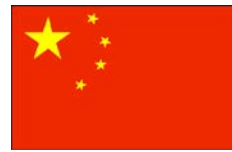
# PRC ISV Enabling Pipeline

For Intel on Windows\* 8



*Hundreds of apps enabled for Windows\* 8 with more to come*

# PRC Windows\* 8 Scale Enabling



- Online + Offline model to amplify the influence
- Joint - Portal with SWPs for program communication and technology evangelization
- Windows\* 8 for IA Community at ISN for developer readiness
- Customized Windows\* 8 on IA course at ISC for in-depth training
- PR stories and case studies to promote star application to arouse enthusiasm for Windows enabling on IA

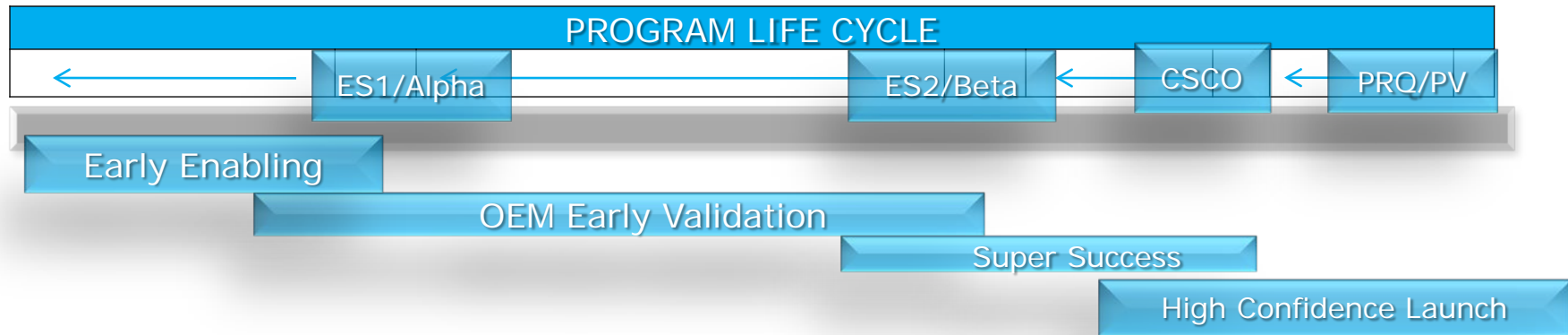


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# Enabling Phases and Goals



Early Enabling	OEM Early Validation	Super Success Drive	High Confidence Launch
<ol style="list-style-type: none"> <li>1. Publish HW/SW Spec for Vendor, customer</li> <li>2. Close on IHV/ISV selection and commits</li> <li>3. BOM list published to customers</li> <li>4. <b>Drive early collateral and events</b></li> <li>5. <b>Engage on design reviews and power-on activities</b></li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Customers early testing</b> to include customer usage model, environment and eco-system</li> <li>2. Internal Validation health/status corroborated with customer test results, ISV enabled</li> <li>3. Customer helps identify test holes and risk</li> <li>4. BKC published and Workshop plans in place for roll out</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Internal Validation health/status corroborated with customer test results</b></li> <li>2. Focus on certifications, performance, ISV integration, drive internal health status corroborated with customer test results</li> <li>3. Execute on Workshop plans.</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Freeze design and drive any remaining SW/FW fixes</b></li> <li>2. Customer verification. Customer learning's rolled into next program</li> <li>3. Publish Final rev of all collaterals</li> </ol>

*Leading customers to high-confidence launch*

# Intel® Atom™ Processor Z2760 Based Reference Designs

## 10.1" BOM

Leverages Intel®  
Software Development  
Platform BOM  
Inclusive of Experience  
Features



## 11.6" BOM

Keyboard input,  
USB Hub/USB Switch  
Inclusive of Experience  
Features



# Firmware Enabling

- Working with BIOS and Firmware Vendors for UEFI, ACPI compliant firmware/BIOS for Windows\* 8
- Provide BIOS Collateral and utilities to customer/IBV
- Trainings/workshops - NTET and Everest program
- Dedicated customer support on select customers

*Intel is working with IBV's to enable feature rich BIOS for Windows\* 8*

# Device Driver Support and Enabling

- Targeting Microsoft\* certified WHQL compliant drivers which provides access to all standard hardware interfaces such as DirectX\* VA2.0, MFT, etc.
- Graphics drivers support standard interfaces such as DirectX, OpenGL\*
- For Sensor hub and sensors, API's exposed via Microsoft Windows\* 8 framework
- HDMI and Low Power Audio driver support
- Imaging and camera drivers
- Security driver/firmware

*Intel and 3<sup>rd</sup> party vendors to provide Microsoft certified Windows\* 8 drivers*

# Application Enabling

- Applications: IA based tablets and hybrids support both Metro and Desktop
- Working with application vendors to offload video decode, DRM path, and audio for enhanced performance



# Third Party Vendor (TPV) Ecosystem

## Vendors

### Hardware Components / Technologies

Display / Touch

Sensors

Audio



Cameras

Battery

Storage

Comms: WiFi, BT, GPS, NFC, 3G/LTE

*Establish vendor partnerships for enabling new technologies and interfaces, identify and enable primary and secondary sources for key components*

# Benefits of Intel Third Party Vendor Enabling

## Best Features

- TPV scoping enables best feature offering from strategic partners that meet all Intel SoC platform requirements.

## Highly Optimized

- Stringent guidelines and execution efforts ensure TPV solution is highly optimized with Intel SoC platform.

## Seamless Integration

- Highest quality validation and integration efforts ensure TPV solutions can seamlessly integrate with Intel SOC platform.

## Superior Customer Support

- Strong relationship with strategic partners allow superior customer support during product enabling.

***Choosing an Intel enabled solution helps our customers to integrate TPV solutions with minimum effort/high confidence and meet product TTM launch schedules***

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# Imagine the Possibilities:

## Intel® Architecture and Windows 8

Blend of Metro and traditional Windows desktop with Desktop Apps support

Business Loves Windows  
(Security, Compatibility, Legacy Support)

Flexibility for entertainment or productivity through form factor conversion from tablet mode for touch to keyboard mode for optimized typing

IA Best in Class  
Advanced Imaging and Security Features



Unique IA experience features



Native Connected Standby on Intel® Atom™ Processor Z2760 based platforms

Windows Apps and Accessories/Peripherals Compatibility

# Summary

- Intel will support Windows\* 8 launch with Intel® Architecture based tablets and hybrids
  - Intel® processors bring leadership silicon process technology
  - 3<sup>rd</sup> Generation Intel® Core™ processor brings leadership performance
  - Intel® Atom™ Processor Z2760 will support desktop applications and connected standby on Windows 8
- Windows\* 8 on Intel Architecture brings energy-efficient, high performing, responsive, and secure user experiences
  - Intel brings multi-way processing via multi-threading plus burst capabilities
  - x86 has full Windows Desktop software compatibility for 3<sup>rd</sup> party ISVs
  - Intel brings enhanced security, secure boot, etc.
  - Intel also has a unique suite of experiences through hardware, like Intel Compute Continuum, Wireless Display, Silicon Hive advanced imaging, Intel® Insider™, etc.

# Call to Action

- Develop for Windows\* 8 on Intel® Architecture based tablets and hybrids
  - Create Windows\* 8 apps on Intel Architecture to maximize your productivity, differentiate your software, and increase your market reach
- Download and learn Windows\* 8 now
  - <http://dev.windows.com>
- Download Visual Studio\* 11 Express Beta for Windows\* 8
  - <http://msdn.microsoft.com/zh-cn/windows/apps/hh852659>

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