Ipsos Reid

Research Study

**Analyzing the Return On Investment of a
BlackBerry Deployment, 2004**

Ipsos Reid

Ipsos Reid BlackBerry ROI Study, 2004

About The Study

- This new study was undertaken to reflect the growing international popularity of integrated voice and data BlackBerry® handhelds.
- The study was conducted with 490 IT managers responsible for managing BlackBerry in their firms and 210 BlackBerry end users.
- This study added an analysis of BlackBerry workflow efficiency benefits and enhanced the TCO information to include costs of pilots.
- BlackBerry end users with voice enabled on their BlackBerry handhelds comprised 51% of respondents.

Study Results

- Personal Productivity > The average end user coverts 54 minutes of downtime into productive time per day.
    - This equates to 196 hours per user per year in recovered downtime.
- Workflow > In addition to their own personal productivity, BlackBerry also allows mobile staff to keep work moving for others while they are out of the office. The average BlackBerry user reports that BlackBerry increases the efficiency of the teams that they work with by 29%.
    - This equates to over US$21,000 per BlackBerry user per year based on international productivity per employee data.
- Immediacy > The average BlackBerry user processes 2,750 time sensitive email per year while mobile and over 1,444 phone calls per year.
    - The value of this immediacy is difficult to quantify but can be reasonably estimated at over US$5,000 per user per year.
- Cost savings attributable to BlackBerry primarily result from RAS savings and equate to over US$275 per user per year.
- BlackBerry users with voice activated on their BlackBerry handhelds maintain the same volume of voice minutes as before becoming BlackBerry users. BlackBerry users without voice activated experienced a decline of 12% in voice minutes on average. This is not counted as a cost savings in this report due to the prevalence of bucket pricing.
- BlackBerry Net TCO per user totals US$1228 and includes US$26 per user for pilot costs and US$229 per user for internal BlackBerry support costs including training, help desk, BlackBerry Enterprise Server™ and BlackBerry handheld support costs.
- BlackBerry ROI varies by individual and is conservatively calculated at a minimum of 162%. This equates to a payback period of 224 days.

Inquiries about this report:

Chris Ferneyhough, VP Technology, Ipsos Reid
Chris.Ferneyhough@Ipsos-Reid.com

Introduction

About This Report

The purpose of this report is to determine a typical company's return on investing in BlackBerry. This return-on-investment (ROI) study is an update to the BlackBerry ROI study conducted by Ipsos-Reid and Research In Motion Limited (RIM) in 2001. To view the results of the previous study please click on the following link: http://www.blackberry.com/select/roi/ROI_2001 report_BlackBerry.pdf.

What's New In This Report

The Ipsos-Reid BlackBerry ROI Study, 2001 was conducted as RIM was just beginning to launch converged voice and data products. This study assesses the ROI provided by BlackBerry from both voice *and* data. Fifty-one percent of respondents report having a voice activated BlackBerry handheld. The key drivers for integrated voice and data BlackBerry handhelds is the convenience of only having to carry one handheld and the ease of use of having voice capabilities integrated with data capabilities. The data presented in the costs savings section of this report strongly suggests that integrated voice and data BlackBerry handhelds have lived up to this promise.

Workflow efficiency has increasingly become a core focus for many IT manager decision makers and end user clients. The ROI associated with BlackBerry workflow efficiency has been added to this report.

Due to the importance of TCO data and because BlackBerry results are consistently lower than what some would expect, the size of the IT sample was increased in this study. A total of 490 IT managers responsible for administering BlackBerry in their organizations responded. Pilot costs were also included in this study for the first time.

BlackBerry was just beginning to globalize while the Ipsos-Reid BlackBerry ROI Study, 2001 was being conducted. Since that time, RIM has forged relationships with numerous carriers around the world including Europe, Asia Pacific and Mexico. RIM continues to expand their presence with carriers internationally. The distribution of respondents to this study was reflective of the global distribution of BlackBerry with over 10% of respondents coming from outside of North America, primarily Europe.

NOTE: This study looks exclusively at the ROI from BlackBerry email, organizer and voice. The ROI provided by access to backend applications via BlackBerry is being assessed through separate projects. The reason for this is that the ROI of backend applications varies substantially depending on the type of application. As such, backend applications ROI is being studied through individual case studies. This content will be developed throughout 2004 and beyond.

Please visit http://www.blackberry.com/solutions/index.shtml to access this content.

Study Methodology

Subscribers to RIM's BlackBerry Connection® newsletter were sent an email invitation to complete an online study in December 2003. The email invitation included a link to the online questionnaire, which was housed on Ipsos-Reid's website.

Respondents who indicated that they are responsible for the management, administration or support of BlackBerry within their organization were linked to an Information Technology Administrator questionnaire (these respondents will be labeled as "IT Administrators" for the purposes of this report). BlackBerry users who indicated that they are not responsible for the management, administration or support of BlackBerry within their organization were linked to the BlackBerry End User questionnaire (these respondents will be labeled as "End Users").

Respondents were screened to ensure that their organization uses BlackBerry Enterprise Server, and in the case of End Users, that their BlackBerry handheld is connected to BlackBerry Enterprise Server.

A total of 490 IT Administrators completed the questionnaire by December 31st, 2003. A sample size of 490 provides a margin of error of +/-4.4%, 19 times out of 20.

A total of 210 End Users completed the questionnaire by December 31st, 2003. A sample size of 210 provides a margin of error of +/-6.7%, 19 times out of 20.

The study was conducted with BlackBerry users and IT managers in North America, Europe and Asia Pacific. The distribution of responses was in line with BlackBerry's installed base by region, with roughly 10% of responses coming from outside North America.

The margin of error will be larger for sub segments of the sample.

All monetary figures in this report are presented in US dollars.

About Ipsos-Reid

Ipsos-Reid is a member of the Ipsos Group. Ipsos is a leading global survey-based market research group, with revenues of 538.5 million euros in 2002. It offers a full suite of research services, guided by industry experts and bolstered by advanced analytics and methodologies in advertising, marketing, public opinion and customer loyalty research, as well as forecasting and modeling. Member companies also offer a full line of custom, syndicated, omnibus, panel, and online research products and services.

Organization of This Report

1) **Core BlackBerry Benefits**
- BlackBerry Productivity Benefits
- Blackberry Workflow Efficiency Benefits
- BlackBerry Immediacy Benefits

2) **BlackBerry Cost Savings**
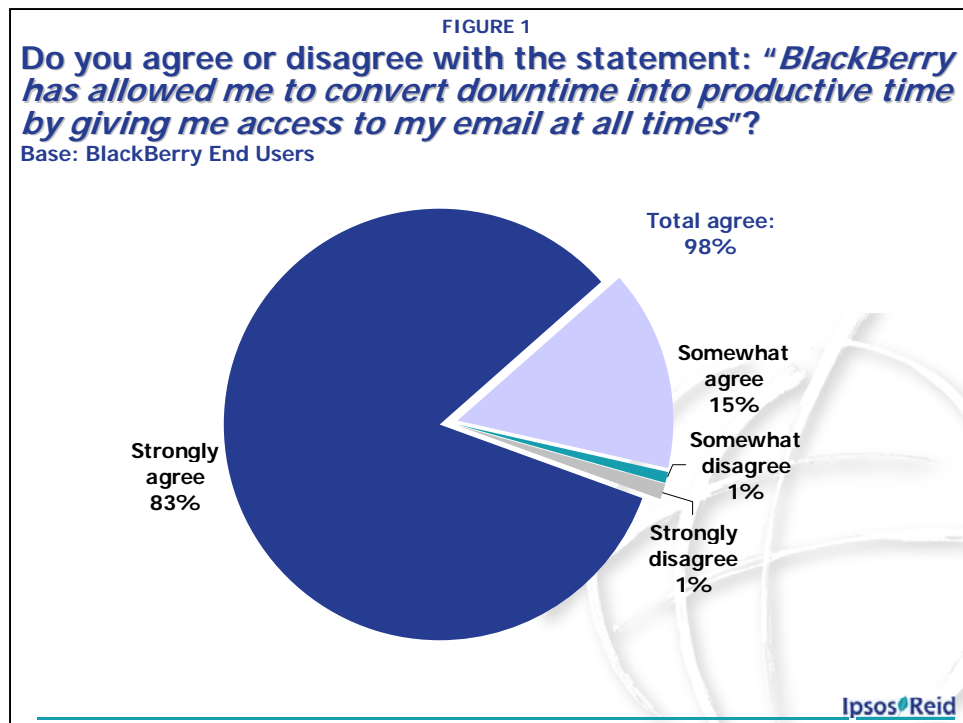3) **BlackBerry Total Cost of Ownership (TCO)**
4) **BlackBerry ROI and Pay-Back Period Calculations**
5) **Conclusion**
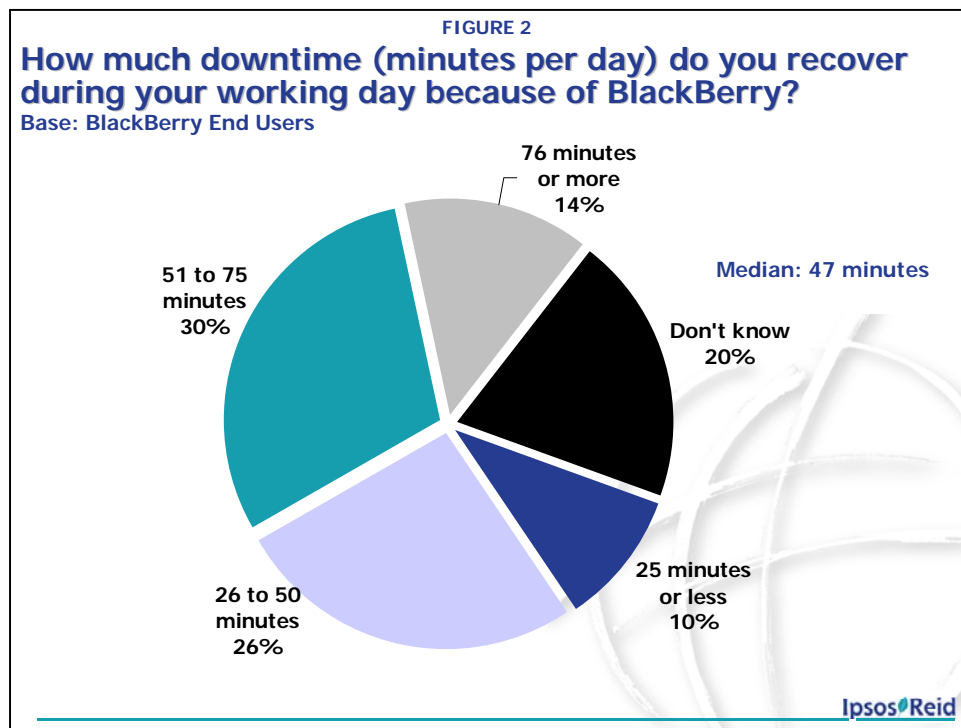
BlackBerry Productivity Benefits

End User respondents to the 2001 BlackBerry ROI study were asked if they agreed with the statement: "*BlackBerry has allowed me to convert downtime into productive time by giving me access to my email at all times.*" Virtually all respondents agreed with the statement (93%).

The percentage of End User respondents who agree with this statement has now increased to 98%. Furthermore, the intensity of agreement with this statement has significantly increased. In 2001, 67% *strongly* agreed with the statement. In 2003, 83% *strongly* agree with this statement [figure 1].

FIGURE 1
Do you agree or disagree with the statement: "*BlackBerry has allowed me to convert downtime into productive time by giving me access to my email at all times*"?
Base: BlackBerry End Users

Total agree: 98%
Somewhat agree 15%
Somewhat disagree 1%
Strongly disagree 1%
Strongly agree 83%

Ipsos⬩Reid

The typical End User indicates that they recover slightly less than one hour per workday because of BlackBerry (54 minutes). This is consistent with the 2001 study where End Users stated that they recovered an average of 53 minutes per workday. However, for the purposes of the ROI calculation we are going to use the median[1] value of 47 minutes per day [figure 2].

It is important to note that this conversion of downtime into productive time applies to both BlackBerry voice and data. The most likely reason that total downtime conversion did not increase with integrated voice and data BlackBerry handhelds is that there is a logical ceiling to how much downtime that the average user has in a given day. In the integrated voice and data BlackBerry user model, users are responding to email with email, responding to email with voice calls, responding to voicemail and phone calls with email, and generating new email and phone calls. However, the total time that BlackBerry users spend getting more work done during downtime has not changed substantially since 2001.

FIGURE 2
How much downtime (minutes per day) do you recover during your working day because of BlackBerry?
Base: BlackBerry End Users

76 minutes or more 14%

Median: 47 minutes

51 to 75 minutes 30%

Don't know 20%

26 to 50 minutes 26%

25 minutes or less 10%

Assuming a five-day workweek and 50 working weeks per year, this translates to the recovery of approximately <u>196 hours per year</u>.

The 2001 ROI study put forth that the impact of this recovered time is most appropriately measured in direct relation to the End User's salary, assuming that the value of their daily productivity is assumed to be accurately reflected in their salary level. Accordingly, the

---

[1] A median value is the middle value of all responses. Half of responses are below the median value and the other half are above the median value. Using the median value is sometimes more conservative than using a mean or average value as an average value can be skewed by a small number of respondents giving large values.
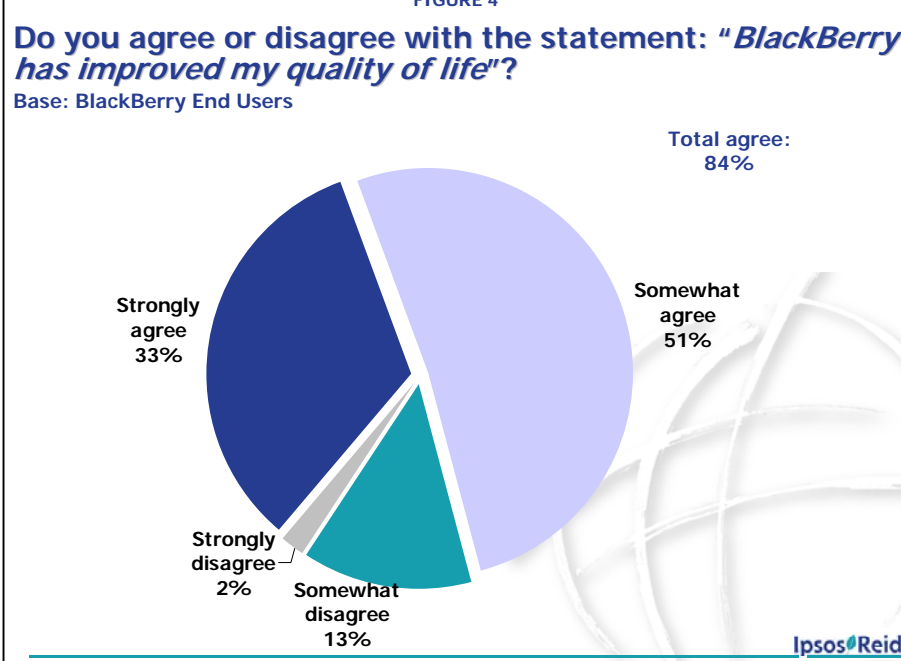
table below lists annual recovered productivity by a BlackBerry user's annual salary [figure 3].

FIGURE 3

Salary of BlackBerry User	Annual Recovered Downtime[2]
$40,000	$3,920
$50,000	$4,900
$60,000	$5,880
$75,000	$7,350
$100,000	$9,800
$110,000	$10,780
$125,000	$12,250
$150,000	$14,700

End Users were also asked whether or not they agreed with the statement "*BlackBerry has improved my quality of life*." Eighty-four percent of End User respondents agree with this statement, with 33% strongly agreeing and 51% saying they somewhat agree (figure 4). This is down slightly from the results of the 2001 study. This indicates that BlackBerry is having a positive impact in quality of life across employee groups as BlackBerry continues to achieve deployment depth within organizations. While it is difficult to put a dollar value on improved quality of life, it is fair to assume that a worker with a sense of improved quality of life likely has lower absenteeism and greater loyalty to the firm.

FIGURE 4

Do you agree or disagree with the statement: "*BlackBerry has improved my quality of life*"?
Base: BlackBerry End Users

Total agree: 84%

Strongly agree 33%
Somewhat agree 51%
Strongly disagree 2%
Somewhat disagree 13%

Ipsos Reid

---

[2] Assumes 2,000 hours worked in a given year (40 hours per week x 50 working weeks).

BlackBerry Workflow Benefits

In this report, productivity measures the BlackBerry benefits attained by end users in terms of their own conversion of downtime into productive time. Workflow measures the benefits to others delivered by BlackBerry users who are able to remain fully functional members of their teams while they are mobile. It is important to note that workflow requirements include both voice and data access. For example, not being able to respond to requests to sign-off on project terms or costs can result in mobile managers or staff slowing down tasks and project completions for many others.

End User respondents were given the following definition of workflow:

Workflow refers to the processes followed by employees to complete tasks and projects in regards to how they interact with colleagues and business systems. Workflow also refers to the assessment of the efficiency that employees achieve in completing tasks and projects and measures how effective employees are in having the information they need to get things done.

After having read the definition, survey respondents were then asked if they agreed or disagreed with the following statement: "*BlackBerry has enhanced my workflow efficiency*." Agreement with this statement is universal among respondents as 72% strongly agree and 27% somewhat agree.
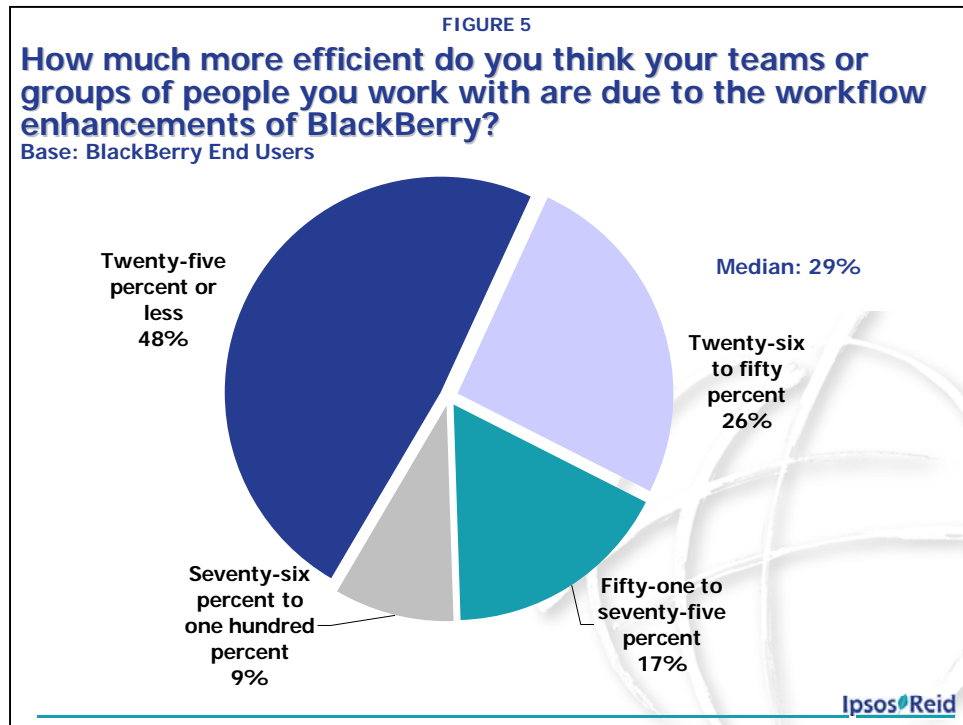
End Users were then given three types of workflow efficiency activities and asked to rank how frequently each activity occurred relative to the others. According to respondents, approval related activities are the most frequent workflow activities encountered with BlackBerry (49% ranked it first), followed by direct guidance to one employee (36% ranked it first) and direct guidance to a group (15% ranked it first).

Respondents were then asked to indicate how much more efficient their teams or groups of people that they work with are due to the workflow enhancements of BlackBerry (the 1% of respondents who do not agree that BlackBerry has improved their workflow efficiency were not asked this question). The median response provided by respondents is that their teams are now 29% more efficient due to the workflow enhancements of BlackBerry (figure 5).

According to the *IMD World Competitiveness Yearbook 2003*, the typical Output per American Employee per Annum is approximately $75,000. If we were to conservatively estimate that one BlackBerry handheld enabled employee is responsible (as a manager or team leader) for one non-BlackBerry handheld enabled employee, it follows that the employee's efficiency has improved by $21,750[3] due to BlackBerry. If a manager was responsible for five employees in his or her group, BlackBerry would be responsible for $108,750 in increased productivity. While it is easiest to appreciate this in terms of mobile managers affecting less mobile staff members, almost every mobile employee

---

[3] $75,000 USD x a 29% increase in efficiency

slows things down for others when they do not have access to voice and data contact. With over 25% of respondents stating that BlackBerry has increased their workflow efficiency by over 50%, this indicates that before BlackBerry the mobile requirements of managers and staff were causing serious risk for many current users.

FIGURE 5

How much more efficient do you think your teams or groups of people you work with are due to the workflow enhancements of BlackBerry?
Base: BlackBerry End Users

Twenty-five percent or less
48%

Median: 29%

Twenty-six to fifty percent
26%

Seventy-six percent to one hundred percent
9%

Fifty-one to seventy-five percent
17%

Ipsos Reid

BlackBerry Immediacy Benefits

As discussed in the 2001 ROI document, immediacy refers to the unique, often one-off gains that can be achieved because of the speed of BlackBerry voice and data awareness. BlackBerry immediacy benefits include client acquisition and retention through improved responsiveness and transaction gains.

Because voice and data frequency rates vary, we will break these out individually.

BlackBerry Email and Organizer Immediacy Benefits

Email is used as the key driver of BlackBerry immediacy but quick access to a user's calendar, contacts or other organizer data is often vital to achieve an immediacy benefit.

To quantify the immediacy benefits provided by BlackBerry wireless email and the organizer, an arbitrary dollar value is placed on each time-sensitive communication that End Users are able to address due to BlackBerry while mobile. Although the derived number is completely arbitrary, this is the only way to calculate an average immediacy benefit per user. The reality is that many of the time sensitive email discussed here will

have no material immediacy benefit. However, several respondents to the BlackBerry ROI studies have discussed single multi-million dollar immediate emails that were attributed to gaining or retaining major clients or allowing end users to take advantage of short-term information for direct financial gain.

To determine the number of time-sensitive emails addressed by BlackBerry, End Users were asked how many emails they send from their BlackBerry handheld in a given day, how many email they receive, what percentage of their email is time sensitive, and how much time they spend away from their office.

The median number of business email received per day by respondents is 48, and the median percentage of time spent away from the office by End Users is 39%. Additionally, the median value for the percentage of email that is received that can be classified as time sensitive is also 39%. As such, the median number of <u>time-sensitive emails</u> received by BlackBerry End Users while they are away from their office is seven per day, or 35[4] per week.

The median number of business emails sent by End Users per day from their BlackBerry handheld is 9. Note that this number is a bit misleading because it is averaged over both mobile and non-mobile days or periods. The average is needed to perform the calculations however. The median percentage of time-sensitive emails sent by BlackBerry End Users is 49%. This is equivalent to four time-sensitive emails being sent per day by the median BlackBerry user, or 20[5] per week.

Including both sent and received email, the typical BlackBerry End User is addressing 55 time sensitive emails per week, or 2,750 time-sensitive emails per year.

BlackBerry Voice Immediacy Benefits

The same system of assigning arbitrary values to each phone call will be used to calculate an indicator for BlackBerry voice immediacy. The median BlackBerry user with voice activated on their BlackBerry handheld conducts 650 minutes of voice calls per month. According to the most current general market data from the CTIA (1H2003), the average duration of local calls was 2.38 minutes while the average duration of long distance calls was 3.38 minutes for all mobile phone users. To calculate the average duration of all calls, the degree of mobility of BlackBerry users has to be accounted for to estimate the split between local and long distance calls. When this data is applied on a weighted average basis the average duration of all BlackBerry voice calls is approximated at 2.75 minutes. As such, each BlackBerry user with voice activated on their BlackBerry handhelds places or receives approximately 236 phone calls per month, or 2,832 phone calls per year. To derive the voice immediacy benefits that apply to BlackBerry the annual number of phone calls must be multiplied by the 51% of BlackBerry users with

---

[4] 48 emails received x 39% time sensitive x 39% of time spent away from office x 5 days a week = 35 time sensitive emails per week
[5] 9 emails sent from BlackBerry handheld x 49% time sensitive x 5 days per week = 20 time sensitive emails sent from BlackBerry handheld per week

voice activated on their BlackBerry which gives an estimated total of 1444 phone calls per year.

For the purpose of this calculation, it is assumed that all phone calls are placed from BlackBerry handhelds while the user is mobile and that all voice calls have an element of time sensitivity to them [Figure 6].

FIGURE 6

Dollar value of Immediacy	Annual BlackBerry Return (dollar value x 2,750 time sensitive emails per year)	Annual BlackBerry Return (dollar value x 1444 voice calls per year)	Total Annual BlackBerry Return (email and voice)
$1	$2,750	$1,444	$4,194
$2	$5,500	$2,888	$8,388
$5	$13,750	$7,220	$20,970
$10	$27,500	$14,440	$41,940
$15	$41,250	$21,660	$62,910
$20	$55,000	$28,880	$83,880

Cost Savings

In the 2001 study we explored cost savings with respect to decreased use of other communication devices, such as wireless phones, PDAs, pagers, and laptops. At that time, decreased Remote Access Server usage, reduced wireless phone minutes, and discontinued usage of PDAs and Pagers, resulted in total direct savings per BlackBerry End User of $722 per year.

BlackBerry users who do not have voice activated on their BlackBerry handheld conducted a median of 625 voice minutes per month before becoming BlackBerry users. These users experienced an average decline of 12% to 550 voice minutes per month after becoming BlackBerry users.

BlackBerry users who do have voice activated on their BlackBerry handheld conducted a median of 650 voice minutes per month before becoming BlackBerry users. These users reported a change in their monthly voice minutes of 0% on average as they reported the same median of 650 voice minutes per month after becoming BlackBerry users. This suggests that BlackBerry users are more likely to respond by voice when they do not have to reach for a separate device. The modest voice displacement by email that we saw in 2001 and continue to see with BlackBerry users without voice activated on their BlackBerry handhelds in 2004, appears to be offset by an equivalent increase in voice use spurred by email and other PIM data.

The near ubiquity of bucket pricing for enterprise mobile phone users has created a situation in which voice minutes may decline but savings will only result if the decline puts the user into a lower bucket and the user or IT manager takes the action of reducing their service package. As such, the 12% reduction in voice minutes for the 49% of

BlackBerry users who do not currently have voice activated on their BlackBerry handhelds is not counted as a cost savings in the report. Additionally, it has been assumed that transferring voice services to a BlackBerry wireless handheld does not result in a hardware savings for the displaced basic mobile phone. This is based on the fact that the basic mobile phone is typically fully subsidized by the carrier within the service contract.

Another ongoing trend has been the declining use of pagers and non-wireless PDAs in corporations. This means that BlackBerry does not displace competing hardware as frequently as it once did. As such, expenses on pagers and non-wireless PDAs will be treated as sunk costs for the 2004 ROI calculation.

This leaves us with one material cost that is appropriate to continue to include in the BlackBerry ROI calculation: decreased RAS usage with laptops dialed into the corporate network. This is based on the belief that a list of small hard cost savings per user, each of which are arguable in themselves, is more of a detraction than a benefit to this study. This is also based on the contention that the Return On Investment of productivity tools is inherently about achieving something as opposed to saving something and the nearly unanimous reason that they are purchased.

The median BlackBerry End User who dialed into the corporate network prior to using BlackBerry indicates that in a given month, they would spend 393 minutes (or 6.6 hours) dialed into the corporate network. Since becoming a BlackBerry user the median End User is dialed into the corporate network for 115 minutes per month (or 1.9 hours). This is a drop of 71%.

As such, a typical End User who uses a laptop and dials into the corporate network can expect to save \$334[6] per year once they start using BlackBerry. Given that 89% of BlackBerry users use a laptop and 93% of those users dial into the corporate network at least once a month, this is equivalent to a savings of US\$276 for an average BlackBerry user (i.e. some would not have laptops and some with laptops would not dial into the network).

The average price to carriers of BlackBerry handhelds is approximately US\$365. We have assumed that the price to clients would not exceed this due to subsidization by carriers. Using a service life of 2 years (US\$183 per year), RAS savings can be looked at as a fringe benefit that equates to free handheld hardware plus a few months of free airtime, depending on carrier package and pricing.

---

[6] 393 minutes per month pre-BlackBerry – 115 minutes per month post-BlackBerry x 12 months = 3336 RAS minutes saved per year. It is assumed one minute of RAS cost is approximately 10 cents.

BlackBerry Total Cost of Ownership (TCO)

The following table details the investment required by a firm looking to deploy BlackBerry handhelds to 100 users. The top section of Figure 7 presents the TCO results within the study weighted for the percent of users with voice activated BlackBerry handhelds. Given the momentum towards voice activated BlackBerry handhelds, the bottom section of Figure 7 presents the TCO results for every new user that has voice activated on their BlackBerry handheld.

FIGURE 7

Costs Weighted For Percent of Users With Voice Activated On Their BlackBerry Handheld	Annual Cost Per Average User
BlackBerry Handheld	$183
BlackBerry Software	$56
Server hardware	$50
Airtime – Data ($40 per month)	$480
Airtime – Voice (average user with 503 min. per month x $0.08 per min. x 51% of sample with voice activated BlackBerry handhelds)	$240
BlackBerry Pilot Costs	$26
Internal Support Costs	$229
TCO – Average User	**$1264**
Cost Savings (RAS)	$276
Net TCO – Average User (subtract savings)	**$988**
Incremental TCO – Average User (subtract voice cost for users that already had mobile phones - $240)	**$748**
Costs Assuming That All New Users Are Provided Voice Activated BlackBerry Handhelds	Annual Cost Per Voice Activated User
BlackBerry Handheld	$183
BlackBerry Software	$56
Server hardware	$50
Airtime – Data ($40 per month)	$480
Airtime – Voice (average user with 503 min. per month x $0.08 per min.)	$480
BlackBerry Pilot Costs	$26
Internal Support Costs	$229
TCO – Voice Activated User	**$1504**
Cost Savings (RAS)	$276
Net TCO – Voice Activated User (subtract savings)	**$1228**
Incremental TCO – Voice Activated User (subtract voice cost for users that already had mobile phones - $480)	**$748**

Assumptions for the preceding table:

- The average sales price to carriers of BlackBerry handhelds is approximately US$366. We have taken a conservative approach by keeping the price to enterprise clients at this same value. Carriers are likely to offer discounts with enterprise contracts;
- The BlackBerry software cost includes the cost for the BlackBerry Enterprise Server, additional Client Access Licenses and BlackBerry Technical Support Services (TSupport), with the software amortized over two years;
- The BlackBerry Enterprise Server requires an Intel® Pentium® III or compatible processor (500 MHz or greater, 512 MB RAM, 2 GB hard drive). A server that meets the base requirements can be purchased for several hundred dollars. However, many companies will want to install BlackBerry as a mission critical system on a high uptime, high availability, multiple hard drive, rack mounted server. These high end servers can be purchased for under US$10,000. 2 year amortization.
- The median number of hours that IT managers responsible for administering BlackBerry in their organization report being spent running the pilot is 58 hours [figure 8]. The median number of BlackBerry handhelds deployed in an organization is 55. Based on an IT manager's salary of $100,000, this is equivalent to $52 per user, amortized over two years;
- The median number of hours IT managers responsible for administering BlackBerry in their organization report being spent on BlackBerry Enterprise Server support is 8 hours per month [figure 9]. The median number of hours IT managers responsible for administering BlackBerry in their organization report being spent on handheld support is 13 hours per month [figure 10], and the median number of handhelds deployed is 55. Again assuming an IT manager's salary of $100,000, this is equivalent to $229 per user per year.
- Incremental TCO is an interesting measure of actual BlackBerry TCO because the vast majority of mobile users (91% from previous study) were already incurring monthly voice costs. As such, voice costs cancel out when the voice service is moved over to a BlackBerry handheld. However, this treats voice expenses as a sunk cost. These numbers will not be used in the ROI calculations.

FIGURE 8

How many hours do you estimate were spent in supporting and running your BlackBerry pilot?

Base: IT Administrators

More than
100 hours
35%

51 to 100
hours
34%

26 to 50
hours
27%

25 hours or
less
4%

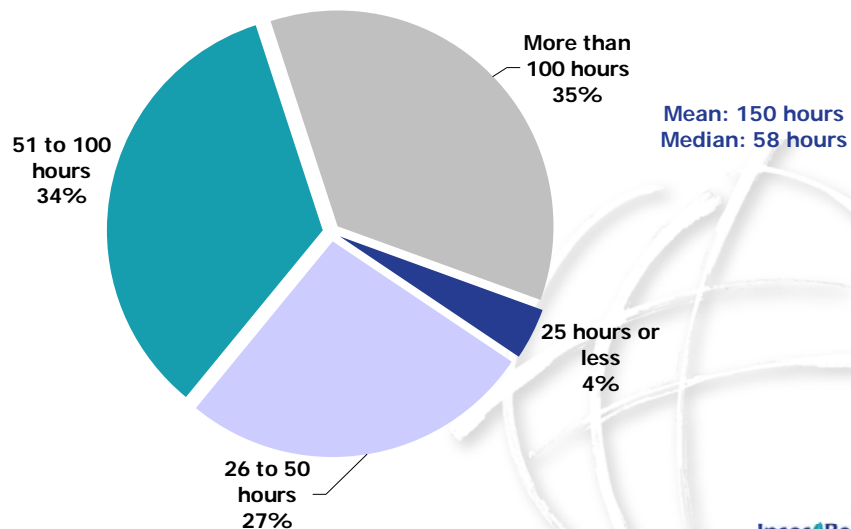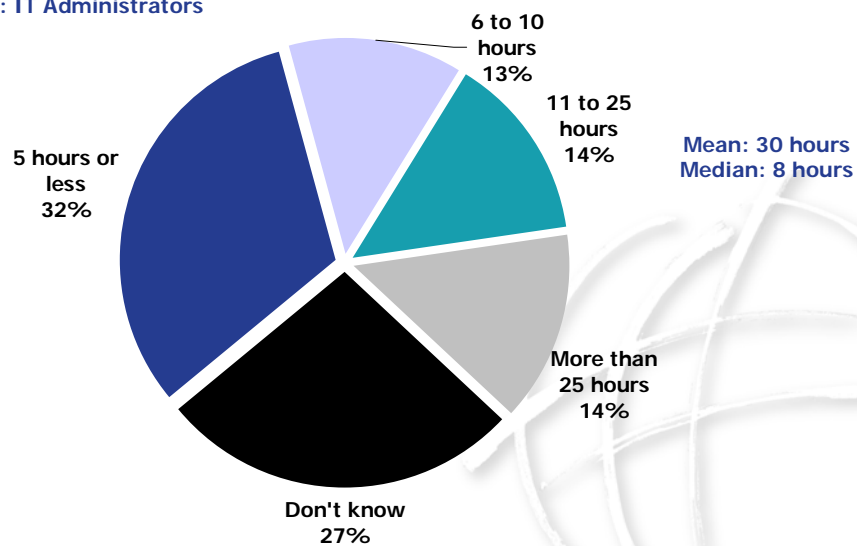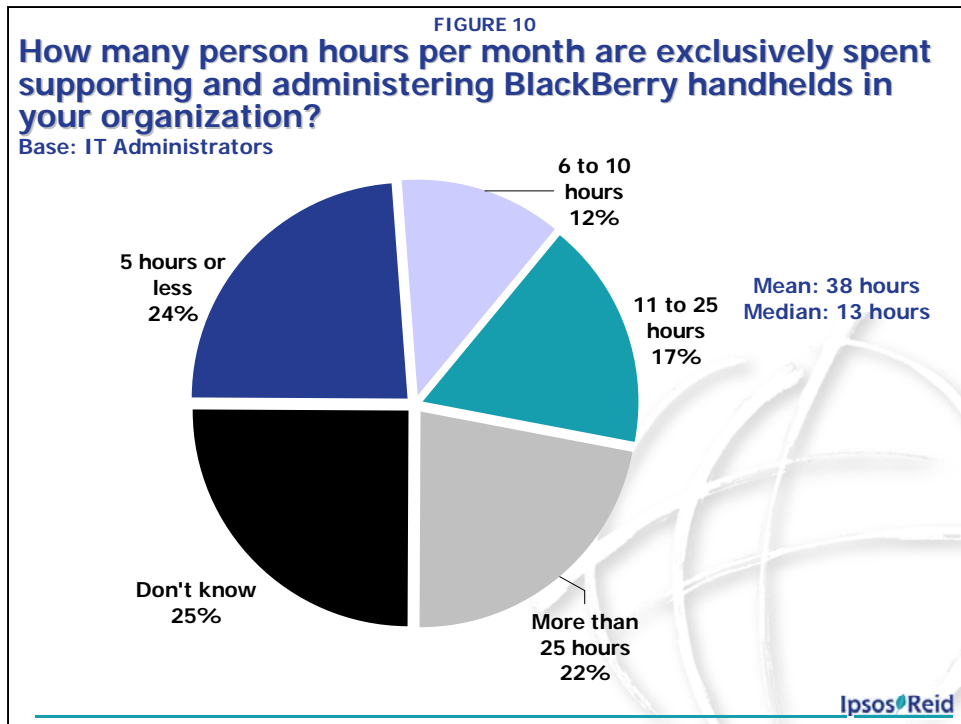**Mean: 150 hours**
Median: 58 hours

Ipsos Reid

FIGURE 9

How many person hours per month are exclusively spent supporting and administering BlackBerry Enterprise Server in your organization?

Base: IT Administrators

6 to 10
hours
13%

11 to 25
hours
14%

5 hours or
less
32%

Don't know
27%

More than
25 hours
14%

Mean: 30 hours
Median: 8 hours

Ipsos Reid

FIGURE 10
How many person hours per month are exclusively spent supporting and administering BlackBerry handhelds in your organization?
Base: IT Administrators

(Pie chart with the following segments:)
- 6 to 10 hours: 12%
- 11 to 25 hours: 17%
- More than 25 hours: 22%
- Don't know: 25%
- 5 hours or less: 24%

Mean: 38 hours
Median: 13 hours

BlackBerry Return on Investment

The return on investment experienced by BlackBerry users varies in relation to the employee's role within their organization and the degree of impact that their activities have on the firm's profitability. Several BlackBerry ROI scenarios for different occupation classes are presented below. The ROI and Payback periods are presented in escalating order to allow readers to quickly personalize where they would peg the numbers based on their individual interpretation of the contents of this report.

In the interest of being conservative the following calculation rules have been applied for all scenarios:

- TCO and Net TCO are calculated for each scenario to allow readers to decide whether they want to include the RAS savings that are typical of the average BlackBerry deployment.
- Personal productivity returns have been halved. This is to accommodate the argument that suggests that mobile workers will not necessarily do more work with every extra minute that is converted from downtime into potentially productive time.
- Workflow efficiencies have been halved. Similar to the reason with personal productivity, if there is merit to the argument that mobile professionals may take some slack time out of their increased productive time, their team-mates may also not take full advantage of the workflow benefits received from their mobile counterpart.
- Based on a two year amortization.
- 100 BlackBerry handhelds and one BlackBerry Enterprise Server.

SCENARIO ONE
- *Salary of $50,000*
- *One-to-one ratio of mobile employee to other employee*
- *Value of time sensitive email or voice call is $2 each*

Source of Value	Dollar Amount	Cumulative Returns	BlackBerry TCO	BlackBerry ROI[7]	Payback Period[8]
Productivity	$2,450	$2,450	$1504	163%	224 days
Workflow	$10,875	$13,325	$1504	886%	41 days
Immediacy	$8,388	$21,713	$1504	1443%	25 days

Source of Value	Dollar Amount	Cumulative Returns	BlackBerry Net TCO	BlackBerry ROI[9]	Payback Period[10]
Productivity	$2,450	$2,450	$1228	199%	183 days
Workflow	$10,875	$13,325	$1228	1085%	34 days
Immediacy	$8,388	$21,713	$1228	1768%	21 days

SCENARIO TWO
- *Salary of $100,000*
- *One-to-two ratio of mobile employee to other employees*
- *Value of time sensitive email or voice call is $5 each*

Source of Value	Dollar Amount	Cumulative Returns	BlackBerry TCO	BlackBerry ROI	Payback Period
Productivity	$4,900	$4,900	$1504	326%	112 days
Workflow	$21,750	$26,650	$1504	1772%	21 days
Immediacy	$20,970	$47,620	$1504	3166%	12 days

Source of Value	Dollar Amount	Cumulative Returns	BlackBerry Net TCO	BlackBerry ROI	Payback Period
Productivity	$2,450	$4,900	$1228	399%	91 days
Workflow	$21,750	$26,650	$1228	2170%	17 days
Immediacy	$20,970	$47,620	$1228	3877%	9 days

---

[7] BlackBerry ROI = Cumulative Returns / BlackBerry TCO
[8] Payback Period = BlackBerry TCO / (Cumulative Returns / 250 working days, annualized for weekends etc.)
[9] BlackBerry ROI = Cumulative Returns / BlackBerry Net TCO
[10] Payback Period = BlackBerry Net TCO / (Cumulative Returns / 250 working days, annualized for weekends etc.)

SCENARIO THREE
- *Salary of $150,000*
- *One-to-four ratio of mobile employee to other employees*
- *Value of time sensitive email or voice call is $10 each*

Source of Value	Dollar Amount	Cumulative Returns	BlackBerry TCO	BlackBerry ROI	Payback Period
Productivity	$7,350	$7,350	$1504	488%	75 days
Workflow	$43,500	$50,850	$1504	3381%	11 days
Immediacy	$41,940	$92,790	$1504	6170%	6 days

Source of Value	Dollar Amount	Cumulative Returns	BlackBerry Net TCO	BlackBerry ROI	Payback Period
Productivity	$2,450	$7,350	$1228	598%	61 days
Workflow	$43,500	$50,850	$1228	4140%	9 days
Immediacy	$41,940	$92,790	$1228	7556%	5 days

Conclusion:

BlackBerry ROI remains strong and in some aspects has been enhanced since the introduction of integrated voice and data BlackBerry handhelds. The fact that voice usage declines by 12% for BlackBerry users without voice activated on their BlackBerry handhelds but does not decline for BlackBerry users with voice activated on their BlackBerry handhelds suggests that BlackBerry users are finding increased convenience and ease of use from integrated voice and data BlackBerry handhelds.

Personal productivity continues to be a strong source of BlackBerry ROI as would be expected given that mobile effectiveness is the core objective of the BlackBerry solution. By itself, under conservative ROI scenario conditions, BlackBerry pays for itself in approximately 7 months based on personal productivity benefits alone.

The introduction of workflow efficiency in this report goes in hand with personal productivity and concludes that BlackBerry is also very important to the colleagues of BlackBerry users whether or not they happen to be BlackBerry users themselves. Even under conservative ROI scenario conditions, with workflow included, the payback period for BlackBerry is approximately 1 month. The strength of the workflow numbers also suggests that companies without an effective wireless solution are seriously undermining their competitiveness.

Immediacy remains a strong contributor to BlackBerry ROI although we recognize that some may not want to include immediacy in their ROI criteria or discount it even further than what has been presented here. The fact remains that many individuals credit BlackBerry with assisting in reaping significant financial gains and winning and holding

clients. Immediacy is difficult to quantify but we trust that readers of this report will accept in principle that immediacy provides significant value for many BlackBerry users.

The 490 IT managers that completed this study have reaffirmed that supporting BlackBerry inside organizations is not burdensome. Fifty percent of IT managers report spending 8 hours per month or less supporting their BlackBerry Enterprise Server(s). Fifty percent of IT managers report spending 13 hours per month or less supporting BlackBerry handhelds including new deployments. This equates to an average total IT time investment of 23 minutes per user per month. Every working day, each BlackBerry user recovers over twice the monthly IT time investment through personal productivity alone. BlackBerry workflow benefits and immediacy benefits further justify the costs and internal resource commitments associated with deploying and managing BlackBerry.

All of the questions in this study and the associated results apply specifically to BlackBerry. Any attempt to apply the results of this study to other mobile and wireless solutions is erroneous, and prohibited by copyright. Even small technical or performance differences between the other solution and BlackBerry can result in substantially different ROI results.

Inquiries about this report:

Chris Ferneyhough, VP Technology, Ipsos Reid
Chris.Ferneyhough@Ipsos-Reid.com