

## WHITE PAPER

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# The Economic Impact of Microsoft Windows Vista in Massachusetts

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December 2006

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## IN THIS PROFILE

This profile quantifies the forecasted economic impact the Microsoft Windows Vista operating system will have in Massachusetts in its first year of shipment. The impact is seen in IT employment and revenues to local firms. It also addresses the impact of IT in general, software, and the Microsoft ecosystem on the local economy.

The research is specific to Microsoft Windows Vista and, by design, does not look at the economic impact of other operating systems.

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## EXECUTIVE SUMMARY

The availability of Windows Vista, Microsoft's first major new operating system released for PCs since Windows XP appeared in 2001, began in late 2006 with the launch of an enterprise version for selected customers and will continue through 2007.

For Microsoft, this launch was a major event — the Windows client operating system accounts for 30% of Microsoft's revenue and 60% of operating income<sup>1</sup>.

But Windows Vista's impact on the market will reach far beyond Microsoft, driving revenues and growth for many of the 1 million IT companies worldwide that sell hardware, write software, provide IT services, or serve as IT distribution channels.

The IDC research in this profile indicates that:

- ☒ Within its first year of shipment, IDC expects Windows Vista to be installed on more than 90 million computers worldwide and more than 1 million computers in Massachusetts.
- ☒ In 2007 more than 6,500 IT companies in Massachusetts will produce, sell, or distribute products or services running on Windows Vista and employ more than 20,000 people. Another 35,000 people will be employed at IT-using firms installing, servicing, and supporting Windows Vista or designing, installing, servicing, and supporting software that works with Windows Vista.

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<sup>1</sup> Microsoft fiscal 2006 year-end figures.

- ☒ This means that in Massachusetts, where the ecosystem built around Microsoft software involves 120,000 workers, Windows Vista-related employment will reach 18% of total IT employment<sup>2</sup> in its first year of shipment.
- ☒ While some of this Windows Vista-related employment will shift from Windows XP-related employment, 65% of the *growth* in Windows-related employment will be driven by Windows Vista. Windows-related employment is expected to jump by nearly 5,000 jobs.
- ☒ For every dollar of Microsoft revenue from Windows Vista in 2007 in Massachusetts, the ecosystem beyond Microsoft will reap more than \$18 in revenues. In 2007 this ecosystem should sell more than \$2 billion in products and services revolving around Windows Vista.
- ☒ Microsoft partners in Massachusetts are expected to invest in the vicinity of \$400 million between now and the end of 2007, readying their products and services around Windows Vista and then rolling them out.

The reason Windows Vista can have such a large impact on the Massachusetts economy is the result of a logical progression: information technology has a large economic impact, the software sector contribution to that impact is more significant than indicated by the sales of software packages alone, and more than half of all software runs on Microsoft operating systems.

Thus, the widespread and relatively rapid adoption of Windows Vista will not only bring economic gain to Microsoft, but also to Massachusetts.

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## **BACKGROUND TO THIS STUDY**

Since 2002, IDC has been conducting studies on the economic impact of IT, software, and the Microsoft ecosystem and partner community on local economies. This impact comes in the form of job creation, company formation, and increased IT spending. IDC has developed an Economic Impact Model (EIM), which ties local IT spending to local economic metrics and now covers more than 70 countries and more than 10 states. The model output — jobs, GDP contribution, etc., — has been calibrated through validation with local government sources. The economic impact and reach of the Microsoft ecosystem, which we call the Microsoft Footprint, have been studied in more than 40 countries and 10 states since 2004.

In 2006, Microsoft asked IDC to predict the economic impact of the Windows Vista client operating system during its first year of shipment. This study is an output of that request, and is based on the EIM and Microsoft Footprint methodology. A detailed description of methodology and definitions is available as the last section of this profile.

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<sup>2</sup> See Definitions and Methodology section for a description of IT-related and Windows Vista-related employment.

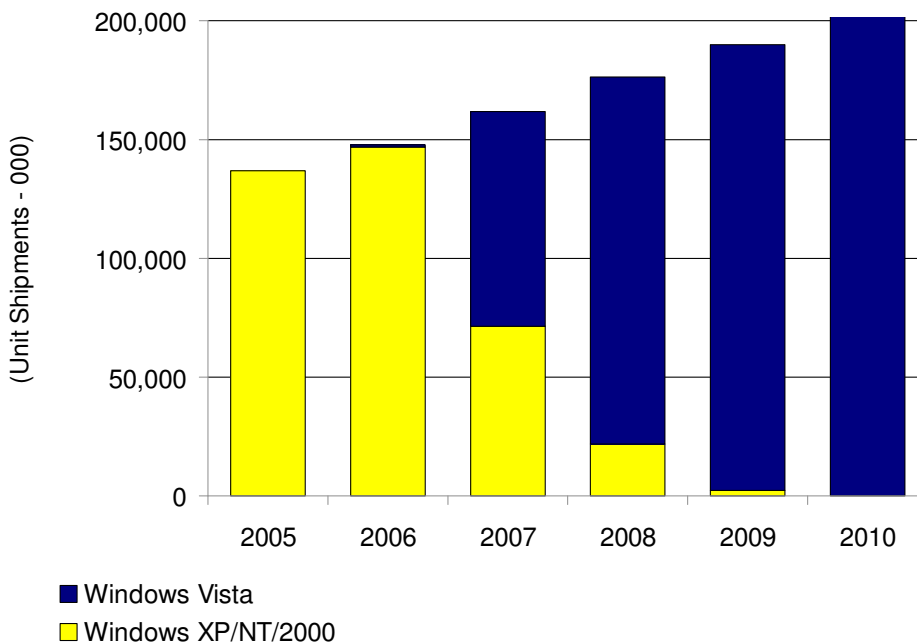
## WINDOWS VISTA LAUNCH AND ADOPTION

The official launch of Windows Vista took place in the United States on November 30, 2006. At that time it was made available to business users; consumer versions followed quickly in early 2007.

Figure 1 shows IDC's published forecast of Windows Vista unit shipments worldwide by year compared to Windows XP, NT, and 2000.

**FIGURE 1**

Microsoft Client OS Forecast — New License Shipments



Source: IDC Windows Vista Economic Impact Study, 2007

On a worldwide basis, IDC forecasts more than 90,000,000 units of Windows Vista will ship in 2007. In Massachusetts, that means more than 1 million units should be shipped, driving more than \$100 million in revenue to Microsoft.

In the scheme of total IT spending, Microsoft's Windows Vista revenue will be small — about 1% of total IT spending in Massachusetts in 2007 and less than 4% of total spending on software. But Windows Vista means more than revenue to just Microsoft. It will also drive revenue for hardware companies, other software companies, service firms, and channel firms.

To understand this Windows Vista "footprint" requires first understanding the IT footprint on the Massachusetts economy, the software footprint on IT, and the Microsoft footprint on software.

## THE IMPORTANCE OF IT AND SOFTWARE

Before Silicon Valley there was Route 128, Massachusetts. The state's high tech routes go back beyond Digital Equipment Corporation to Harvard and the invention of the Whirlwind Computer, to MIT and the invention of core memory, to the coining of the term "software bug," and the beginning of the packaged software industry. It ranks third among the states in R&D per capita, and second in venture capital investments. Its colleges and universities pump out graduates that populate high tech companies around the world, and, while it only accounts for 2% of the nation's population, it accounts for more than 3% of IT-related employment. More than one in 10 workers is in an IT-related job.

In 2007, Massachusetts's IT landscape looks like this:

- ☒ IT spending, \$13 billion
- ☒ Packaged software spending, \$3.5 billion,
- ☒ Hardware spending, \$4 billion
- ☒ Services spending, \$5.5 billion
- ☒ Packaged software shipped (by dollar value) that runs on Windows, 50%
- ☒ IT employment, 320,000
- ☒ Software-related IT employment, 210,000

Overall IT spending is expected to grow 4%, with spending on packaged software is expected to grow 7% or three times spending on hardware.

### ***The software footprint***

On a worldwide basis, IDC forecasts that in 2007 packaged software will account for 21% of total IT spending. In Massachusetts, that will be 27%. That's spending on operating systems, applications, and development tools for everything from ultra portable computers to large mainframes.

But this software generates related activity. People in service firms install, integrate, support, and train others on software. People in computer stores, system resellers, and distribution companies spend time selling and delivering software.

Because software is more complex to sell, service, and support than hardware, dollar for dollar, software generates more downstream economic activity than hardware.

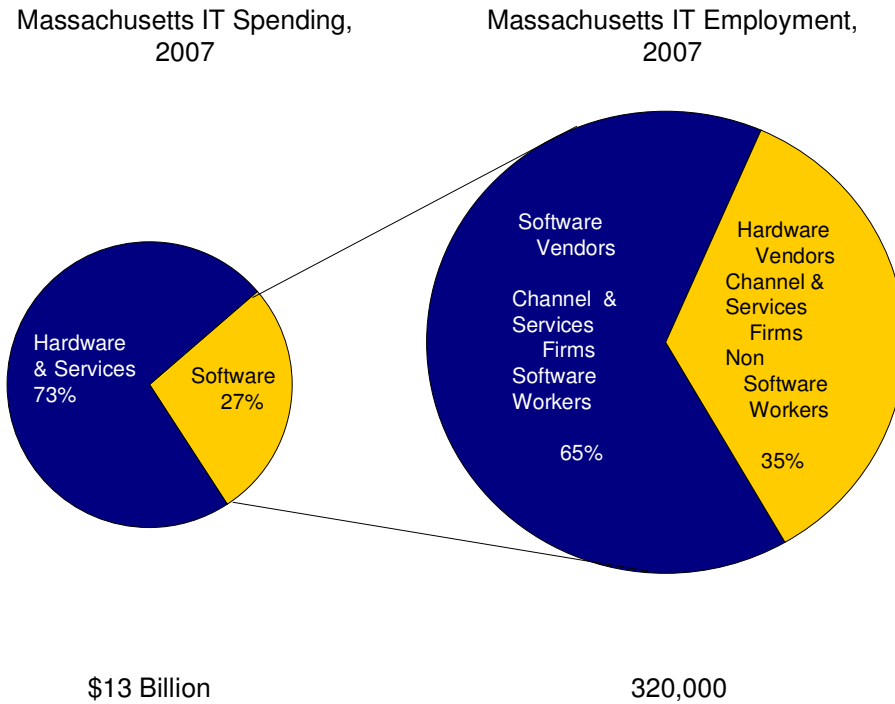
IDC's analysis of the IT services market shows that for every dollar of packaged software sold, there is another \$1.25 in revenue to IT service firms. That software revenue and additional services revenue then drives revenue in the distribution channel. These multiple revenue streams pool to help fund employment.

Figure 2 shows how spending on software compares to employment driven by software. In short, while packaged software accounts for 27% of IT spending in the Massachusetts economy, it drives 65% of IT employment.

This is one of the reasons that Windows Vista can have a much larger impact on an economy than Microsoft's revenues alone.

**FIGURE 2**

Software's Outsized Influence



Source: Windows Vista Economic Impact Model, 2007

Over time, this impact of software will actually increase as hardware spending becomes a smaller percentage of IT spending and as more and more hardware production takes place overseas.

This is good news for Massachusetts. Over the next four years software-related IT employment should grow by almost 30,000 jobs and be the sole reason IT-related jobs increase at all.

**The Microsoft Footprint**

In the way that software sales drive economic employment outside the sector itself, Microsoft software sales also drives economic activity outside of Microsoft.

Microsoft partners and OEMs sell PCs and servers running Windows; software vendors write applications that run on Windows using Microsoft application development tools; retail outlets and resellers employ people to sell and distribute these products; and service firms install and manage Microsoft-based solutions, train

consumers and businesses on Microsoft products, and service customers for their own applications.

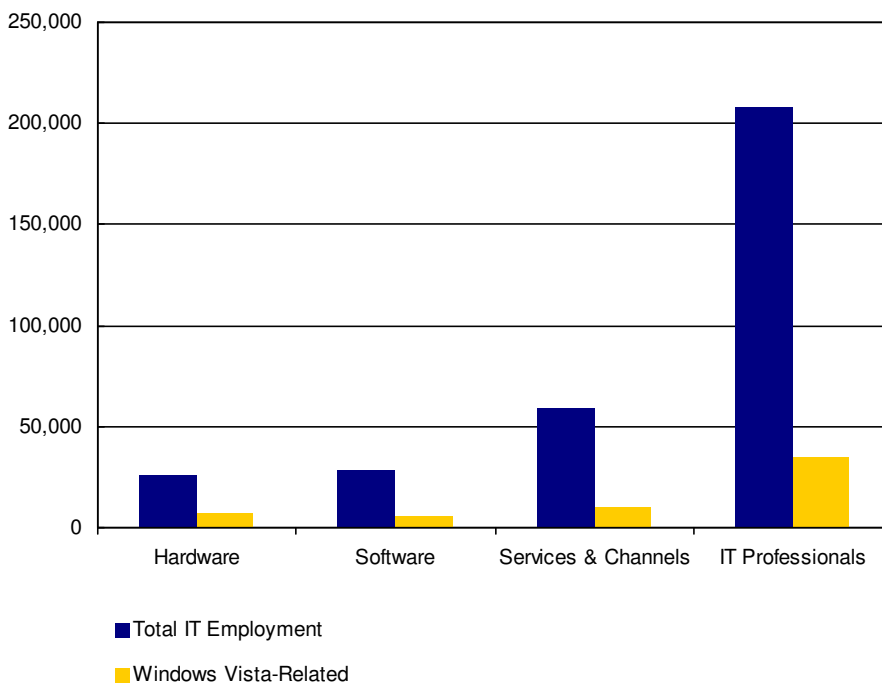
This ecosystem that has built up around Microsoft software is surprisingly big. Last year, for instance, IDC estimates that 38% of total IT-related employment was Microsoft-related and that the ecosystem around Microsoft sold nearly \$4 billion worth of goods and services in Massachusetts

## THE IMPACT OF WINDOWS VISTA

Applying the same methodology used to determine software-related employment, IDC has determined Windows Vista-related employment. As a subset of the software market, Windows Vista will drive a subset of employment. As an operating system, however, it will drive a larger share than the average application package or development tool would.<sup>3</sup>

**FIGURE 3**

Massachusetts Windows Vista-Related IT Employment



Source: IDC Windows Vista Economic Impact Study, 2007

Figure 3 shows how Windows Vista-related employment compares to total IT employment. In Massachusetts 18% of IT employment — nearly 60,000 — will be Windows Vista-related in its first 12 months of shipment.

<sup>3</sup> The methodology entails examining 20 categories of IT spending and using IDC published research to estimate the percentage that will run on or support Windows Vista in 2007. This determines the subset of IT spending that is reliant on Windows Vista, which in turn is used to estimate Windows Vista IT employment.

## THE WINDOWS VISTA EFFECT

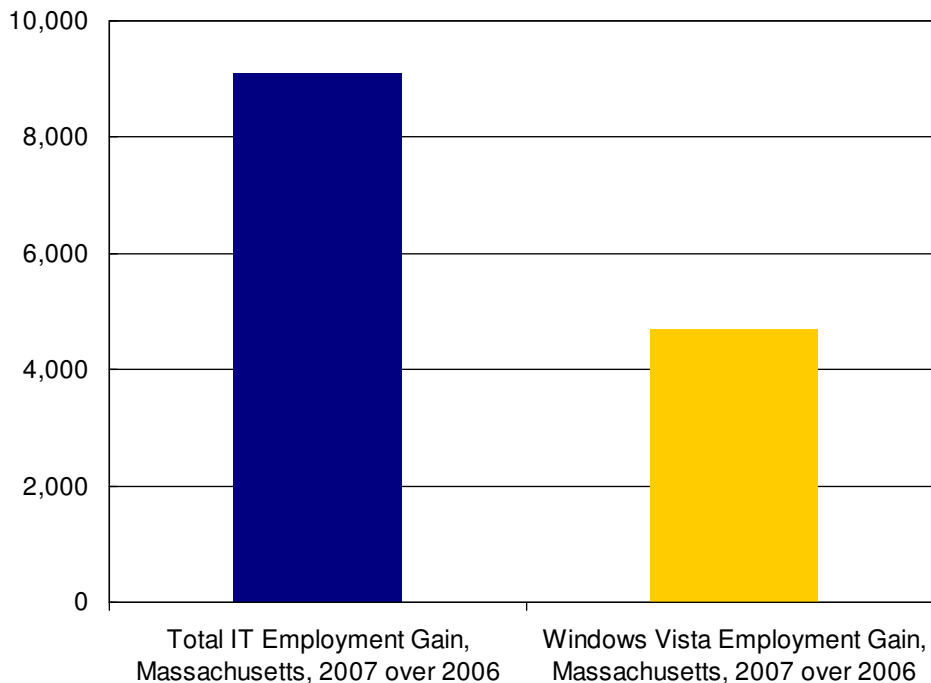
The methodology so far only depicts the total employment related to Windows Vista in 2007. But how does Windows Vista's economic impact compare to the impact of its predecessor client operating systems in 2006? Is there a significant net gain, or economic "bounce," from Windows Vista?

To determine the answer, IDC applied the same economic impact methodology it used on Windows Vista in 2007 to the other Windows client operating systems in 2006 to obtain a baseline of Windows client-related employment.

Figure 4 shows *net difference* between the economic impact of Windows Vista in 2007 compared to its predecessor client operating systems in 2006 in terms of employment. Windows-related employment is expected to jump by nearly 5,000 jobs.

**FIGURE 4**

The Windows Vista Effect, 2007



Source: IDC Windows Vista Economic Impact Study, 2007

While some of this gain would likely happen as a result of general market growth, between 2006 and 2007 Windows Vista's *share* of total IT employment is expected to go up by a percentage point — a big number in an IT employment base of 320,000.

Based on expected growth in overall IT employment, this share gain leads IDC to expect that approximately 65% of the gain in Windows-related employment in

Massachusetts will be specifically related to Windows Vista — growth that would not occur were Windows Vista not in the market.

Windows Vista, then, will infuse new energy into the market in its first 12 months of shipment, driving job growth and new industry revenues.

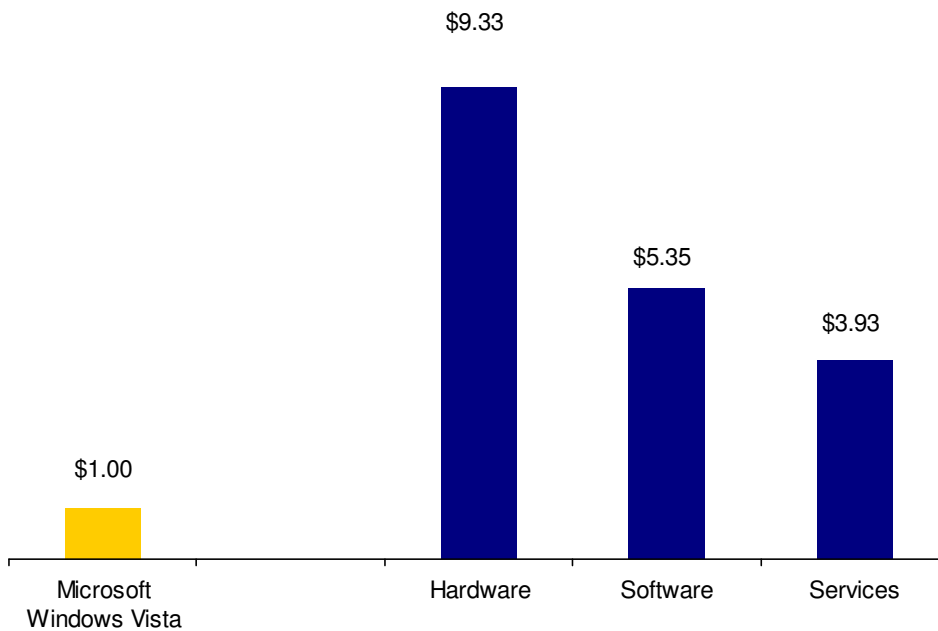
## THE REACH OF THE MICROSOFT ECOSYSTEM

While it is easy to think of Microsoft as simply the world's largest software company, it is more than that. It is an economic force that has a direct, positive impact on the locales within which it operates.

If you add up all of the spending on hardware and software that run on Microsoft operating systems as well as all of the services around installing and maintaining Microsoft applications and solutions, you quickly come up with a number much bigger than Microsoft's revenues. It grows even *larger and more significant* when compared to the subset of Microsoft revenues for operating systems.

### FIGURE 5

Windows Vista and the Massachusetts Economy



Source: IDC Windows Vista Economic Impact Study, 2007

In Massachusetts, Microsoft ecosystem-related activity is expected to be more than 18 times Microsoft's expected Windows Vista revenues in 2007, or more than \$2 billion. These are revenues of OEMs selling hardware running on Windows Vista, revenues for software packages (excluding Microsoft packages) running on Windows Vista, and services supporting Microsoft Windows Vista. Some of the hardware

revenue, much of the software revenue, and most of the services revenue accrue to local companies.

Figure 5 shows the dollar relationship between estimated Windows Vista revenues in Massachusetts and revenues on Windows Vista-enabled hardware, software, and services.<sup>4</sup> For every dollar of Microsoft Windows Vista revenues, other companies make \$18.61.

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## THE MICROSOFT PARTNER COMMUNITY

Within the Microsoft ecosystem is a subset of vendors that are recruited and supported by Microsoft as OEMs and registered partners. Depending on the level of business and commitment to Microsoft products, there are different tiers of partners. Microsoft partners are a diverse group of companies, running the gamut from large international vendors, like major PC manufacturers, to very small resellers and software entrepreneurs.

Because these companies often have a specialty in the Microsoft product line and invest in additional training and certification, they tend to receive more from their investment in Microsoft software than non-affiliated members of the general ecosystem.

With the Windows Vista launch, those partners and OEMs will now drive their own revenues by:

- Reselling Windows Vista
- Reselling other Microsoft software that runs on Windows Vista
- Selling their own software
- Selling services on the Microsoft software
- Selling services on their own software and that of others that run on Windows Vista
- Reselling partner-developed software that runs on Windows Vista
- Selling or reselling hardware that runs Windows Vista

Figure 6 shows the various permutations by which Microsoft partners, *excluding* OEM PC suppliers, will drive revenue off Windows Vista in the region, with proportions to scale.<sup>5</sup>

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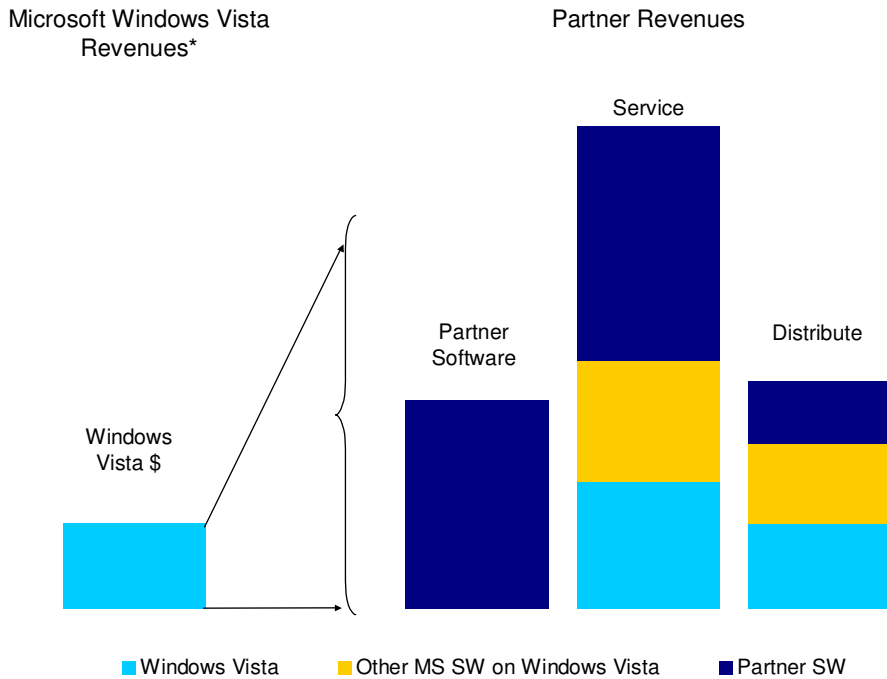
<sup>4</sup> Microsoft revenue from Microsoft applications, such as Microsoft Office, that run on Windows Vista are not included in the chart.

<sup>5</sup> The revenue allocations are based on IDC data on Microsoft partners studied using surveys conducted several times a year, most recently refreshed in 2006. The sample used for the allocations included 300 partners offering solutions running on Microsoft client operating systems.

Note that in Figure 6, Microsoft's Windows Vista revenues are depicted by the left-most column. All other columns depict: partner revenues from selling their own software that runs on Windows Vista (the second column); partner revenues from servicing either their own software or Microsoft software, including applications that run on Windows Vista and Windows Vista itself (the third column); and partner revenues from distributing such software and services (the fourth column).

**FIGURE 6**

**Windows Vista and Partner Revenues**



\*Licenses sold through partners

Source: IDC Windows Vista Economic Impact Study, 2007

All told, Microsoft partners are expected to make \$2 more per dollar of Microsoft Windows Vista revenue than the general ecosystem.

These ratios show why Microsoft partners have an incentive to invest in Windows Vista, and many have been hard at work learning the new operating system, writing applications for it, and preparing services around it. Based on standard software and services industry ratios for spending on product development, marketing, and training, Microsoft partners will have invested in the vicinity of \$400 million by the end of 2007 readying their products and services around Windows Vista and then rolling them out.

IDC research supports the idea that the more partners invest in Windows Vista, the more that investment will pay off. In a worldwide study last year of companies with the highest level of certification in Microsoft operating systems, IDC found that in 14 key performance indicators, partners with the highest certification levels had better

results than companies without that certification. This top echelon had revenue growth, deal growth, and customer growth twice that of the other baseline companies. Sales cycles and delivery cycles were a third faster. Daily billing rates and capacity utilization were 10% percent higher

Windows Vista is not just a product of Microsoft. In the market place, it will be a constellation of solutions and services delivered by an entire ecosystem.

What's more, this ecosystem is rooted, for the most part, within the state itself. In Massachusetts, IDC estimates that there as many as 6,500 companies in the Microsoft ecosystem. These are companies driving revenues and employment city by city, town by town.

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## **SUMMARY AND OUTLOOK**

The IDC research shows that the launch of Windows Vista will precipitate cascading economic benefits, from increased employment and increased taxes to a stronger economic base for those 6,500 or so local firms that will be selling and servicing products that run on Windows Vista. Nearly 60,000 IT professionals and industry employees will be working with Windows Vista in 2007.

These direct benefits — such as 5,000 *new* jobs — will help the Massachusetts economy grow, improve an already world class labor force, and support the formation of new companies. The indirect benefits of using newer software will help boost productivity, increase competitiveness, and support local innovation.

Massachusetts is still a technology-rich state and has all the ingredients for long term success, from a world class educational system and an excellent cadre of high tech professionals and academics to venture capital attention and some of the leading data centers in the world.

But this is a competitive world, with other high tech centers springing up around the world, from Bangalore, India, and Guangdong, China, to Tel Aviv, Israel, and Kuala Lumpur, Malaysia. The software industry can play a major role in helping Massachusetts stay competitive and innovative. Windows Vista will make a significant contribution.

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## **Definitions and Methodology**

### ***Economic Impact***

**IT Spending** — Spending by consumers, businesses, governments, or educational institutions on information technology, including hardware, software, services, and data networking, as measured in the IDC's *Worldwide IT Spending Trends* reports (The Worldwide Black Book). This spending *excludes* all telecommunications revenues and some smaller emerging technology areas, such as videogames (although PC gaming software *is* included). Note that IDC's sizing of IT spending is unique to IDC and differs from other measures of the high technology industry.

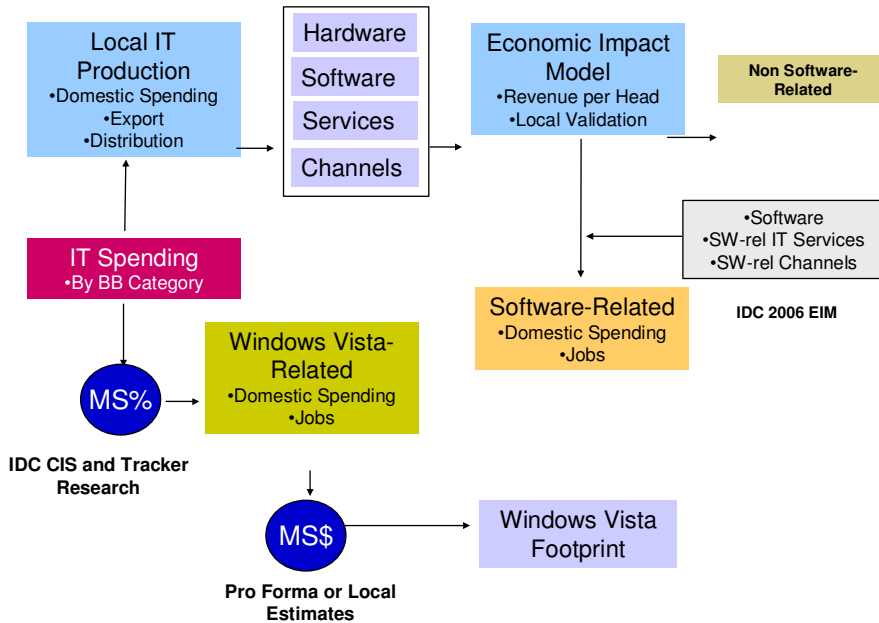
**IT Employment** — The number of people employed (full-time equivalent) in hardware, software, services, or channel firms and those managing IT resources in an IT-using organization (e.g., programmers, help desk, IT managers). The definition *excludes* employment in occupations in IT-related industries, such as Web graphics design, venture capital, trade magazine publishing, etc.

Headcounts by category were first modeled based on estimated IT revenue per employee for hardware, software, or services companies based on standard ratios, and by levels of spending per employee by technology type for channels employees and IT professionals. Note that IDC generated employee counts will rarely match headcounts from other sources, such as the American Electronics Association (AEA) or U.S. Bureau of Labor Statistics because of definitional differences. The external sources, are, however, inputs to our Economic Impact Model.

In its forecasts, IDC was conservative in how much growth in IT spending would result in IT employment — in general, if IT spending were to grow 10%, IT employment would grow something less than that. This varied by category.

**Channel revenues** — Within calculations of employment, IDC used a figure for channel revenues to drive estimates of employment. In this case, channel revenues were equated to 100% of IT spending. Most of that goes back to the hardware, software and IT services suppliers, but nevertheless that revenue funds employment. Within its tracking of IT *spending*, IDC looks only at channel mark-up, which is the difference between IT spending and vendor revenues.

Figure 7 illustrates the methodological flow of the study.

**FIGURE 7****Economic Impact Methodology**

Source: IDC, 2007

***Software-Related Revenues and Employment***

This is the percentage of spending or employment that can be associated with creating, installing, servicing, or distributing software. It was developed by first analyzing 13 service categories and using IDC research to determine the percentage of that activity devoted to software (e.g., what percentage of IS outsourcing is managing software and what percentage is managing hardware?). This led to a ratio of software spending to services spending. For the purposes of allocating employment, internal IT departments were assumed to resemble external service organizations and headcount is allocated accordingly. The allocation of channels activity to software is the midpoint between the percentage of software spending to the total of software and hardware spending and the percentage of IT services that is software related.

***Windows Vista–Related Economic Impact***

Windows Vista–related employment was derived using state-level estimates of the percentage of IT spending in 2007 by IT category for products running on Windows Vista or for services supporting Windows Vista.

- ☒ For hardware we counted newly shipped PCs that we expected to run on Windows Vista in 2007 based on IDC forecasts for Windows Vista adoption.

- ☒ For software we counted all software that we expected to be shipped that would run on Windows Vista, including Microsoft software. We started with data from the IDC Software Forecaster on revenues by software category (e.g., development tools, CRM software, collaboration tools) by operating system and adjusted this based on local country research on client software.
- ☒ For services we counted all services related to the design, deployment, management, support, and training for Windows Vista. We excluded maintenance and support on hardware running Windows Vista under the assumption that maintenance was more likely to be related to equipment failures.
- ☒ For Windows Vista–related IT professionals we used the general ratio of services to come up with estimates of headcount percentages in user organizations.

To determine the amount of Windows Vista–related IT spending per dollar of Windows Vista revenue, we took the Windows Vista–related spending percentages developed above and compared them to estimates of Microsoft Windows Vista revenue. In the final calculation, we subtracted Microsoft Windows Vista revenues and Microsoft revenues from its own software (e.g., Office 2007) that would run on Windows Vista from the total to come up with the total Windows Vista–related spending that wasn't revenue to Microsoft.

#### ***Comparison with Baseline Year (2006)***

To develop a baseline Microsoft Windows Vista footprint, we used the 2007 footprint model and plugged in IT spending values and Microsoft client operating system revenue values for 2006. We then adjusted the output for the fact that there will still be some Windows XP/NT/2000 shipments in 2007.

To understand the Windows Vista "effect," we used overall IT employment growth from 2006 to 2007 to adjust the Windows OS employment figure for 2006 to an estimate of Windows OS employment in 2007. The difference between that and the actual derived Windows Vista employment for 2007 constituted the impact Windows Vista would have on employment above and beyond normal market growth.

#### ***Partner Revenue Categories***

The figure was based on a data base of information on Microsoft partners maintained by IDC and updated using surveys several times a year. The sample used for this calculation was 300 firms that were Microsoft partners that specifically developed solutions based on Windows client operating systems — product-oriented partners, service-oriented partners, and value-added resellers platform solution providers. The data base information includes average software revenues, average services revenues, and average revenues from resale. IDC used ratios of these categories to estimate the various revenue sources of Microsoft partners using Windows Vista. The data were applied directly to the estimate for Windows Vista revenues since the intent of the exercise was to be instructive and directional.

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