

# Wireless Survey Questionnaire

Q1. Which of the following statements best characterizes implementation of wireless data communications at your college or university?

1. We have already implemented comprehensive wireless data communications
2. We have already implemented limited wireless data communications
3. We are in the planning stages and have begun pilot implementation
4. We are in the planning stages and have not yet implemented pilot programs
5. We intend to implement wireless communications but have not yet begun planning process
6. We have no plans to implement wireless communications

[IF NO PLANS; Q1=6]

What do you see as the primary barriers to your institution adopting wireless data communications?

[MARK ALL THAT APPLY]

- 1 Too costly
- 2 Unproven/technology not developed enough
- 3 Have other IT priorities
- 4 No benefits/applications
- 5 Security concerns
- 6 Other\_\_\_\_\_
- 7 None

[IF NO PLANS GO TO RESPONDENT INFORMATION]

[ALL Q1 = 1-5]

Is the wireless implementation part of a institution-wide initiative or is it a local process conducted an individual school or department?

1. Institution-wide
2. Local by school or department
3. Other
4. Don't know

How many wireless data communications initiatives are underway at your institution?

\_\_\_\_\_

[IF MORE THAN ONE INITIATIVE]

Have standards been established to enable interoperability between individual wireless initiatives?

- 1 Yes
- 2 No
- 3 Not applicable
- 4 Don't know

[IF YES]

What group has the responsibility to set interoperability standards?

1. IT department
2. Wireless committee
3. Other \_\_\_\_\_

## IMPLEMENTORS [IF Q1 = 1-3]

How would you describe the scope of your institution's current wireless data communications implementation?  
(If your institution has more than one campus, respond about your primary campus.)

1. Campus-wide
2. Specific buildings on campus
3. A specific building/location
4. Other \_\_\_\_\_

[IF NOT CAMPUS-WIDE]

Are there plans to expand the network campus-wide?

1. Yes
2. No

Does this implementation include outdoors use?

1. Yes
2. No, but we have plans for outdoor use.
3. No, and there are no plans for outdoor use

[IF YES TO 1]

What percentage of your campus's geographic area would you say is covered by wireless networking? (Define the geographic area as the area encompassing all academic, administrative and residential buildings.)

\_\_\_\_%

[IF YES TO 1 OR 2]

In 24 months from now, what percentage of your campus's geographic area will be covered by wireless networking? (Define the geographic area as the area encompassing all academic, administrative and residential buildings.)

\_\_\_\_%

What buildings currently have wireless capability? [MARK ALL THAT APPLY]

1. Administrative buildings
2. Library
3. Classrooms/lecture halls
4. Building(s) that is (are) primarily used as research center(s)
5. Dormitories
6. Other [PLEASE specify]\_\_\_\_\_

Which buildings will have wireless capability in the next 24 months? [MARK ALL THAT APPLY]

1. Administrative buildings
2. Library
3. Classrooms/lecture halls
4. Building(s) that is (are) primarily used as research center(s)
5. Dormitories
6. Other [PLEASE specify]\_\_\_\_\_

When did your institution first implement wireless network capability?

1. 2001
2. 2000
3. 1999
4. 1998
5. 1997 or earlier

Who currently utilizes wireless networks at your campus? [MARK ALL THAT APPLY]

1. Administration
2. Faculty
3. Graduate students/researchers
4. Undergraduates
5. Other\_\_\_\_\_

Specifically, which departments or colleges are utilizing the wireless networks? [MARK ALL THAT APPLY]

1. Physical sciences (Chemistry, biology, etc.)
2. Social Sciences (Anthropology, psychology, etc)
3. Language arts/history
4. Math
5. Computer science
6. Engineering
7. Business
8. Law
9. Medical
10. Other\_\_\_\_\_

Did you conduct an RF site study?

1. Yes, done using internal resources
2. Yes, done by an external third party service/contractor
3. No study performed

[IF NO STUDY, SKIP TO QUESTION ON ANTENNA SCHEME]

[IF RF STUDY PERFORMED INTERNALLY]

Which statement is most indicative of how your staff gained the expertise to conduct the RF site study?

1. Personnel on staff had the expertise prior to the study
2. The staff was trained specifically to conduct this study
3. No specialized training/skills were needed

[IF RF STUDY CONTRACTED TO EXTERNAL THIRD PARTY, NEXT TWO QUESTIONS]

Did the external contractor have a demonstrated track record (known reputation or provided references) of installing wireless networks?

1. Yes
2. No
3. Don't know

What was your satisfaction with the external contractor's service?

1. Very Satisfied
2. Somewhat satisfied
3. Somewhat dissatisfied
4. Very dissatisfied

Did you install a specific antenna scheme to maximize coverage and capacity?

1. Yes ——>SPECIFY\_\_\_\_\_
2. No

How do you deploy electrical power to access points?

1. \_\_\_\_% are powered over Ethernet
2. \_\_\_\_% are powered by dedicated AC circuits

Which of the following types of devices have access to wireless networks? [MARK ALL THAT APPLY]

1. Mobile laptops
2. Desktop PCs
3. PDA
4. Handheld devices/Scanners
5. Cellular phones
6. Others\_\_\_\_\_

Do you have plans to add any of the following devices to the wireless network [MARK ALL THAT APPLY]  
[THOSE NOT SELECTED ABOVE]

1. Mobile laptops
2. Desktop PCs
3. PDA
4. Handheld devices/Scanners
5. Cellular phones
6. Others——>SPECIFY\_\_\_\_\_

Which wireless technologies are supported by the wireless network [MARK ALL THAT APPLY]

1. 802.11b
2. 802.11a
3. 802.11g
4. HomeRF
5. Bluetooth
6. HiperLAN/2
7. GPRS/2.5G
8. UMTS/3G cellular
9. Broadband
10. Other——>SPECIFY\_\_\_\_\_

In the next 24 months which technologies do you expect to be supported by the wireless networks?  
[MARK ALL THAT APPLY]

11. 802.11b
12. 802.11a
13. 802.11g
14. HomeRF
15. Bluetooth
16. HiperLAN/2
17. GPRS/2.5G
18. UMTS/3G cellular
19. Broadband
20. Other——>SPECIFY\_\_\_\_\_

What level(s) of Wireless Encryption/Authentication do you enforce? [MARK ALL THAT APPLY]

1. 40-bit Wired Equivalency Privacy (WEP)
2. 128-bit Wired Equivalency Privacy (WEP)
3. Extensible Authentication Protocol (EAP) 802.1x draft solution
4. IP VPN (3-DES IPSec)
5. Firewall
6. Kerberos
7. Remote Authentication Dial-In User Service (RADIUS)
8. Advanced Encryption Standard (AES)
9. Wireless vendor supplied proprietary solution
10. 3rd-party hardware/software security solution
11. Other ——>SPECIFY\_\_\_\_\_
12. None

[IF WEP]

Do you force changing of encryption keys on periodic basis?

1. Yes
2. No

[IF WEP]

Do you have plans to replace WEP with Extensible Authentication Protocol (EAP) 802.1x draft or another solution?

1. Yes-Replacing with Extensible Authentication Protocol (EAP) 802.1x draft
2. Yes-Replacing with other solution
3. No

What level(s) of Application Encryption/Authentication do you enforce?

1. Web-based SSL
2. Secure Shell/FTP (SSH)
3. Other ——>SPECIFY\_\_\_\_\_
4. None

Do you have a standard for wireless cards

- 1 Yes——>SPECIFY\_\_\_\_\_
- 2 No

How do students obtain wireless cards?

- 1 Students are given the cards at no additional charge (included in tuition)
- 2 Students must purchase the card from institution (Institution-wide)
- 3 Students must purchase from specific college/department
- 4 Students have option of obtaining from institution or on their own
- 5 Students must purchase on their own
- 6 Other\_\_\_\_\_
- 7 Don't know

Are students at your institution required to have notebook PCs?

Yes, all students

Yes, in some colleges/disciplines

No

[IF YES/1 or 2]

Is wireless access required of students that are required to have notebook PCs?

- 1 Yes, all
- 2 Yes, some
- 3 No

[IF NO/3 TO REQUIRED TO HAVE NOTEBOOKS]

What percentage of students currently have notebooks?

\_\_\_\_%

What percentage of students would you say have access to the wireless networks?

\_\_\_\_%

How are users able to print documents from the wireless networks? [MARK ALL THAT APPLY]

- 1 Printing is done from a central printer for all users
- 2 Users are able to select from several distributed printing devices
- 3 Users can print only at a printer designated for them
- 4 There is no network printing
- 5 Other \_\_\_\_\_

Is there a problem with students using wireless access during normal class/lecture time for content not pertaining to the class being taught?

- 1 Yes, student access to non-pertinent content during class time is creating a problem
- 2 No, student access to the wireless network during class time is not a problem

How do you provide support to end-users of the wireless network?

1. Special university wireless support help desk
2. Outsourced/Third-party wireless support help desk
3. Same helpdesk that supports wired network
4. Other \_\_\_\_\_

What group maintains the wireless IT infrastructure in your institution?

1. IT infrastructure supported by same group that supports wired network
2. University Wireless Team
3. Outsourced/Third-party wireless support
4. Other \_\_\_\_\_

[GO TO PLANNING PROCESS]

## HAVE PLANS TO IMPLEMENT [IF Q1 = 4]

What are the plans for the scope of your institution's wireless data communications implementation? (If your institution has more than one campus, respond about you primary campus.) [MARK ALL THAT APPLY]

1. Campus-wide
2. Specific buildings on campus
3. A specific building/location
4. Other [please specify] \_\_\_\_\_

When do you expect the implementation of your current plan for wireless data networks to be complete?

1. 2001
2. 2002
3. 2003
4. 2004 or beyond

What buildings will have wireless capability? [MARK ALL THAT APPLY]

1. Administrative buildings
2. Library
3. Classrooms/lecture halls
4. Building(s) that is (are) primarily used as research center(s)
5. Dormitories
6. Other [PLEASE specify] \_\_\_\_\_

Who will have access to wireless networks? [MARK ALL THAT APPLY]

1. Administration
2. Faculty
3. Graduate students/researchers
4. Undergraduates
5. Other\_\_\_\_\_

Which departments or colleges are part of the wireless data network initiative? [MARK ALL THAT APPLY]

11. Physical sciences (Chemistry, biology, etc.)
12. Social Sciences (Anthropology, psychology, etc)
13. Language arts/history
14. Math
15. Computer science
16. Engineering
17. Business
18. Law
19. Medical
20. Other\_\_\_\_\_

Which of the following types of devices will have access to wireless networks? [MARK ALL THAT APPLY]

1. Mobile laptops
2. Desktop PCs
3. PDA
4. Handheld devices/Scanners
5. Cellular phones
6. Others\_\_\_\_\_

Have you established a standard for wireless cards?

- 1 Yes—>SPECIFY\_\_\_\_\_
- 2 No

How will students be able to obtain wireless cards?

- 1 Students will be given the cards at no additional charge (included in tuition)
- 2 Students must purchase card from Institution (Institution-wide)
- 3 Students must purchase from specific college/department
- 4 Students have option of obtaining from college or on their own
- 5 Students must purchase on their own
- 6 Other\_\_\_\_\_

Are students at your institution required to have notebook PCs?

1. Yes, all students
2. Yes, in some colleges/disciplines
3. No

[IF NO]

Will students be required to have notebook PCs when wireless communications is implemented?

1. Yes, all students
2. Yes, in some colleges/disciplines
3. No

[IF YES/1 OR YES/2 TO EITHER OF PRECEDING TWO QUESTIONS]

Will wireless access be required of all students?

- 1 Yes, all
- 2 Yes, some
- 3 No

[IF NO TO TWO QUESTIONS ABOUT NOTEBOOKS REQUIRED (NOW OR FUTURE)]

What percentage of students currently have notebooks?

\_\_\_\_%

Which of the following are part of your plans to provide printer support for wireless data network users?

1. Printing is done from a central printer for all users
2. Users are able to select from several distributed printing devices
3. Users can print only at a printer designated for them
4. There is no network printing
5. Other\_\_\_\_\_

How do you plan to provide support to end-user who access the wireless network?

1. Special university wireless support help desk
2. Outsourced/Third-party wireless support help desk
3. Same helpdesk that supports wired network
4. Other\_\_\_\_\_

What group will maintain the wireless IT infrastructure in your institution?

1. IT infrastructure supported by same group that supports wired network
2. University Wireless Team
3. Outsourced/Third-party wireless support
4. Other\_\_\_\_\_

## PLANNING PROCESS [IF Q1 = 1-5]

What group or groups at your institution initiated the process of implementing wireless data networks?

[MARK ALL THAT APPLY]

1. IT department
2. Administration
3. Library
4. Research Center
5. Specific college or department—>SPECIFY\_\_\_\_\_
6. Faculty
7. Students

8. IT manufacturer (Dell, Compaq, Microsoft,)
9. Communication provider
10. System vendor
11. Other\_\_\_\_\_

What groups or groups were (are) involved in the planning and implementation process? [Rate by: (1) Highly involved, a leader in the process; (2) Moderately involved; (3) Not involved or very little involvement]

[MARK ALL THAT APPLY]

1. IT department
2. Administration
3. Library
4. Research Center
5. Specific college or department—>SPECIFY\_\_\_\_\_
6. Faculty
7. Students
8. IT manufacturers (Dell, Compaq, Microsoft, etc.)
9. Communication provider
10. System vendor
11. Other\_\_\_\_\_

How would you characterize the level of co-operation and agreement among the groups involved in the implementation process?

1. Level of agreement and co-operation were high
2. Some disagreements occurred but in general process went smoothly
3. Planning process was marked by frequent disagreements
4. Other\_\_\_\_\_

How would you rate the importance of implementing wireless networks in terms of your institution's overall IT strategy?

1. High importance/Has priority over other IT initiatives
2. Important but other initiatives have higher priority
3. Low importance/priority

[IF Q1 = 1-3]

How long did the planning process take before beginning to implement the wireless network?

\_\_\_Months

[IF Q1 = 1-2]

How long it did take to implement the wireless network after the planning phase?

\_\_\_Months

Approximately how much did you spend/is budgeted to implement the wireless data network?

\$\_\_\_\_\_

What were/are the sources of funding for wireless implementations, by approximate percentage?

- \_\_\_\_% Institution's overall IT budget  
 \_\_\_\_% Specific departments' budgets  
 \_\_\_\_% As part of specific academic/research grant  
 \_\_\_\_% IT supplier donations  
 \_\_\_\_% Student usage fees  
 \_\_\_\_% Other (specify)\_\_\_\_\_

What are the sources of funds for maintaining and operating the wireless network? [MARK ALL THAT APPLY]

1. Institution's overall IT budget
2. Departments/schools contribute based on usage/other metric
3. Specific departments budget
4. Part of specific academic/research grant
5. IT supplier donations
6. Student usage fees
7. Other\_\_\_\_\_

Approximately how many students and faculty will the wireless network serve? (Please specify a number.)

\_\_\_\_\_

How important is/was each of the following in terms of your institution's decision to implement a wireless network? [Please answer on a ten point scale where 10 is very important and 1 is not important at all]

1. Savings compared to installing wired network
2. Savings in operating costs over wired networks
3. Easier move/adds/changes compared to wired networks
4. Ability of wireless networks to meet growth in institution's computing needs
5. Student and teacher access to networks during classes/networks
6. Improved student access to networks at any time
7. Improved faculty access to networks at any time
8. Improved access for commuter students
9. Competitive pressures (other institutions have implemented wireless networks)
10. For institution to be perceived as leading edge
11. To solve a specific problem/application

[IF SPECIFIC PROBLEM/APPLICATION 7 or higher]

What is the specific application or problem

\_\_\_\_\_

[IF Q1 = 1-3]

What were some of the key challenges you faced in implementing a wireless data network?

1. More costly than expected
2. Interoperability problems with wired networks
3. Security issues
4. End-user support issues
5. Support for wireless network printing
6. Other\_\_\_\_\_

[IF Q1 = 1-3]

Overall, has the wireless data networks met, exceeded, or missed your institution's expectations, so far?

1. Exceeded expectations
2. Met expectations
3. Fell short of expectations

Educause and IDC will be conducting phone interviews with some institutions to probe further into wireless networks, including implementation issues, budgeting, security, and benefits of usage. Would you be interested in participating in this survey?

1. Yes
2. No