



cleverdis

CeBIT 2004 - SPECIAL ISSUE

TABLET PC

optimising corporate
efficiency





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Richard Barnes *has been working as a journalist and presenter since 1980, winning, in 1984, the Pater Award for Radio Journalism in Australia and working as news editor for major networks. He moved to Europe in 1986, where he hosted and produced radio and TV programs for a number of years and has also had feature articles published in prestigious magazines worldwide. His TV reports are still regularly featured on CNN. In 1999, he joined Cleverdis as Editor-in-Chief. Today, his work is extended to running the business unit and broad implication in other communication projects. His expertise in the field means he's now often called upon to counsel leading companies in the field worldwide.*

CLEVERDIS OVERVIEW

As time goes on, the way people work is changing ever more rapidly. Sales representatives have always been itinerant, but executives are tending to use their travel time more and more for catching up on office work. Others have jobs that require them to move from place to place, as in factory/warehouse work, package delivery, field service or health-care professions.

With market conditions changing at break-neck speed, enterprises are forced to become more agile and to respond immediately to customer needs. Giving employees the possibility of having quick, secure access to essential business information maximises the company's investment in Human Resources. With employees spending significant periods away from their traditional desktop, companies now must ensure that these people, essential resources in themselves, are able to communicate and collaborate effectively. To do so, mobile devices are in more and more cases becoming essential business tools.

To this end, the Tablet PC is a fabulous new tool in the corporate environment. This form factor has been enabled thanks to a specific Operating System designed by Microsoft®, called Windows XP Tablet PC Edition. It was spawned thanks to the "clairvoyance" of Bill Gates when it comes to business software solutions for the future. In this Special Report, we hope to give you a firm overview of how to embark upon a project for the implementation of Tablet PC solutions in your business. Many of the factors that may influence your decision may be non-tangible; others should be based on as many facts as possible. Here, we will help you build logical strategies for calculating Total Cost of Ownership and Return on Investment.



Introduction

“The tablet has been a dream that I and many other people have had for years and years. Even when Paul Allen and I first talked about starting Microsoft and how we'd take computing from being something that large businesses use to moving it down to something that was personal in nature, we thought of reading and note-taking as things that would eventually be in the realm where the PC would have software that would help out with those things.”

- Bill Gates, at the launch of the Tablet PC - New York, 2002.

Microsoft sees the Tablet PC as a horizontal product; that is, anyone who spends time in meetings and wants to take notes, anybody who wants to read material in a natural way where you just hold the

device in your hands will want this product, anybody who annotates things and wants to share those things will want this product.

The company also sees that virtually every application written for the PC can be enhanced by bringing “digital ink” into the mix. Imagine somebody filling out an insurance claim form or somebody filling out a patient record that in the past would have been done on paper. There are several vertical applications that can be used on the device, and the implications are only beginning to be understood.

According to Bill Gates:

“This is just the beginning, but it's quite an amazing beginning. Our view is that this fits right in with the thing that Microsoft is all about and that is helping people realize their potential, and the fact you can go to meetings, take your notes, the fact that you can access information, share information, that is something that virtually every PC user over time we think will want to get involved with. In fact, we would

say that as we move into the rest of this decade the idea of ink as a standard data type will become as commonplace as graphics user interface did with the popularity of Windows.

By the end of the decade we'll look back and say was there ever a time where computing didn't involve having these kinds of applications, this kind of accessibility to information?

So it's just the start, but it's a start that's going to build, based on the word of mouth of the end users... and so we couldn't be more thrilled about the partnerships we've had and having achieved the milestone of launching the Tablet PC.”



Photo courtesy of Microsoft




John Brewer

John Brewer is Manager iWorker Marketing Communications – EMEA.

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interview

FOUNDED IN 1975, MICROSOFT (NASDAQ "MSFT") IS THE WORLDWIDE LEADER IN SOFTWARE, SERVICES AND INTERNET TECHNOLOGIES FOR PERSONAL AND BUSINESS COMPUTING. THE COMPANY OFFERS A WIDE RANGE OF PRODUCTS AND SERVICES DESIGNED TO EMPOWER PEOPLE THROUGH GREAT SOFTWARE ANY TIME, ANY PLACE AND ON ANY DEVICE. IN EMEA, MICROSOFT EMPLOYS OVER 12,000 PEOPLE IN OVER 55 SUBSIDIARIES, DELIVERING PRODUCTS IN MORE THAN 139 COUNTRIES AND TERRITORIES.

Cleverdis: The Tablet PC is one of the biggest wagers by Microsoft in its kick-off to the new millennium, positioned last year by Bill Gates among the top four priorities of the company. How does Europe fit into the global plan?

JB: We believe that the Tablet PC is a natural evolution of the Notebook PC and it has tremendous potential for enabling users to get

more done from more places than ever before. We're committed to working with our customers in Europe to help them realise the potential of this technology. The continuous innovation with Tablet PC hardware designs and the release of richer language support with Windows XP Tablet PC Edition have spurred a growing appeal for the Tablet PC in European markets. As we move toward our vision, there are

significant opportunities for our Tablet PC partners and our customers to create and implement new software scenarios for increased mobility and productivity. Realising potential is about us working together with them, as an industry, to create opportunity for everyone. We view Europe as being one of our key markets for Tablet PCs. When we released Tablet PC in 2002, we released versions in English, German, and French. Later on this year we will be releasing versions in Spanish and Italian. With our MUI plans, we will also have user interfaces available in additional European languages including Swedish, Finnish, Russian, Polish and Portuguese.

Cleverdis: The platform has been slow getting off the ground in Europe. What do you put this down to?

JB: The Tablet PC represents a natural evolution for notebook computers and while we don't see this happening overnight, we believe that it will achieve this level of success in the years to come. In the European region, businesses are being very careful with their technology purchases. We're seeing



Photo courtesy of Microsoft

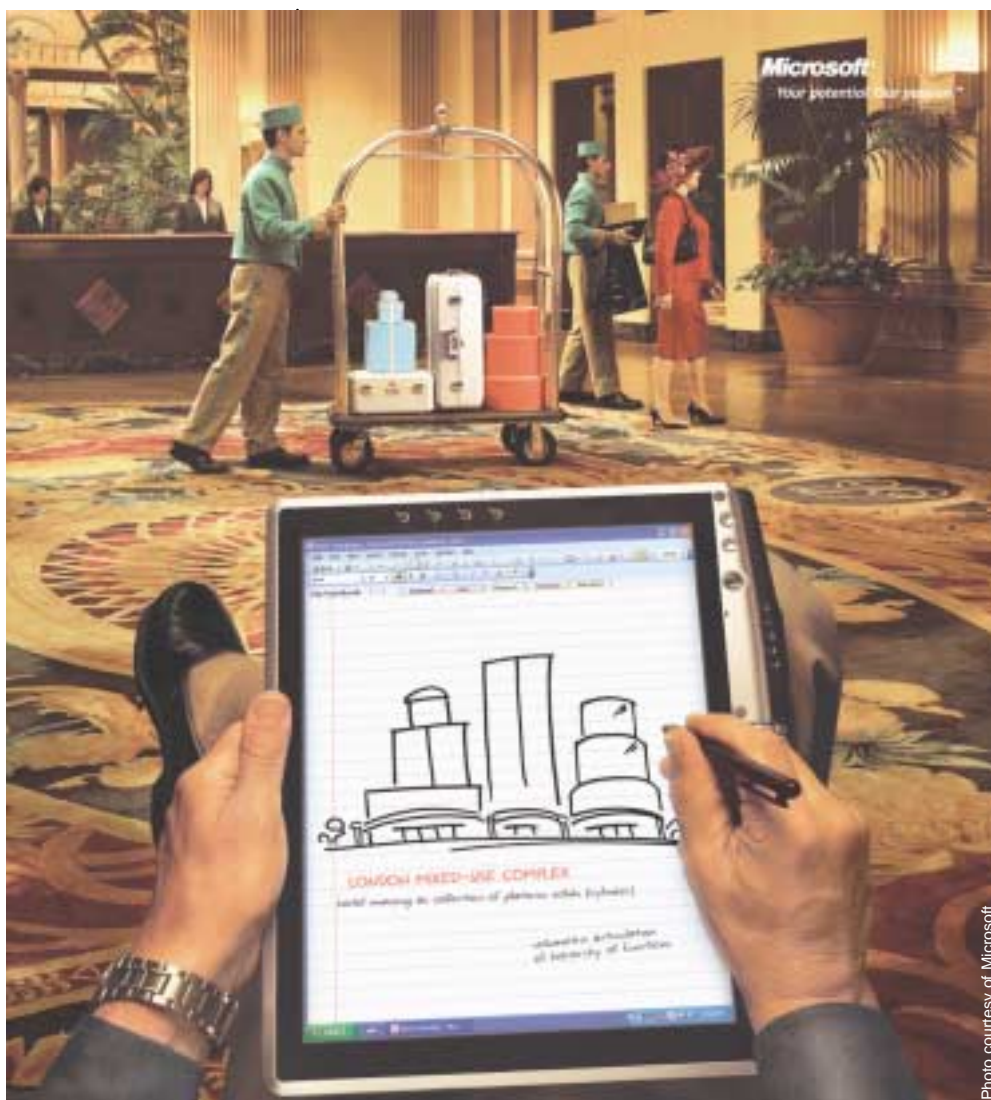


Photo courtesy of Microsoft

a number of successful trial evaluations with the Tablet PC, but large scale deployments may take from 12 to 18 months. The upcoming release of Windows XP Tablet PC Edition 2004 will deliver significant improvements in the ink-to-text input experience, we're seeing continuous innovation from Tablet PC hardware vendors and there is a healthy community of ISVs building applications for the Tablet PC. Most important, is the fact that we continue to see positive response from our customers about their experiences with the Tablet PC. All of these are indicators that we'll see success going forward.

Cleverdis: Do you feel the major corporate buyers are aware of all the real advantages of the Tablet PC when it comes to increasing efficiency?

JB: Our corporate customers see a lot of potential in the Tablet PC. It's a powerful laptop with the ability to give their workers a more mobile and versatile PC experience than ever before.

The initial responses are very positive and as they see more innovative hardware designs and more unique applications that leverage the powerful Tablet PC platform, their excitement continues to grow.

Cleverdis: How will Microsoft be marketing the Tablet PC over the next year or so?

JB: The Tablet PC will continue to be a major focus for Microsoft and we'll continue to place strong marketing efforts behind the product through our individual efforts and

through cooperative programs with our industry partners.

Cleverdis: Projections for market penetration for the Tablet PC are wildly disparate. What is your personal prediction?

JB: We are pleased with the early momentum of the Tablet PC since its introduction in November 2002. First year sales were on track with expectations coming in between 400,000 to 500,000 units worldwide. The Tablet PC offers a compelling value proposition for a growing number of customers who will be replacing their business laptops in the coming years. Corporate evaluations will still take time to play out, but believe me that we are on track to meet Bill Gates' prediction that most laptops will be Tablet PCs within a period of 5 years.



Susan Cameron

Susan Cameron is a Group Product Manager in the Tablet PC Business Unit, responsible for public relations, advertising and end user marketing. Since joining Microsoft seven years ago, Susan has led marketing initiatives for a variety of products and technologies including Windows Media and Windows 2000 Server.

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Cory Linton

As Product Manager for the Tablet PC, Cory Linton works on Product Planning and Marketing for the Windows XP Tablet PC Edition. Cory has been with the Tablet PC Marketing team for 2.5 years. Previously Linton was a Product Planner for Microsoft Word for 2 years. He joined the company in 1997 as a Legal Industry Marketing Manager.



double interview

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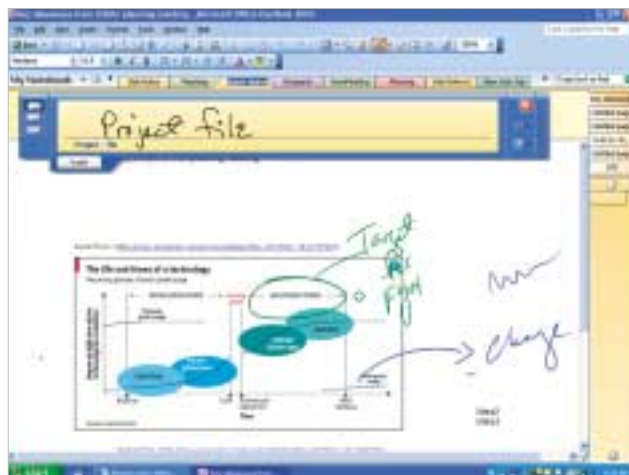
Cleverdis: What's different about Windows XP Tablet PC Edition 2004?

SC: This release, code-named Lone Star, has features that make using the pen a more natural part of computing. The primary area where customers have asked for improvements is the ink-to-text experience. We've addressed this by making it easier to insert text and improving the recognition in certain context fields. With this new version, the Tablet Input Panel (TIP) appears where you insert text, rather than down in the toolbar. The TIP includes a writing panel that extends as you write more, a comb input which allows recognition and corrections to individual characters, and an on-screen keyboard. Text appears dynamically as you write, and you have the option of making corrections prior to inserting text. The TIP in the previous version did not include character recognition and it inserted the text automatically, without giving the user the option to make corrections. In addition, we've improved the recognisers in certain context fields, such as state, city and zip code. And, developers can add "rules" for specific context fields. This is particularly useful for form-

based applications or specific industries, such as healthcare - developers can build a dictionary of medical terminology, improving the recognition in medical-based applications. Pen and ink integration in Microsoft Office 2003 and Office OneNote 2003 also gets better with Windows XP Tablet PC Edition 2004. In addition to being able to annotate on any Office document or send handwritten e-mails in Office Outlook® 2003, the new TIP makes it easier to insert text anywhere in Microsoft® Office Word, Excel or PowerPoint® 2003. Platform, or Software Developer Kit (SDK) enhancements also make it possible

for developers to integrate pen and ink in Web-based line-of-business solutions. Companies such as FranklinCovey Co. and Corel Corp. are deeply integrating pen and ink in their applications. This support makes ink as natural to use as text or any other feature.

Cleverdis: With the ROI surveys that have already been done by Microsoft, which appear very supportive of the concept, how is Microsoft going about educating corporate customers about this, and what are the main issues you're having to get around?



The new Tablet PC Input Panel coming in Windows XP Tablet PC Edition 2004 gives users better options for entering digital ink into text fields



CL: We're now working with companies who are doing sizable deployments to get some really good ROI data from them. We have lots of great content on our web site, including case studies. We are actively working with our own sales force as well as our partners' sales teams, and providing them with this information. In addition, we have a worldwide advertising campaign underway to help educate the broader base of customers on what the Tablet PC is all about. The reality is that corporations take a long time to analyse new technology and to roll it out, and we always knew that. There's the example of some very large corporations in the rollout of Windows XP. It's going to take over three years in many cases to roll it out company wide. By the time they get to the end, they'll probably spend another year analysing the next version of Windows and another three years rolling it out. They see the benefits, but it takes a long time to deploy them. Despite the conservative timelines, we are having some great successes with early deployments of the Tablet PC in advance of the typical cycle.

Cleverdis: Since Bill Gates' announcement last year and what we've seen since then, what would you say Microsoft has learned in the way you should be approaching the marketing of the device?

SC: We confirmed what we believed originally, that our primary audience is enterprise customers. Tablet PCs also have some consumer appeal but we continue to focus on the enterprise as our primary audience. The innovative design and support from OEMs and ISVs has opened new opportunities and scenarios for customers. There are specific verticals such as health care that we knew would rapidly embrace the platform, but the Tablet PC is extending the scenarios beyond what we imagined. Imagine every patient bed in every hospital having a slate-style Tablet PC hanging at the end of the bed, making it easy for the doctor to pull

up relevant information like X-rays or possible harmful drug interactions, and take actionable notes that are immediately accessible by the doctor/nurse team. This is an example of how we've learned from our customers new ways of using the Tablet PC.

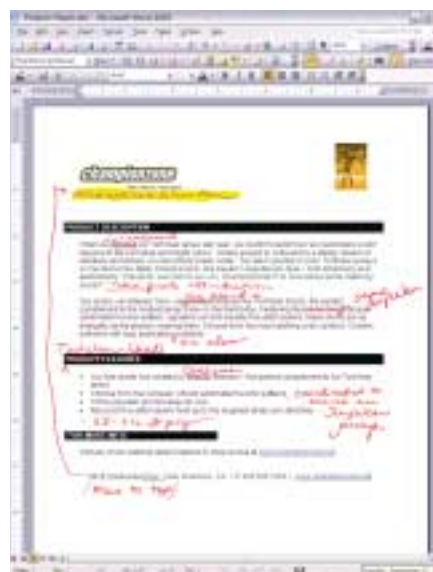
CL: It also has to be said that Lone Star... that's our internal word for it... has been developed entirely based upon feedback from users. They wanted improved ink to text and improved Office integration. So we put this together based on that. We've also learned from companies a fair amount about potential deployment. We've got a "tiger team" that goes out and works with companies to make sure they have a great deployment experience.

Cleverdis: What are the specific value points of the Tablet PC?

SC: Improved productivity as well as improved collaboration are two of the Tablet PC's specific value points. Improved productivity comes from the fact that it is a more versatile notebook. You can take notes in meetings without the obtrusiveness of a keyboard. I could be sitting here taking notes clicking on my keyboard, but I am writing with my pen on my Tablet PC in slate mode. You can check your schedule on the go. For people who travel a lot, the Tablet PC goes everywhere you go - The Tablet is so convenient to use in-flight. Given the cramped space in airplanes, you can comfortably use the Tablet in slate format without the tray table. In addition to that, an example of collaboration comes in the fact you can use OneNote to handwrite notes (and perhaps later convert your notes to text), and even record the audio of a presentation and share your notes with others immediately. If you were using a Tablet PC right now recording our conversation, you could share the audio along with your notes right away.



Microsoft Office OneNote 2003 fully supports digital ink



Edit documents more naturally in Word 2003 using a Tablet PC



Primary Benefits of Tablet PC

The Tablet PC, as the ultimate replacement for the laptop, has a number of clear advantages in this sense. Powerful and versatile, it is designed for mobile computer users who've been relying on a combination of notebook PCs, planners, spiral notebooks, handheld devices, and sticky notes to complete their work. Following are "the top ten":

USE OF MICROSOFT'S MOST ADVANCED OPERATING SYSTEM

Microsoft Windows XP Tablet PC Edition is a superset of Windows XP Professional so it provides the same power as Windows XP without any sacrifices. Tablet PC Edition has all the capabilities of Windows XP Professional, plus additional features for tablet pen based computing. And, because it uses the Windows operating system, Tablet PC will run Windows XP compatible applications.

EXTENDS THE WAY PEOPLE WORK WITH THEIR PC

Windows XP Tablet PC Edition lets the user interact with

their PC in a more natural way, incorporating the convenient, intuitive aspects of pen and paper into the PC experience. Users can write directly on the screen (with a Tablet Pen) and save their notes in their own handwriting or convert them to typed text for use in other applications. The pen can also handle common mouse and keyboard tasks like opening applications, selecting text, and displaying menus. Or, if you prefer, you can still use a mouse or keyboard with Tablet PC.

ABSOLUTE MOBILITY

Tablet PC provides everything one could expect from a mobile PC, but in a form that allows you to be productive in more situations at one's desk, in the hallway, at a meeting, or on the road. Tablet PC supports "grab-and-go" removal from a docking station and has a fast resume-from-standby time. These capabilities, combined with wireless network support, give the user greater mobility and immediate access to the full power of a PC.

TAKE NOTES ELECTRONICALLY

Windows XP Tablet PC Edition comes with Microsoft Windows Journal, a note-taking utility that lets the user create and organize handwritten notes. Windows Journal makes it easy to capture the text and drawings one would normally create using pen and paper. Advanced handwriting recognition technology lets you search your handwritten notes to quickly find what you need.

COLLABORATE EASILY AND EFFECTIVELY

Windows XP Tablet PC Edition lets the user integrate electronic "ink" into their everyday business applications such as Microsoft Word 2003, Microsoft PowerPoint® 2003, Microsoft

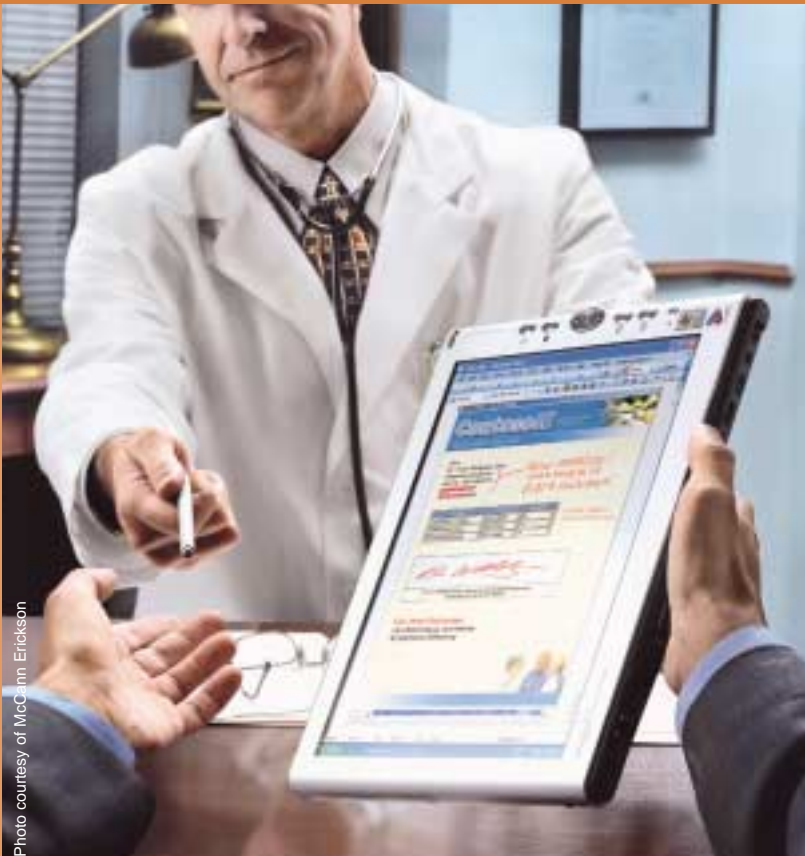


Photo courtesy of McCann Erickson



Office OneNote 2003, and Microsoft Excel 2003. Ink integration is native to Microsoft Office 2003 Editions. One can then share these handwritten documents with other PC users even if they are not using a Tablet PC. PC users with computers running the Windows 2000 or Windows XP operating systems can read your handwritten documents with the free Microsoft Windows Journal Viewer.

PERSONALISATION

Using Tablet and Pen Settings controls, the user can customise his or her Tablet PC: calibrate their pen, optimise their Tablet PC for left or right handed operation, and programme the hardware buttons of their Tablet PC to complete specific actions, such as opening an application or changing screen orientation from landscape to portrait.

EXTENDING APPLICATIONS WITH DIGITAL INK HANDWRITING

Windows XP Tablet PC Edition is a powerful platform for developers and the foundation for a new generation of applications with pen and ink capabilities. For example, Windows XP Tablet PC Edition has powerful but simple ink controls and application programming interfaces (APIs). These APIs allow software developers to extend existing applications with pen and ink capabilities and to develop new applications using this technology.

EASY DEPLOYMENT AND MANAGEMENT

Windows XP Tablet PC Edition includes the advanced deployment technologies and policies included in Windows XP Professional, making it easy to deploy and manage Tablet PCs in the corporate environment.

PROVIDES A GLOBAL BUSINESS SOLUTION

Windows XP Tablet PC Edition is localised into English, German, French, Japanese, Chinese (Simplified and Traditional) and Korean. In the future, more languages will become available.

PROVIDES HIGH LEVELS OF PROTECTION FOR CRITICAL DATA

Windows XP Tablet PC Edition offers all the security features of Windows XP Professional, including the Encrypting File System (EFS) security feature and the access control feature. Tablet PC also supports secure log on to a network using a single CTRL+ALT+DEL hardware button.

HARDWARE PARTNERS SOFTWARE PARTNERS

Acer, Inc.	Adobe Systems, Inc.
AOpen, Inc.	Agilix Corporation, Inc.
Aplux Communications, Ltd.	Alias Wavefront
Compal Electronics, Inc.	Allscripts Healthcare Solutions
Dixons Group, PLC	Autodesk, Inc.
Electrovaya, Inc.	Avanade, Inc.
Hewlett-Packard Company	BAE SYSTEMS
First International Computer, Inc.	ColeConnect
Fujitsu	Colligo Networks, Inc.
Fujitsu Siemens Computers	Corel Corporation
Kontron AG	Criterion Corporation
Motion Computing, Inc.	Dassault Group
NEC Corporation	Eclipsys Technologies Corporation
PaceBlade Technologies, Inc.	Electronic Data Systems Corporation
Quanta Computer, Inc.	ESRI
Research Machines, PLC	FranklinCovey
Sotec	Groove Networks, Inc.
Tatung, Ltd.	Hanwang Technology Company, Ltd.
Time Group, Ltd.	iSoft, Inc
Toshiba	Iteration Software, Inc.
Twinhead Corporation	Keylogix International, Ltd.
VIA Technologies, Inc.	Leszynski Group, Inc.
ViewSonic Corporation	LexisNexis
Viglen, Ltd.	Mindjet
WalkAbout Computers	SAP
Wistron Corporation	ScanSoft, Inc.
Xplore Technologies Corporation	Siebel Systems, Inc.
	Stentor, Inc.
	WebEx Communications, Inc.
	Zinio Systems, Inc.



Tablet PC Market Evolution

The market for PCs is going through a major transition at the moment, something that is in fact more akin to a revolution. In the past ten years, we have seen the use of "laptop" computers becoming more popular as their displays became more attractive and practical (the onset of colour TFT-LCD), and the power to weight ratio arrived at an acceptable level.

Now, however, we have arrived at a very exciting point in time, where the power of a laptop is generally totally adequate for any office application. Add to this the new "wireless revolution" thanks to "WI-FI", as well as the advent of lower priced TFT-LCD screens, and there is no longer any need to be attached to the desktop.

With a reduction in the price of laptops across the board, and major marketing moves by all the major manufacturers to promote mobile computing, the days

of desktop PCs in the total domination of the corporate scene are numbered.

The growth in the laptop market is an indication that more and more PC users are looking for mobile solutions. Microsoft is focused on software development that will continually improve the mobile experience for PC users. The Tablet PC is part of this focus.

THE FUTURE, ACCORDING TO CLEVERDIS

It has been proven in recent times (i.e. since the official launch of the Tablet PC by Bill Gates at the end of 2002) that it is difficult to make predictions in this field.

Through our own contacts with vendors, distributors, corporate buyers and analysts, we contend the following:



Photo courtesy of Microsoft



- Tablet PCs, as part of an overall boom in mobile computing, will begin to find their mark. Two major factors will influence this in the next twelve months. The first is that of a major drive by Intel in the mobile market, coupled with a concerted effort by distributors to push into this sector, which will have a subsequent flow-on effect into the Tablet PC sector. The second is the education of resellers and end users, which, while slow to take-off, will result in a better understanding of the specific applications that can be handled by Tablet PCs. There are a number of factors that empower these machines to do much more than simple laptops. As we see the arrival of G2 Tablet PCs, and the prices of some Tablet models finally coming down to more palatable levels for the average "man in the street", volume sales will begin to increase, and will follow a highly uneven growth curve over the next two years, until such time as the buying public grasps the Tablet PC as an entity on its own.

CORPORATE INTEREST

While many corporate or industrial purchasers in Europe are indeed interested in Tablet PCs to replace either notebooks or other pen-based devices, many are not acting quickly to buy, preferring to evaluate a few machines in test situations from a few months to anything up to a year. Only then will they really be able to calculate Return on Investment and decide to make bulk purchases.

DISPLAYSEARCH FORECASTS MAJOR TABLET INCURSION INTO LAPTOP TERRITORY

In terms of market inroads, we tend to concur with the projections of Texas-based DisplaySearch, who project around 17% penetration by the end of 2006. According to DisplaySearch founder and president, Ross Young: *"We recognise there is a strong possibility that tablet-style computing offers a substantial opportunity to grow even faster, particularly considering the multi-function capability of the convertible Tablet PC design."*

REMOTE WORK ON THE RISE

In general, the trend in Europe is increasing towards working away from the office setting...at least part of the time. Again, this trend lends itself to the movement towards the Tablet PC solution. They're "teleworking" - working from coffee shops, pubs, airport lounges or hotel lounges. They're working from hotel rooms with broadband in an increasing number of locations. People are very simply spending more and more time on the

road while working.

To this end, a study has recently been released by the European Commission – called SUSTEL (Sustainable Teleworking). The full study is available in PDF form on their website: www.sustel.org. Their study ran for two years, during which time they looked across a number of European countries at 30 companies that have teleworking projects in place, and it's very interesting, because it shows that there are tremendous benefits.

CHART 1: FORMS OF PERFORMANCE IMPROVEMENT AMONG TELEWORKERS - SUSTEL 2003

Form of performance improved	Denmark - Public	Germany - Continantale	Italy - Lombardia	Netherlands - Oracle	UK - BT	UK - BAA
Higher Productivity	63.8%	80.9%	65.4%	69.6%	60.1%	72.2%
Better quality of work	68.1%	66.2%	76.9%	65.2%	56.9%	66.7%
Higher total output	21.3%	42.6%	46.2%	34.8%	50.5%	38.9%
More creative work	2.1%	29.4%	26.9%	30.4%	28.7%	50.0%
Other effects on performance	-	5.9%	-	4.3%	5.3%	-

CHART 2: RESPONDENTS ABLE TO WORK WHEN PREVENTED FROM REACHING A WORK LOCATION - SUSTEL 2003

	Denmark - Public	Germany - Continantale	Italy - Lombardia	Netherlands - Oracle	UK - BT	UK - BAA
Yes	46.8%	30.9%	80.8%	91.3%	73.7%	72.2%
No	53.2%	69.1%	19.2%	8.7%	26.3%	27.8%

CHART 3: REDUCTION IN TIME SPENT COMMUTING (HOURS PER WEEK PER PERSON) - SUSTEL 2003

	Denmark - Public	Germany - Continantale	Italy - Lombardia	Netherlands - Oracle	UK - BT	UK - BAA
0 hours	33.3%	1.5%	-	-	7.1%	-
1-2 hours	46.7%	16.7%	3.8%	19.0%	11.2%	81.3%
3-5 hours	15.6%	37.9%	19.2%	57.1%	17.1%	18.8%
6-10 hours	2.2%	24.2%	57.7%	14.3%	41.8%	-
11-15 hours	2.2%	16.7%	7.7%	9.5%	12.9%	-
16+ hours	-	3.0%	11.5%	-	10.0%	-



Calculating TCO of Tablet PCs

We at Cleverdis take the role of educating and informing end users very seriously, and it is for this reason that we are providing you with some exceptional extracts from one of Microsoft's first White Papers based on research into how companies can calculate ROI for Tablet PC. It is our hope that the understanding of buyers about the great possibilities offered by these devices will be promoted even further this year, and that the giant leap forward by Bill Gates in launching platforms that permit their intelligent use will obtain the recognition it deserves. The report (available in its entire form (43 pages) at www.microsoft.com), entitled "Empowering Information Workers: The Financial Benefits of Windows XP Tablet PC Edition",



Photo courtesy of NEC

demonstrates that deploying Microsoft® Windows XP Tablet PC Edition and the Microsoft® Office XP Pack for Tablet PC provides capabilities that can help any organisation improve the productivity of its information workers. Of course, since the publication of this White Paper, we've seen the release of Office 2003, however the trends indicated in its findings are still valid.

Key findings of this report are the results of business value studies conducted at five enterprises that participated in the Tablet PC Rapid Adoption Program (RAP). These studies were conducted by Microsoft and assessed by Gartner Measurement, a business unit of Gartner Inc. These findings confirm that information workers will regain an average 147 hours annually due to greater efficiency in capturing, organising, and searching for information, as well as accelerated annotation and review of documents. These time savings are valued at an average of \$9,525 per information worker per year.

The following table summarises the findings of the five business value studies. The first three benefits apply to all Tablet PC users; the fourth benefit applies to information workers, who used the Tablet PC in a wireless LAN environment. These benefits represent productivity improvements gained by upgrading notebook PCs running Windows XP Professional to the Tablet PC running Windows XP Tablet PC Edition.

Organisations running Windows 2000 Professional and earlier versions of the Windows desktop operating system will experience additional benefits, which are documented in the Microsoft white paper, "Higher Yields: The Financial Benefits of Windows XP Professional." At three of the five organisations whose benefits are presented in the following table, the productivity gains enabled by use of the Tablet PC are sufficiently compelling to justify upgrading all information workers to a Tablet PC. Financial measures are based on a 2,000 hour per year work period and an average annual fully burdened salary of \$129,626 per information worker. This benefit applies only to locations with a wireless local area network (WLAN).



Tablet PC Benefits in Different Work Situations

Mobile computing benefits Enabled by the Tablet PC	Average Time per Task (Hours per user-year)		Improvements Time / Task Efficiency / Money		
	Before Tablet PC	Using Tablet PC	Hours per user-year	% Improvement Task efficiency	\$ equivalent per user-year
Capture and organise information more efficiently. Five RAP participants used digital ink and windows journal to take meeting notes instead of transcribing paper-based information.	77	47	30	39%	\$1,951
Reduce information search costs. Four RAP participants used digital and windows Journal to reduce costs and time searching for handwritten paper-based information.	96	37	59	62%	\$3,815
Accelerate information review and annotation process. One RAP participant used digital ink to annotate and add diagrams to Office documents and third-party applications.	211	153	58	27%	\$3,759
Total Average Improvement per Information Worker	384	237	147	38%	\$9,525
Improve information sharing and enhance collaboration. Two RAP participants used digital pen-and-ink computing in a wireless LAN environment to simplify and expedite routine communication tasks such as e-mail and scheduling meetings.	294	228	66	22%	\$4,278
Total Average Improvement per Information Worker (WLAN)	678	465	213	31%	\$13,803

Table courtesy of Microsoft



TABLET PC MOBILE COMPUTING BENEFITS

Cost Categories	Formulas
Information worker uses digital ink and Windows Journal to take meeting notes instead of transcribing paper-based notes	$\left(\frac{(\# \text{ of information workers} \times \text{annual information worker salary})}{\text{hours per working year}} \right) \times (\% \text{ Tablet PC users affected}) \times (\text{hours spent in meetings per year} \times \% \text{ of working year spent transcribing notes})$
Information worker uses Windows Journal to search for notes in digital ink instead of searching for handwritten paper-based notes	$\left(\frac{(\# \text{ of information workers} \times \text{annual information worker salary})}{\text{hours per working year}} \right) \times (\% \text{ of information workers affected}) \times (\text{minutes per month spent searching for notes}/60) \times 12 \text{ months per year})$
Executive assistant uses digital ink and Windows Journal to take meeting notes instead of transcribing paper-based notes of executives	$\left(\frac{(\# \text{ of executive assistants} \times \text{annual assistant salary})}{\text{hours per working year}} \right) \times (\% \text{ executive assistants affected} \times \% \text{ of working year spent transcribing notes})$
Information worker use WLAN or LAN connectivity to spend less time searching for or uploading data to network	$\left(\frac{(\# \text{ of executive assistants} \times \text{annual assistant salary})}{\text{hours per working year}} \right) \times (\% \text{ of information workers who engage in task}) \times (\text{average hours spent per week on task} \times 50 \text{ weeks per working year})$
Information worker use WLAN or LAN to spend less time in routine messaging and scheduling tasks	$\left(\frac{(\# \text{ of executive assistants} \times \text{annual assistant salary})}{\text{hours per working year}} \right) \times (\% \text{ of information workers who engage in collaboration and communication tasks}) \times (\text{average hours spent per week on task} \times 50 \text{ weeks per working year})$
Increase productivity through "grab and go"	$\left(\frac{(\# \text{ of information workers} \times \text{annual information worker salary})}{\text{hours per working year}} \right) \times (\% \text{ of information workers who use Tablet PC quick start-up capabilities}) \times (\text{average hours spent per week on task} \times 50 \text{ weeks per working year})$
Information worker spends less time in data sharing and document revision tasks and in real-time communications	$\left(\frac{(\# \text{ of information workers} \times \text{annual information worker salary})}{\text{hours per working year}} \right) \times (\% \text{ of information workers who engage in electronic collaborations and communications tasks}) \times (\text{minutes spent on tasks per week} \times \text{number of tasks per week}/60) \times 48 \text{ weeks per working year})$

RETURN ON INVESTMENT

When corporations are looking at investing in mobile devices, whether they're Tablet PCs, PDAs or Smart Phones, one of the first things they want to do is try to calculate Return on Investment for the products. How can they do this?

There are some fairly straightforward areas where the ROI on mobile enabling or remote working can be identified very easily. If you have blue collar or white collar workers in the field, doing things that waste time like filling-in papers, driving to the office to get their workload for the day, then going out, filling in their papers after every job, and having to drive back to the office at the end of the working day to deliver them and have them manually transcribed and put into the system, that's a very inefficient process. By allowing field workers to get access to their job tickets over a mobile device, you've eliminated the drive to the office to pick up the paper. By allowing them to fill in the job ticket on the mobile device and have it sent automatically to the system, you've eliminated two things.

One is all the paperwork and the second one is transcribing it into the system which is usually done by someone else and very often with errors. You've also eliminated the time of the engineer driving in to deliver those papers. This means very considerable savings. It would not be unusual to find that you've eliminated more than an hour's worth of paperwork for an engineer whose job it is to actually be servicing, repairing or building things. Other factors can be taken into account such as wear and tear on the vehicle, fuel consumption and downtime.

Studies by Gartner have shown that in some cases 25% or more of a relatively expensive engineer's time is actually taken up with driving and administration, which is not what he's hired for. Some of the highest ROI for mobile applications comes not only from the reduction of labor costs, but from better tracking and assessment of hard assets. Typically, ROI for these applications occurs in less than 18 months, and can occur in as few as three to four months, depending on the value of the hard assets.

Case Study

It is one thing to postulate situations, and sometimes another when it comes to real life. Therefore, it is highly important to consider real-life case studies when estimating the effectiveness of a new technology. Numerous studies have been published on the Microsoft website as well as on the sites of some Tablet PC manufacturers, outlining different companies in various vertical markets using Tablet PCs as a solution to increasing efficiency. One of the prime markets to see an immediate Return on Investment is the medical market. We have therefore selected a particular case in Europe to underline the effectiveness of Tablet PCs in this area: that of the Evangelische Krankenhaus Königin Elizabeth Herzberge (KEH) Hospital in Berlin, Germany.

CHALLENGE

- Implement fundamental change in approach to patient billing.
- Introduce diagnosis-related groups (DRGs) and clinical pathways.
- Identify mobile solution that enables medical staff to access hospital network as they do their ward rounds.

SOLUTION

- Install HP Tablet PCs with wireless LAN capabilities.
- Provide access to clinical pathway application and hospital information system at the patient's bedside.
- Switch between notebook, writing pad and desktop modes as required.

RESULTS

- Quality and speed of treatment are improved.
- The administrative workload is decreased.
- Efficiency is enhanced, with savings of about half an hour a day per ward because tests can be ordered and scheduled during the round.
- Valuable information is never lost.

Efficiency is clearly enhanced. In the past, doctors would make notes as they visited each patient and then order tests after the end of the round. This is no longer necessary, and it has been estimated that the new procedure saves about half an hour a day per ward. Furthermore, with an average round involving 20 patients,

there was always a certain risk that notes could be misinterpreted or information lost. That risk has now been eliminated.

WARM WELCOME

"Medical staff have given the HP Tablet PC a warm welcome," said Bernhard Tenckhoff, a medical doctor at KEH. *"Its versatility is greatly appreciated: some people enter data in handwritten form, others use the online keyboard, and yet others a normal keyboard. Not surprisingly, doctors and nurses all over the hospital are now keen to get their hands on one of these machines."*

When not being carried around the wards, the Tablet PCs are attached to docking stations furnished with a normal keyboard and mouse. According to Dr. Tenckhoff, the ability to remove the Tablet PC from the docking station quickly and easily – with or without the keyboard – is particularly useful for staff that are in a hurry. They can simply "grab and go".

KEH is currently exploring potential new uses for its Tablet PCs. One possibility is to use them to record voice notes. Another is to use them to enter the patient's case history into the system, in which case the lack of a vertical screen – perceived as a barrier between doctor and patient – is likely to be a distinct advantage.



Photo courtesy of HP



Tablet PC - Selected Players

... SO WHO ARE SOME OF THE MAIN PLAYERS IN TABLET PC IN 2004?

Following are a few of the top contenders in Europe...



ACER

TravelMate C300 Convertible Tablet PC Series

- The INDUSTRY'S ONLY 14.1" CONVERTIBLE TABLET PC.

Featuring Intel Centrino mobile technology, the TravelMate C300 is designed for corporate and institutional end-users who demand a combination of performance and functionality. The TravelMate C300 delivers the flexibility of ink and text input, breakthrough performance, best-in-class connectivity options, and a big 14.1" XGA display with a full-size keyboard and an internal, modular optical drive. Acer's Tablet PC heritage began with the world's first convertible Tablet PC, the TravelMate C100. The first commercially available Centrino-based Tablet PC was Acer's TravelMate C110. The legacy now continues with the TravelMate C300, the first convertible Tablet PC to feature a full-sized display and keyboard. The performance and size of the TravelMate C300 will allow end-users to utilise this newest Tablet not only as a mobile solution, but also as a desktop replacement system in corporate environments.

FUJITSU SIEMENS

STYLISTIC ST501x SERIES

Fujitsu Siemens have learned a great deal about the technology and even more about the usage patterns of pen Tablet PC users, and apply this knowledge and

expertise to all their products and customer solutions.

"With the new STYLISTIC series and the recently launched LIFEBOOK T models, we are offering our customers an exclusive range of state-of-the-art tablet PCs," explained Peter Eber, Executive Vice President of Volume Products and Supply Operations at Fujitsu Siemens Computers.

"Due to our extensive experience in that area we are in a permanent feedback process with our customers and therefore know best where to improve in developing new products. The comprehensive range of available accessories and a growing number of offerings from ISVs (Independent Software Vendors) opens up numerous application scenarios for our customers."

SOME OF THE PRIME FEATURES:

- The Intel®Pentium® Mobile ultra-low voltage architecture with up to 2 GB DDR SDRAM and up to 80 GB hard disk.
- Robust design and a battery life up to 8 hours. An integrated metal frame strengthens the unit and helps dissipate the heat. The hard disk is mounted on shock absorbers and is surrounded by gel cushions to absorb shock to further increase resilience.



HP (COMPAQ)

Having put in a major publicity campaign in Europe in 2002/2003, HP/Compaq released, at the end of the 2003, a new model – the HP Compaq Tablet PC TC1100. Featuring greatly improved performance from Intel® Pentium® M and Celeron® processors (Ultra Low Voltage), the TC1100 boasts some of the following



Photo courtesy of McCann Erickson

features:

- Improved sparkle-free glass and 160 degree viewing angle on Pentium® M based tablets
- Better graphics experience with 32 MB of dedicated memory
- Increased system memory up to a maximum of 2 GB
- Secure Digital slot for removable media allowing you to easily swap files between handhelds, notebooks, and cameras
- Battery-free digital pen that supports pressure sensitive applications for a better writing experience

MOTION COMPUTING

Motion Computing® award-winning M1300 Tablet PC product family offers two models to choose from. Each is targeted to address the balance of performance and value to meet your needs:

M1300 Power systems with Intel Centrino mobile technology - (for cutting-edge power and performance, featuring Intel® ultra-low voltage Pentium® M processor at 1GHz, 1MB of L2 cache and Intel® 855 chipset).

M1300 Mainstream systems with Mobile Intel Celeron M technology - (for mainstream performance, featuring the 800MHz Celeron® ultra-low voltage processor, 512KB of L2 cache and Intel® 855 chipset).

NEC VERSA LITEPAD

NEC's Versa Litepad is the industry's thinnest and lightest Tablet PC solution. Engineered to combine the natural convenience of pen-based computing with the productivity advantages of Microsoft's new Windows XP Tablet PC Edition operating system, the Versa LitePad represents a new generation of "pure" Tablet-based computing

Windows XP Tablet PC Edition includes the full power and functionality of Windows XP Professional, plus additional enhancements to enable pen-based computing

solutions for grab-and-go professionals in vertical markets like healthcare, field sales and professional services where users require a solution that's easy to use in a variety of mobile environments.

TOSHIBA PORTÉGÉ M200/205

Improving upon the Portégé 3500, the Portégé M200/205 Tablet PC offers the new uniquely designed Toshiba Tablet Multi Dock and impressive array of productivity tools including Intel® Centrino™ mobile technology for extended battery life and advanced wireless connectivity, nVIDIA® GeForce™ FX Go 5200 32M graphics, and Microsoft® Office OneNote™ 2003.

To handle the most demanding productivity and multimedia applications, the Portégé® M200/205 Series offers the powerful Intel® Pentium® Processor M at 1.50GHz (up to 1.70GHz), and the NVIDIA® GeForce™ FX Go5200 32M graphics processor with 32MB DDR video memory.



Photo courtesy of McCann Erickson

VIEWSONIC

The ViewSonic Tablet PC V1100 is a fully functional network-ready PC in a convenient tablet form factor featuring integrated WAN, LAN and Wi-Fi. Compact and lightweight at around 1.6 kg, this innovative device improves the efficiency of mobile professional both in the office and on the road.

The forementioned lists were correct at the time of writing in February 2004, and are indicative of only some of the many Tablet PC solutions available. For a full, up-to-date list of Microsoft Tablet PC Partners, please visit: <http://www.microsoft.com/windowsxp/tabletpc/partners/default.asp>





A Word on Security

TRUSTWORTHY COMPUTING – ESSENTIAL IN MODERN TIMES

A new term coined by Microsoft, "Trustworthy Computing", encapsulates all of the issues around security, reliability and manageability. These are software problems, but they're not easy software problems. Security has been a key focus for Microsoft over the past couple of years, and is now the most important focus for the company.

IT departments today need the assuredness that their systems are going to be reliable and secure without having to spend the man hours on those systems they spend today.

Overhead has to be freed-up in IT in order that those dollars can go towards new applications, Web service development, establishing wireless networks, and being ambitious about these new possibilities.

Two fundamental technologies from Microsoft can help customers increase their security. The first is SMS 2003 for patch management and second is ISA Server 2004 to add defense and security at the network edge.

Microsoft has always had the ability to target specific groups of machines to deploy patches to, but what's brand new in SMS is the ability to deploy patches during specific outage windows.

Now, this is especially important for mission critical servers that are in data centers that can only be updated at scheduled down times. And as important as data centers are, mobile clients are also a very key focus for SMS 2003. Now, Microsoft gives administrators the ability to have full control over the end-user experience and this allows them to give the

end users flexibility to do things like postpone the patches if they're busy and need to install them later.

Of course, we know that patching, while part of the answer, is not the full answer. This is why Microsoft launched ISA Server 2004 at Comdex Fall, adding defense and depth to the network edge. This technology augments traditional firewalls that are deployed today, by adding application layer security.

A key item is the ability to customise rules for specific environments. Let's say you have your network up and running, but you notice some of your employees are abusing internet policy. For example, they're using peer-to-peer MP3 file sharing applications. You don't want these on your network for several reasons: security, network bandwidth usage, and potential legal liability. What you may not know about these applications is that to a traditional firewall they look the same as Web traffic.

A brand new feature in ISA Server 2004 is called the HTTP filter and takes advantage of the power of application layer security to be able to detect this type of traffic and stop it while still allowing things like Web browsing to happen.

For sensitive applications, the industry will move, over time, away from passwords to the use of smart cards. We'll move towards the improvement of the mail protocol - enhanced SMTP - where we'll be able to verify who mail comes from. Some of the weaknesses we have today go back to the very original standards of the Internet. Really knowing where patches are coming from and being able to identify this is one of the next steps that are needed in order to move up to the level of trustworthiness that should be expected for these applications.



Cleverdis Vision



Gérard Lefebvre is President & CEO of Cleverdis, he has held positions of Director and Chairman with a number of companies in the Display and Digital Peripherals Industry. He is recognised world-wide by industry leaders and the management of major end-user organisations for his work in creating true, efficient and sincere communication between consumers and vendors.

A few years ago at Comdex USA, I first heard Bill Gates talking about his dream for the Tablet PC, and I was instantly taken by the idea. Here again was the vision of a man who brought computing within the reach of one and all. It was not a new vision, but the extension of his view of how people will be able to interact more efficiently with the artificial intelligence of a computer. Indeed, over time, Microsoft has enhanced and enabled the human/computer interface, firstly in the visual and logical senses, and now through the physical interface, using digital ink and the Tablet form factor is a more natural and ergonomic way to input and access information than with a keyboard and a mouse. People, however, have become used to using their computers in the latter, less efficient manner, and it will no doubt take some time for them to come around to understanding that there can be a better way. When, at the launch of Tablet PC in 2002, I saw how Microsoft's specific Tablet PC operating system could enable this format for countless new applications, while remaining compatible with standard Windows XP® applications, I realised this would be a winning combination.

We at Cleverdis are 100% behind the efforts of Microsoft in its development of this product and believe that its early critics were simply unaware of the awesome potential held by the enabling of these devices by the Microsoft platform. We believe strongly in its future and are persuaded it will bring great value to those businesses that are early adopters.



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and it's a
notebook PC.*

Revelation hits. Now record it.

It's a notebook PC, and with a flip of the screen it's as simple to use as a pad and pen. It's a Tablet PC. Now you jot down ideas right on your PC screen or onto a PowerPoint® slide, for example. Plus it runs the full range of Windows® XP compatible applications including the new Microsoft® Office System, so they can be at your command wherever you go. See it in action at microsoft.com/tabletpc

Microsoft
Windows^{XP}
Tablet PC Edition