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Enabling employees to use their personal mobile devices or smartphones for business

Method – Global Employee Survey

- **Random Sample:** 20,000 full-time and part-time employees were randomly selected to participate in the survey in Q1 2011. Staff were sent e-mail survey invitations. The invitation stressed the importance of responding, assured anonymity and included a link to a secure internal web site. Surveys were conducted in nine languages: English, Brazilian Portuguese, Canadian French, French, German, Italian, Japanese, Spanish and Simplified Chinese. Completed surveys and response rates are:

	Number of Responses	Response Rate
Q1 2011	5,829	29%

- **Locations:** GMU – ASEAN (Malaysia, Philippines, Singapore, Thailand), Australia/New Zealand, CEE (Czech Republic, Hungary, Poland, Russia, Slovakia) China, India, Latin America (Argentina, Brazil, Mexico); Japan IOT; North America IOT - Canada and the United States; NE IOT – Alps (Austria, Switzerland), Nordics (Denmark, Finland, Sweden), Germany, UKI (UK, Ireland); and SE IOT - Benelux (Belgium, Netherlands), France, Italy, SPGI (Israel, Spain).

- **Field:** April 27 – May 13, 2011

- **Weighting:** The results are weighted to reflect the current sizes of company geographic and division units.

Group differences reported herein are significantly above/below a minimum 95% confidence level. Comparisons between quarterly studies are presented throughout where appropriate.

What type of mobile access plan do employees currently have?

- 27% of employees are currently part of the the Corporate Managed Plan (CMP) where the company provides them with a mobile device and pays the bill.
- **12% use their personal mobile device and get reimbursed for it on a regular basis.**
- **20% use their personal mobile device but don't get reimbursed for it.**
- **12% currently don't use their personal mobile device for work but have an interest in doing so.**
- 29% Don't regularly use their personal mobile device for work.

17% of employees who are currently using or interested in using their mobile device for work have enabled it with VPN access.

What's the motivation or hesitation behind the other 83%?

Base: Group 2 (n=3,163)

The Question: Would you like to be able to use your personal mobile device or Smartphone to access company email, instant messaging, the corporate Intranet, or company tools, even if you were NOT reimbursed?

No = 44%

Why not?

Yes = 56%

Inhibitors	(%) Selected
Expense – I don't want to pay for the additional cost of voice/data/text plan required to use my personal device	74
Work life balance - I don't want work issues to surface outside of normal business hours	59
Privacy - I am concerned about the mixing of my personal content and my business content and what IBM can do to my phone	38
Security - It is inconvenient to have to enter a long/strong password every 15-30 minutes on personal phone	34
Performance - I am worried that this will affect the performance of my phone (battery life, for example).	25
Complexity of device management - I am not comfortable with installing new IBM applications or cleaning out IBM data if I leave the company	23
Other (SPECIFY)	6

Base: Use mobile for work (n=2,250)

Wifi access and work location do not have a significant influence on employees' decision to enable their personal mobile devices.

Weekly hours of wifi access

Weekly hours worked by location

Base: Use mobile for work (n=2,250)

The type of voice, text or data plan that an employee currently has does not significantly influence their motivation to enable their mobile device.

Base: Do not have VPN access (n=1,150)

- It was theorized that having an unlimited data plan would be a strong motivator for an employee to enable VPN access.
- The relationship between type of plan and the “Yes” outcome of the dependent variable is positive—having an unlimited rather than a limited plan increases the likelihood of an employee saying “Yes”—but the relationship is not statistically significant for any of the plan types.

Monthly number of texts and voice minutes used for corporate plan and personal devices are similar.

- Neither the amount of voice minutes used or number of texts were significant predictors of personal device users decision to enable their personal devices.

Base: Use mobile for work (n=2,250)

Mobile service provider is not a significant factor in predicting if employees will enable VPN access on their mobile device.

- Verizon and Bharti have the highest satisfaction scores.
- However, overall satisfaction with mobile service providers (across all providers) is not a significant predictor of the outcome variable.
- The relationship between the variables for all of the service providers and the "Yes" outcome is positive except for Bharti (India).
- In the initial model containing all the variables,Telnor (Latin America) and ChinaMobile (China) were statistically significant predictors; however, neither were significant in the reduced model and were removed. Telnor and ChinaMobile also had a small number of responses.

Base: Use mobile for work (n=2,250)

"Getting directions" is the only work-related activity significantly motivating employees not on the CMP to enable mobile access.

Work-related activities employees use their mobile devices for

Base: Use mobile for work (n=2,250)

Apple iOS and Android operating systems are significant predictors of employees saying "Yes" to enabling their devices.

- More corporate plan users have Blackberry or Symbian operating systems.
- Apple an Android are more popular among employees using their personal devices.
- Blackberry was statistically significant in the initial model but not in the reduced model.
- 44% of corporate plan users don't know what operating system they have.

Base: Use mobile for work (n=2,250)

The amount of time an employee feels could be saved is a strong and positive predictor of the "Yes" outcome.

How much time could you save if you could use your mobile device for work?

Base: Use mobile for work (n=2,250)

Job satisfaction is a strong predictor of employees' interest in enabling their personal mobile devices.

Employees on the Corporate Managed Plan are less satisfied with their jobs.

Base: Use mobile for work (n=2,250)

55% of employees who are not already on the Corporate Managed Plan are interested in enabling their personal mobile devices with VPN access even if the company doesn't reimburse them for it.

Are you willing to enable your personal mobile device even if not reimburse for it?

- **What is driving employees to enable their own devices without reimbursement?**

- **Regularly using a mobile device to <u>find directions</u>**
  - For employees that regularly use their mobile device for finding directions, the likelihood increases 108% that they will say "Yes" to enabling their personal mobile device over employees who don't use their devices for finding directions.

- **<u>Andriod phones</u>**
  - For employees with Android Smartphones the likelihood increases 143% that they will to want to enable their device with VPN access versus employees with other operating systems.

- **Apple iphones**
  - For employees with Apple iphones the likelihood increases 119% that they will want to enable their device with VPN access versus employees with other operating systems.

- **<u>Time-Saved</u>**
  - For each additional hour of time an employee feels he or she could save <u>each week</u> by enabling their personal mobile device with VPN access, the odds of that employee actually enabling their device increases by 1.15 times up to a maximum of 5 or more hours.

- **Job Satisfaction**
  - For employees who are Very/Somewhat Satisfied with their jobs 76% more like to say "Yes" they are willing to enable their personal device than employees who are Neutral/Dissatisfied with their jobs. are not client-facing and not on the corporate plan.

Base: Do not have VPN access (n=1,150)

Factors that do not predict or negatively impact employee willingness to enable their personal devices

- **Client Facing**
  - Client Facing employees not already on the Corporate Managed Plan (the type of employees included in this model) are -34% times less likely to want to enable their personal device than employees who are not client-facing and not on the corporate plan.
  - Who are the Cient Facing employees that don't want VPN access?
    - There are 203 client facing respondents (unweighted) who say they do not want to enable their personal devices with VPN access. The job roles most often indicated by this group include:

      IT Specialists - (n=69) unweighted

      Consultants – (n=22) unweighted

      Project Managers – (n=21) unweighted

- Factors that have a directionally positive relationship with the outcome that employees will want to enable their personal devices with VPN access and were expect to predict that outcome but ended up not having a statistically significant relationship include:
  - Having an unlimited Data Plan
  - Regularly accessing email on your personal Smartphone
  - Having an icreasing percentage of time spent using a Smartphone for work-related activities.

Base: Do not have VPN access (n=1,150)

Recommendations

- Invest in or ecourage developer resources to focus their efforts on GPS or other applications that provide directions or map capabilities for mobile devices.
  - Specifically, develop applications which assist employees in locating and getting directions to company offices and client sites.
- Focus application development efforts on mobile applications specifically for Apple and Android operating systems. Create CIO requirement that mobile versions of existing applications be compatable with both Android and Apple.
- Create education and communication programs for managers and employees on the availabilty mobile or VPN access for personal devices. Give careful consideration to employee concerns about costs, work/life balance and security/privacy.
  - Mobility solutions may not be the best solution for every employee and could in some cases negatively impact job satisfaction.

Appendix: Supporting Materials

Initial Model with all variables

```
. logit EnablePersonal wifihome wifipublic wifiIBM wifimobile workhome workoff
> ice workclient worktravel voiceplan textplan dataplan  haveVPN ATT BellCanad
> a Bharti ChinaMobile Idea Orange Rogers Sprint Tmobile Telefonica Telenor Ve
> rizon Vodafone ProviderSat Android Apple Blackberry Palm Symbian VoiceTime T
> extsSent TimeSaved UseDesktop UseLaptop UseTablet  Tablet JobSatisfaction Cl
> ientFace Smartphone

note: haveVPN omitted because of collinearity
Iteration 0:   log likelihood = -430.79452
Iteration 1:   log likelihood = -370.78211
Iteration 2:   log likelihood = -370.39732
Iteration 3:   log likelihood = -370.39684
Iteration 4:   log likelihood = -370.39684

Logistic regression                               Number of obs   =        630
                                                  LR chi2(40)     =     120.80
                                                  Prob > chi2     =     0.0000
Log likelihood = -370.39684                       Pseudo R2       =     0.1402

------------------------------------------------------------------------------
EnablePers~l |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    wifihome |  -.1436251   .1558143    -0.92   0.357    -.4490155    .1617654
  wifipublic |   .0703417   .2464956     0.29   0.775    -.4127808    .5534642
     wifiIBM |   .1840826    .140557     1.31   0.190    -.0914041    .4595693
  wifimobile |   -.029784   .1627953    -0.18   0.855    -.3488568    .2892889
    workhome |   .2146279   .1650288     1.30   0.193    -.1088227    .5380785
  workoffice |  -.0274436   .1416751    -0.19   0.846    -.3051217    .2502345
  workclient |  -.0893029   .1762736    -0.51   0.612    -.4347927    .2561869
  worktravel |  -.4138993   .2407614    -1.72   0.086     -.885783    .0579844
   voiceplan |  -.1440974   .2120895    -0.68   0.497    -.5597853    .2715904
    textplan |   .1212573   .2050839     0.59   0.554    -.2806998    .5232145
    dataplan |   .2019864   .1467433     1.38   0.169    -.0856252    .4895981
     haveVPN |  (omitted)
         ATT |   .3825232    .290714     1.32   0.188    -.1872658    .9523123
  BellCanada |   .6821998   .7086934     0.96   0.336    -.7068137    2.071213
      Bharti |  -.2510731   .3733748    -0.67   0.501    -.9828743     .480728
 ChinaMobile |   1.019552   .3788427     2.69   0.007     .2770344     1.76207
        Idea |   .2437923   1.008428     0.24   0.809    -1.732689    2.220274
      Orange |     .02985   .6118267     0.05   0.961    -1.169308    1.229008
      Rogers |   -1.36163   .8588223    -1.59   0.113     -3.04489    .3216309
      Sprint |   .5786465   .6365877     0.91   0.363    -.6690424    1.826335
     Tmobile |   .3035481   .5726893     0.53   0.596    -.8189024    1.425998
  Telefonica |   1.207407   .5001325     2.41   0.016     .2271651    2.187648
     Telenor |   .7169148   .7386136     0.97   0.332    -.7307412    2.164571
     Verizon |   .0650139   .4629206     0.14   0.888    -.8422938    .9723216
    Vodafone |   .2778796   .3094296     0.90   0.369    -.3285914    .8843505
 ProviderSat |   .2544014   .1436151     1.77   0.076    -.0270791    .5358819
     Android |   1.239986   .2972463     4.17   0.000     .6573939    1.822578
       Apple |    1.30348   .2852371     4.57   0.000     .7444253    1.862534
  Blackberry |   1.012175   .3675105     2.75   0.006     .2918673    1.732482
        Palm |   .9824436   .9281975     1.06   0.290      -.83679    2.801677
     Symbian |   .3571105   .2747634     1.30   0.194    -.1814158    .8956368
   VoiceTime |   .0233672   .0704032     0.33   0.740    -.1146205     .161355
   TextsSent |  -.0562891   .0697469    -0.81   0.420    -.1929906    .0804123
   TimeSaved |   .1819572   .0454839     4.00   0.000     .0928105    .2711039
  UseDesktop |   .3563953   .3213462     1.11   0.267    -.2734317    .9862224
   UseLaptop |   .0514695   .3588174     0.14   0.886    -.6517998    .7547387
   UseTablet |   .3375241   .3823919     0.88   0.377    -.4119502    1.086998
      Tablet |   .2024816   .2124765     0.95   0.341    -.2139646    .6189278
JobSatisfa~n |   .2467512     .12174     2.03   0.043     .0081451    .4853573
  ClientFace |  -.4138731   .2130411    -1.94   0.052     -.831426    .0036798
  Smartphone |   .5435143   .2534959     2.14   0.032     .0466715    1.040357
       _cons |  -2.745878   .9154166    -3.00   0.003    -4.540062   -.9516945
------------------------------------------------------------------------------
```

Reduced Model

```
. logit EnablePersonal  useDirections useEmail  Android Apple Blackberry TimeS
> aved Workstation i. JobSat2  DataPlan2 ClientFace i.  UseSmaprtphone25up

Iteration 0:   log likelihood = -505.27692
Iteration 1:   log likelihood = -450.16908
Iteration 2:   log likelihood = -449.77961
Iteration 3:   log likelihood = -449.77928
Iteration 4:   log likelihood = -449.77928

Logistic regression                               Number of obs   =        741
                                                  LR chi2(12)     =     111.00
                                                  Prob > chi2     =     0.0000
Log likelihood = -449.77928                       Pseudo R2       =     0.1098

------------------------------------------------------------------------------
EnablePers~l |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
useDirecti~s |   .7371436   .2312887     3.19   0.001     .2838262    1.190461
    useEmail |   .3427832   .2046654     1.67   0.094    -.0583537    .7439201
     Android |   .8888415    .250789     3.54   0.000     .3973041    1.380379
       Apple |   .7843435    .222149     3.53   0.000     .3489396    1.219747
  Blackberry |   .4022207   .3066308     1.31   0.190    -.1987647    1.003206
   TimeSaved |   .1462897   .0375994     3.89   0.000     .0725962    .2199831
 Workstation |  -.2753353   .1680031    -1.64   0.101    -.6046153    .0539448
   2.JobSat2 |   .5674263   .1707375     3.32   0.001     .2327869    .9020657
   DataPlan2 |  -.0581209   .1760044    -0.33   0.741    -.4030832    .2868413
  ClientFace |  -.4268517   .1673424    -2.55   0.011    -.7548368   -.0988666
             |
UseSmaprtp~p |
           1 |   .0324092    .197037     0.16   0.869    -.3537763    .4185947
           2 |    .427918   .3968138     1.08   0.281    -.3498227    1.205659
             |
       _cons |  -.7525494   .2365407    -3.18   0.001    -1.216161   -.2889382
------------------------------------------------------------------------------
```

Reduced Model Odds Ratio

```
. logit, or

Logistic regression                               Number of obs   =        741
                                                  LR chi2(12)     =     111.00
                                                  Prob > chi2     =     0.0000
Log likelihood = -449.77928                       Pseudo R2       =     0.1098

------------------------------------------------------------------------------
EnablePers~l | Odds Ratio   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
useDirecti~s |   2.089957   .4833834     3.19   0.001     1.328202    3.288597
    useEmail |   1.408863   .2883456     1.67   0.094     .9433163    2.104168
     Android |    2.43231   .6099966     3.54   0.000     1.487808    3.976408
       Apple |   2.190968   .4867213     3.53   0.000     1.417564    3.386333
  Blackberry |   1.495141   .4584564     1.31   0.190     .8197427    2.727011
   TimeSaved |   1.157531   .0435225     3.89   0.000     1.075296    1.246056
 Workstation |   .7593175   .1275677    -1.64   0.101     .5462845    1.055426
   2.JobSat2 |   1.763722   .3011335     3.32   0.001     1.262112    2.464689
   DataPlan2 |   .9435358   .1660665    -0.33   0.741     .6682565    1.332213
  ClientFace |   .6525603    .109201    -2.55   0.011     .4700873    .9058635
             |
UseSmaprtp~p |
           1 |    1.03294   .2035274     0.16   0.869      .702032    1.519824
           2 |    1.53406   .6087363     1.08   0.281      .704813    3.338958
------------------------------------------------------------------------------
```