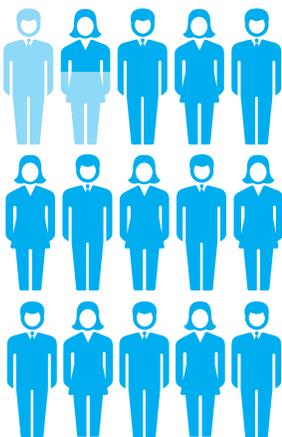




IT@Intel

Exploring the Rise of Ultrabook™ 2-in-1 Device Usage at Intel



Beginning with 1,500 employees, 2-in-1 device usage has expanded to nearly 15,000 employees.

Executive Overview

Since 2013, Ultrabook™ 2-in-1 devices, which can be used either as traditional laptops or as tablets, have been a standard offering for Intel's PC refresh cycle. Intel IT anticipated that 2-in-1 devices could increase employee productivity, lower total cost of ownership, and satisfy employee preference for touch-enabled devices. Beginning with 1,500 employees in Intel's manufacturing environment, 2-in-1 device usage has expanded to nearly 15,000 employees across the enterprise.

We recently evaluated how well 2-in-1 devices are working for Intel employees. Our findings show that 2-in-1 devices provide significant benefits for multiple use cases compared to other types of devices.

The study revealed that employees in the sales and marketing groups and other highly mobile employees particularly benefited from the flexibility of 2-in-1s. These employees, who focus mainly on consuming and sharing content from multiple data sources, were more likely to value tablet mode and touch capabilities, to consider the 2-in-1 laptop mode equivalent to a standard laptop, and to choose a 2-in-1 for their next PC refresh. Two-thirds of all participants considered 2-in-1s easy to use, and, overall, employees were as satisfied with their 2-in-1 as they were with other devices they used.

As previous Intel IT studies have shown, "one size does not fit all" when it comes to technology. Therefore, we believe it is important to offer multiple technology choices, enabling employees to select the best device for their jobs and ways of working to maximize productivity. We will continue to offer the Ultrabook 2-in-1 as a refresh option for those who prefer its unique flexibility, portability, and touch capabilities.

Refael Mizrahi
IT Program Manager, Intel IT

Doron Mintz
Personal Computing Platforms
Service Manager, Intel IT

Anne McEwan
UX Researcher, Intel IT

Contents

- 1 Executive Overview
- 2 Background
- 3 Employee Survey Yields Useful Insights
- 4 2-in-1 Device Case Studies
 - Sales and Marketing
 - Manufacturing
 - Campus Recruiting
 - Air Shuttle
- 6 Conclusion

Transforming the IT Ecosystem to Support the Applications and Devices of the Future

We are encouraging the development of enterprise applications that meet five criteria that result in a better user experience and streamlined mobile application development:

- Security
- Ease of use
- Platform independence
- Device independence
- Support for emerging devices and interactions (such as touch)

To support our developers, we have implemented a mobile-application development framework that accelerates the delivery of secure mobile-enterprise applications to Intel employees. At the end of 2014, we had nearly 150 touch-enabled enterprise applications in production, and we expect that number to double in 2015.

Background

To enhance productivity, Intel IT offers a wide choice of device types to Intel employees. We constantly explore new technologies and capabilities available in the industry to align with new and increasingly mobile ways of working. One such technology has been the 2-in-1 device (see Figure 1).

In 2013, we began offering Ultrabook™ 2-in-1 devices as an option in our regular corporate-supplied PC refresh cycle, making them available to every employee eligible for refresh. We envisioned that deploying 2-in-1 devices would offer these benefits:

- **Increase employee productivity.** 2-in-1s can boost productivity by offering the flexibility of both laptop and tablet capabilities in a single form factor. They enable employees who are highly mobile or those who work in environments that could benefit from the device's flexible form factor to work even more effectively.
- **Lower total cost of ownership.** In some cases, 2-in-1s can eliminate the need for purchasing and using two devices. Making investments in 2-in-1s can reduce total cost of ownership by combining two devices in a single unit, with touch capabilities extending the use of these devices in the future.¹
- **Satisfy employee preference for touch-enabled devices.** In a 2013 survey, 90 percent of Intel employees preferred touch to non-touch devices. The consumerization of IT continues to increase employee demand for touch capabilities, and our enterprise touch applications are becoming more prevalent to meet that demand (see [Transforming the IT Ecosystem to Support the Applications and Devices of the Future](#)). 2-in-1s are one way to add touch capabilities.

¹ See the Intel IT white paper "Accelerating Deployment of Touch-enabled Business Ultrabook™ Devices."



Tablet-Like 2-in-1 Capabilities

- Touch interaction
- Instant-on/quick resume
- Apps ecosystem
- Lightweight, thin design
- Long battery life



Laptop-Like 2-in-1 Capabilities

- Productive PC environment
- Standard PC applications
- Multiple input capabilities
- Multitasking environment

Figure 1. The 2-in-1 device offers performance and flexibility suitable for use in many Intel work environments.

More than 1,500 employees in manufacturing were early adopters of using 2-in-1s as their primary device in 2013. Since then, deployment of 2-in-1s has expanded to other groups in the enterprise, with nearly 15,000 devices currently in use. Today, employees choose the 2-in-1 more than 25 percent of the time for their refresh.

To evaluate how well the 2-in-1 fits the needs of our employees, we conducted a broader employee survey in early 2015 and studied examples of 2-in-1 device usages.

Employee Survey Yields Useful Insights

The goal of our 2015 survey was to determine how employees use their 2-in-1 devices at work. The survey explored the following topics:

- How satisfied are employees with their 2-in-1?
- Is the 2-in-1 easy to use?
- Is it important to be able to work in both laptop mode and tablet mode?
- Is laptop mode equivalent to using a regular laptop?
- Would employees choose a 2-in-1 again for their next refresh?

Out of 2,000 surveys sent, we received over 500 responses, amounting to a 26-percent return rate. Survey respondents were a mix of managers and individual contributors from 10 business groups worldwide.

We also asked if the 2-in-1 saved employees time, and, if so, what features contributed to these time savings. Those employees who indicated the 2-in-1 saved them time commented on these features: easy on and off, ability to use the device on the go, touch capabilities, screen sharing, and battery life.

Other employees, especially those who focused on content creation or detailed analytics, had slightly less favorable ratings for the 2-in-1s. However, it is notable that of all respondents surveyed, these were the results:

- 66 percent of respondents believed that working in laptop mode on the 2-in-1 was equivalent to working on a regular laptop.
- 65 percent found the 2-in-1 easy to use.
- 22 percent use their 2-in-1 in tablet mode occasionally (25 percent or more of the time). Of those, 30 percent use their device in tablet mode often (60 percent or more of the time).
- 50 percent would choose a 2-in-1 again for their next refresh.
- Overall, employees were as satisfied with their 2-in-1 as they were with other devices they used.

“I love the flexibility of my Ultrabook™ 2-in-1. Using the stylus for quick meeting notes enables me to engage more directly with customers rather than being hidden behind a screen, and then I can transform my system back to laptop mode for more detailed analysis back at my desk.”

— Platform Marketing Manager

Top 5 Time-Saving Features of 2-in-1 Devices

Employees said the following 2-in-1 device features saved them the most time:

- Fast start-up and shut down and prompt resume
- Portability
- Touch capabilities (no mouse and quick scrolling)
- Ability to use screen sharing or whiteboard sketching
- Longer battery life

We also learned that there was no difference in responses based on the form factor of the 2-in-1 that employees used. A sampling of 2-in-1 form factors in use at Intel includes the twist and the fold.

These survey results revealed that the 2-in-1 enhanced the productivity for employees who are highly mobile or who are more focused on content consumption rather than creation. We also recognized that other devices may better fit the needs of other employees—underlying the importance of continuing to offer multiple device types and form factors for refresh. For example, desktop and mobile workstations offer higher processing and graphics-rendering performance suitable for more intensive tasks, such as analytics.

Most Common 2-in-1 Devices in Use at Intel



Fold

Starts as a traditional clamshell, but screen twists around 360-degrees as well as bends back into tent mode; also converts to a tablet configuration.



Twist

Starts as a traditional clamshell, but screen twists around 180-degrees to share the display with someone sitting opposite the user; also converts to a tablet configuration.

2-in-1 Device Case Studies

Along with the 2015 survey, we identified additional examples of Intel use cases that are well suited to the 2-in-1.

Sales and Marketing

We found that employees in the sales and marketing groups, who often travel or work outside the office, realized the most benefits from their 2-in-1s. These employees cited the most positive responses in the following areas:

- 73 percent found that using the 2-in-1 laptop mode was equivalent to working with a regular laptop.
- 69 percent would select a 2-in-1 again for their next refresh.
- 63 percent said their experience with the 2-in-1 is better than with their previous laptop.
- 53 percent complete tasks using tablet mode.

These employees tended to rely on tablet mode for consumption of content rather than creation. Their tasks typically included reading or reviewing documents, spreadsheets, or presentations; watching videos, training classes, or webcasts; and reading email.

Manufacturing

Manufacturing employees were among the first adopters of using 2-in-1s as their primary device. A 2014 survey of these employees produced overall favorable usability ratings as well as insight into the use cases where the 2-in-1 worked particularly well.

The survey revealed that employees who work both inside and outside the factory preferred a tablet configuration in several cases, such as when attending a meeting, performing tool maintenance, working in the field, or consuming content, such as specifications and procedures. In response to

the survey, manufacturing employees noted that “The tablet is important for reading real-time procedures and specs while performing maintenance” and “It helps auditing configuration of tools in the fab. In tablet mode, you can refer to an image or document while walking around the tool.”

Employees preferred the laptop configuration (with keyboard) for sedentary tasks, such as extensive data entry and data analysis.

Campus Recruiting

A group of Intel's human resources managers visit over 30 colleges and universities several times a year, meeting with up to 30,000 students throughout the year. During these visits, the managers meet with students to educate them about opportunities at Intel, recruit for enterprise talent, and gather data from students.

In the past, these managers used tablets and an app to gather basic information from students. Last year, they switched to a popular 2-in-1 device after discovering that it offered greater productivity benefits. In particular, the 2-in-1 offers versatility: tablet mode enables students to fill out information while standing in lines, and the managers use laptop mode and the full keyboard for regular computing and lengthier inputs.

Meeting with 600 to 700 students per session, one human resources manager said that students are responding positively to the 2-in-1. The students find the 2-in-1s “cool” and appreciate the opportunity to view and use the latest technology.

Air Shuttle

Intel offers employees flight service between major Intel campuses. The air shuttle service offers Wi-Fi* and loaner 2-in-1s to employees during these flights.

This loaner program gives employees a chance to experience 2-in-1 devices and the latest in Intel® architecture, providing a “try before you buy” opportunity so that employees can decide whether a 2-in-1 is the optimal choice for their next refresh. Employees can experience the device and decide for themselves how its features, such as the touch pad and compact size, work for them.

The 2-in-1 also enables employees to stay online and productive throughout their flight time, with the tablet mode enabling employees to work comfortably in a small physical space.



Field Report: What Intel Employees Say about 2-in-1 Devices

Below is a sampling of employee responses to an open-ended question about how they perceive their 2-in-1s. These responses confirm that some populations enjoy significant benefits.

- “Lighter, more portable, easier access to data and e-mail.”
- “I think tablet mode would be more useful if more apps that I used were ‘tablet’ oriented.”
- “It saves me time by being able to appropriately share my screen without connecting to a projector, by portability, by touch screen, by size, and by ability to carry anywhere.”

“The 2-in-1 has been a life saver.”

— Intel human resources manager, during an on-campus recruiting session

Conclusion

For the past two years, we have offered the Ultrabook 2-in-1 as a refresh option, envisioning that this device type could increase employee productivity, lower total cost of ownership, and satisfy employee preference for touch-enabled devices. Since then, usage of the 2-in-1 has grown from 1,500 to 15,000 employees.

An earlier survey conducted with manufacturing technicians and engineers produced overall favorable usability ratings. In our most recent survey and case studies, we have learned that employees are satisfied with the device and find it easy to use. In particular, highly mobile employees and sales and marketing employees realize the most benefits from their 2-in-1s. These employees report substantial tablet use, greater satisfaction with laptop mode, and a willingness to choose a 2-in-1 again. As we develop more enterprise touch applications, we anticipate that more employees will find greater value in the dual modes that the 2-in-1 provides.

We will continue with our current strategy of offering employees the option to choose a 2-in-1 as their primary device. As the workplace evolves and new ways of working emerge, we will also continue to evaluate the device types and form factors we offer, making sure that employees have access to the right device for their needs and that the device provides the manageability and security IT departments demand.

For more information on Intel IT best practices, visit www.intel.com/IT.

Receive objective and personalized advice from unbiased professionals at advisors.intel.com. Fill out a simple form and one of our experienced experts will contact you within 5 business days.

IT@Intel

We connect IT professionals with their IT peers inside Intel. Our IT department solves some of today's most demanding and complex technology issues, and we want to share these lessons directly with our fellow IT professionals in an open peer-to-peer forum.

Our goal is simple: improve efficiency throughout the organization and enhance the business value of IT investments.

Follow us and join the conversation:

- [Twitter](#)
- [#IntelIT](#)
- [LinkedIn](#)
- [IT Center Community](#)

Visit us today at intel.com/IT or contact your local Intel representative if you would like to learn more.

Related Content

Visit intel.com/IT to find content on related topics:

- [Accelerating Deployment of Touch-enabled Business Ultrabook™ Devices paper](#)
- [Factory Mobile Computing Proves Enterprise Value of 2-in-1 Devices paper](#)
- [Refresh Cycle Still Relevant as the IT Landscape Evolves paper](#)

Intel technologies' features and benefits depend on system configuration and may require enabled hardware, software or service activation. Performance varies depending on system configuration. Check with your system manufacturer or retailer or learn more at intel.com.

THE INFORMATION PROVIDED IN THIS PAPER IS INTENDED TO BE GENERAL IN NATURE AND IS NOT SPECIFIC GUIDANCE. RECOMMENDATIONS (INCLUDING POTENTIAL COST SAVINGS) ARE BASED UPON INTEL'S EXPERIENCE AND ARE ESTIMATES ONLY. INTEL DOES NOT GUARANTEE OR WARRANT OTHERS WILL OBTAIN SIMILAR RESULTS.

INFORMATION IN THIS DOCUMENT IS PROVIDED IN CONNECTION WITH INTEL PRODUCTS AND SERVICES. NO LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE, TO ANY INTELLECTUAL PROPERTY RIGHTS IS GRANTED BY THIS DOCUMENT. EXCEPT AS PROVIDED IN INTEL'S TERMS AND CONDITIONS OF SALE FOR SUCH PRODUCTS, INTEL ASSUMES NO LIABILITY WHATSOEVER AND INTEL DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY, RELATING TO SALE AND/OR USE OF INTEL PRODUCTS AND SERVICES INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT.

Intel and the Intel logo are trademarks of Intel Corporation in the U.S. and other countries.

*Other names and brands may be claimed as the property of others.

Copyright © 2015 Intel Corporation. All rights reserved. Printed in USA

 Please Recycle

0615/JGLU/KC/PDF

