

2005/2006 National Technology Readiness Survey

– Summary Report –  
June , 2006

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## Highlights from the 2005/2006 National Technology Readiness Survey

### Consumer Awareness and Interest in 3G Technology

- While common in other markets, 3G technology, which provides faster bandwidth and greater functionality for portable devices like cell phones, is rare and not well known in the United States, with 47 percent of cell phone users claiming they never heard of 3G and 35 percent indicating they heard of it but have no knowledge (page 6)
- Out of a list of 17 enhanced features that 3G might bring to portable devices, the most interesting to consumers is global positioning technology that provides navigational help – only 9 percent of cell phone users have this capability, but 50 percent of those without it consider it desirable (page 4)

### Telecommuting

- Only 2 percent of adults who work telecommute full-time; another 9 percent telecommute part-time and 8 percent have home-based businesses (page 7)
- The median commuting time reported by U.S. workers with commutes is 20 minutes one-way, and the median distance is 10 miles one-way (page 8)
- The share of telecommuters in the U.S. would grow from 11 percent to 25 percent if it were practiced by everyone who had the option to telecommute and/or had the kind of job amenable to telecommuting (page 9)
- If full advantage was taken of telecommuting by those who could, the reduction in miles driven would save \$3.9 billion a year in fuel and the time savings would be equal to 470,000 jobs; however, the payoff from telecommuting is limited because only a fraction have the option or type of job allowing it, and if people who started to telecommute would tend to do it only a day or two a week (page 10)

### E-government

- 33 percent of online users have conducted business with a government entity online over a 12-month period, compared to 26 percent in 2004 (Page 11)
- The satisfaction level for doing business with government online is 65 percent for local/state sites and 74 percent for federal government sites, which is behind the levels for e-commerce sites in general (Page 12)

### E-services

- From 2000 to the 2006, the share of online consumers buying items less than \$10 via the Internet grew from 20 percent to 44 percent, more than doubling (Page 13)
- Some of the fastest growth in e-services has been in banking – the incidence of online consumers moving/withdrawing bank funds online grew from 11 percent in 2000 to 43 percent in 2006 (Page 14)
- In 2006, 44 percent of online consumers have purchased directly from other consumers using an auction site or online classified, up from 30% in 2004 (Page 15)

### E-health

- 12 percent of online adults have purchased prescription drugs online from a U.S. retailer in a 12-month period, double that in 2004 (Page 15)

## Introduction

The National Technology Readiness Survey (NTRS) tracks beliefs about technology and key behaviors related to the Internet and e-services. It includes measures of consumer technology readiness and identifies emerging trends in commerce and society.

The study is administered by Rockbridge Associates, Inc., a technology research firm, and sponsored by the Robert H. Smith School of Business' Center for Excellence in Service at the University of Maryland. The study was founded by Charles L. Colby, president of Rockbridge, and Professor A. Parasuraman, University of Miami, both senior fellows at the Center for Excellence in Service.

## Methodology

The NTRS is based on a random sample of U.S. adults (18 years or older). The study has been conducted six times since 1999 (see below). A special African American and Hispanic NTRS was conducted in 2003.

From 1999 to 2004, the NTRS was based on a random-digit dialing telephone survey. In the most recent wave, one half (501) of the study sample consists of telephone surveys conducted in December 2005, and one half (514) consists of web surveys sampled from a web panel in February 2006.

Wave	Sample Size	Margin of Error
Jan 1999	1000	+/- 3 percent
Feb 2000	1000	+/- 3 percent
Nov 2001	501	+/- 4 percent
Nov 2002	501	+/- 4 percent
Nov 2004	1000	+/- 3 percent
Dec 2005/Feb 2006	1015	+/- 3 percent

The following report covers key findings from the 2005/6 NTRS. Some of the topics discussed here were based on a sub-sample of 507 respondents and have a margin of error of +/- 4 percentage points.

## Findings

Key findings from the 2004 NTRS include the following areas:

- Mobile Phone Technology
- Telecommuting
- E-government
- E-service trends
- E-health

### Consumer Awareness and Interest in 3G Technology

The United States was once a leader in the availability of mobile phone technology, but now lags behind other countries in advanced functionality inherent in “3G” (third generation) networks. Cell phone users in countries with newer infrastructure, such as Japan and Korea, have access to more advanced 3G features – ranging from rich multimedia functions to global positioning – that are of limited availability in the United States.

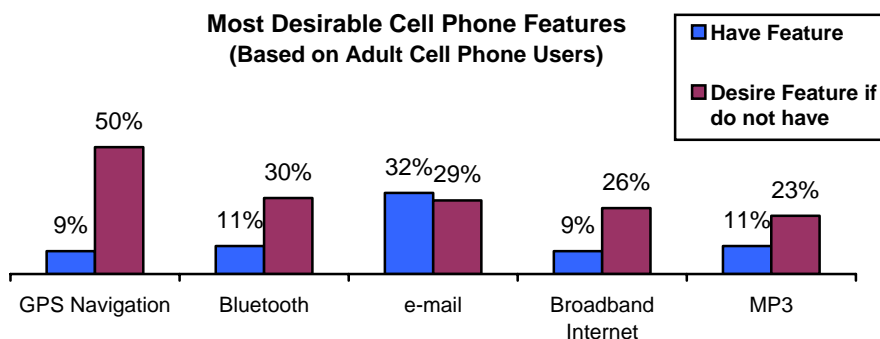
The NTRS examined awareness and interest in 3G features among the general population of cell phone users. According to the survey, 77 percent of adults now have cell phones for personal use. In addition, 24 percent of adults have cell phones for work/business use, although nearly all of these users also have personal phones.

### Availability and Interest in Advanced Mobile Phone Features

The study examined availability, usage and interest in 17 mobile phone features that will be enhanced by 3G technology in the future (see table below). The most common features associated with 3G technology now available on mobile phones are *text messaging, mobile Internet access, email and picture messaging*. There is limited availability on phones of more cutting-edge features that involve audio and video content, such as videoconferencing, streaming video, or listening to music or radio programming.

Having a feature on a phone does not mean it will be used. Features that get used the most *when available* include text messaging, broadband Internet access, mobile Internet, picture messaging, MP3, Bluetooth (to connect devices wirelessly), and email.

In the current environment, the most widely used advanced cell phone feature is text messaging (44 percent of users have and use this feature). No other feature is used by more than a fifth of cell phone owners. However, certain features show great promise for the future when 3G networks are more widespread in the U.S. and awareness increases. The number one feature in terms of interest is *global positioning technology* that allows users to get directions or navigate to a location of interest; while only 9 percent of cell phone owners have this feature on their phones, and only 3 percent in total (or 37 percent of those who have the feature) use this, 50 percent of those who lack this feature on their phones consider it to be “a desirable feature to have.” Other highly desirable cell phone features include Bluetooth (which allows a wireless connection to other devices), email, broadband Internet access, and the ability to play MP3 files uploaded from another device.



The 2005/6 National Technology Readiness Survey  
 Summary Report: June 20, 2006

Availability, Usage and Interest in Mobile Phone Features				
	Feature Available on Phone	Have Used Feature (if have it)	Net Usage (Have and used)	Would be Desirable to Have (if do not have)
<i>Base: Adults who Own Cell Phones</i>	(410)	Base Varies	Base Varies	Base Varies
	%	%	%	%
Text messaging (a)	69	64	44	15
Mobile web or Internet (e)	36	49	18	19
Send and receive e-mail (d)	32	41	13	29
Picture messaging (b)	29	46	13	20
Bluetooth technology, which provides a wireless connection between devices over a short distance (q)	11	45	5	30
Play MP3 or other music files uploaded from your computer or another device you own (h)	11	47	5	23
Broadband Internet access (r)	9	57	5	26
Use GPS (Global Positioning technology) to get directions or navigate to a certain address or place of interest (p)	9	37	3	50
Download audio content over the air (i)	9	30	3	13
Video messaging (c)	11	16	2	15
Listen to live radio programming over the air (g)	7	30	2	19
Streaming music content over the air (f)	7	22	2	15
Watch video content uploaded from your computer or another device you own (l)	6	39	2	15
Watch live video programming over the air (k)	6	21	1	17
View streaming video content over the air (j)	5	22	1	12
Participate in live video conferences (n)	3	25	1	12
Download video content over the air onto your mobile phone or device (m)	6	9	1	14
"We will now list some features of mobile phones. For each one, please tell us if you currently have the ability to do or use this feature with your mobile phone or device. The feature is: Do you have this on your mobile phone or device? IF HAVE: Have you used this? IF DO NOT HAVE: Would this be a desirable feature to have (or would it not matter)?"				
Source: 2005/2006 National Technology Readiness Survey				

Global Positioning Feature

The approximately half of mobile phone users who consider global positioning features on their phones to be “desirable” are unique, being more educated, younger and mobile (see table below). For example, 43 percent of those interested in this technology commute over 15 miles one way, compared to only 30 percent of those not interested in this feature. They are also more likely to have accessed the Internet away from their home or office, again, suggesting a mobile lifestyle. Those who currently have GPS navigation features on their phones are also unique. Like those who desire the feature, they are younger and more mobile.

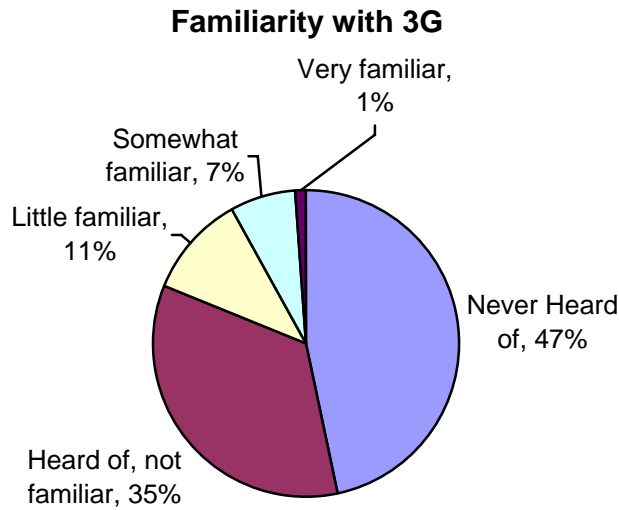
The general online behaviors of users and desirers are generally similar to those who lack interest, with a couple of exceptions. Those who have the feature are also more likely to be early adopters (“the first ... to acquire new technology...”). Users are more likely to have signed up for telecommunications services online and to have taken a course online. These behaviors suggest potential channels that might be used to market GPS technology in the future.

Profile of Mobile Phone Owners Based on Usage of or Interest in Global Positioning/Navigation Features			
	<b>A. Have Feature (37)</b>	<b>B. Desire Feature (188)</b>	<b>C. Do not Desire (185)</b>
<i>Base (own cell phones):</i>	%	%	%
Possess a 4 year College Degree	20 B	37 A	29
Under Age 30	30	29 C	19 B
Age 45+	35 C	38	53 A
Commutes Less than 10 minutes one way	20 C	24 C	40 A B
Commutes Over 30 minutes one way	19	22 C	12 B
Commutes Over 15 miles one way	44	43 C	30 B
In general, I am among the first in my circle of friends to acquire new technology when it appears (agree strongly/somewhat)	46 C	31	24 A
In the past 12 months, have you accessed the Internet from any places other than home or work? (yes)	41	44 C	32 B
<i>Base: (own cell phone, have Internet access)</i>	(35)	(179)	(174)
Signed up for a telecommunications service online in past 12 months	38 B C	14 A C	6 A B
Taken a course taught online in past 12 months	26 C	20 C	8 A B
A means significantly different from those who “have feature”; B means significantly different from those who “desire” the feature; C means significantly different from those who “do not have and do not desire.”			
“We will now list some features of mobile phones. For each one, please tell us if you currently have the ability to do or use this feature with your mobile phone or device. The feature is: ‘Use GPS (Global Positioning technology) to get directions or navigate to a certain address or place of interest.’ Do you have this on your mobile phone or device? IF HAVE: Have you used this? IF DO NOT HAVE: Would this be a desirable feature to have (or would it not matter)?”			
Source: 2005/2006 National Technology Readiness Survey			

### Awareness and Interest in 3G

While 3G technology is commonplace in many countries, particularly in Asia, awareness of it is low in the United States. The survey presented the following description to consumers: “3G, or ‘third generation’ wireless technologies, enable users of wireless communications devices such as mobile phones, to use them in new ways through the use of faster data transfer speeds. Users of 3G can send video and picture messages from their mobile devices as well as participate in live video conferences. They are also able to stream or download audio and video content, music and multi-player games. Mobile devices with 3G technologies can also be equipped with GPS, or Global Positioning services, which can be used for navigating.”

Almost half (47 percent) of mobile phone owners have never heard of 3G technology, while most others (35 percent) have heard of the concept but are not at all familiar with what it means. Only 1 percent are “very familiar” and another 7 percent are “somewhat familiar” with 3G technology.



Less than 1 percent of mobile phone owners (0.7 percent) own a 3G Device now, which is not surprising because 3G networks and features are not widely available in the U.S. yet. Consumers are not ready to embrace such technology, and will probably need to learn a lot more before they adopt features that become available in the U.S. Only 13 percent of mobile phone owners feel they will “probably” or “definitely” get a 3G device in the next 12 months, assuming availability at a reasonable price. Another 26 percent “might or might not” acquire a phone with this technology.<sup>1</sup>

<sup>1</sup> “If it were available today at a reasonable price, how likely would you be to purchase a mobile phone or device equipped with 3G or third generation technology in the next 12 months? Would you say: Definitely/ Probably/ Might or Might Not/ Probably Not/ or Definitely Not? NOT READ: I ALREADY OWN A DEVICE; NOT SURE.

Consumers are more certain in the long run that they will acquire 3G devices. In the next five years, 29 percent will “probably” or “definitely” get a 3G device, and 27 percent might or might not.<sup>2</sup> Even so, it appears that consumers will need more education and will need to see the benefits of this technology demonstrated before they embrace these features.

Among the approximately half of mobile phone users who at least “might” acquire 3G technology in the next five years, there is agreement on the important reasons for interest. The main drivers of interest include safety, effective communications, and saving time. To a lesser degree, there is interest in reducing or simplifying gadgets and getting more timely news and information. The percentage indicating various factors are “important benefits of 3G technology” is as follows<sup>3</sup>:

1. Being safer (88%)
2. Communicating more effectively (86%)
3. Saving Time (85%)
4. Reducing or simplifying the number of gadgets (74%)
5. Having more timely news and information (62%)
6. Having more fun (54%)
7. Making entertainment more portable (44%)
8. Building relationships with people online (23%).

### Telecommuting

Telecommuting is a topic of interest in the NTRS because information technology makes working at remote locations possible in a time of high gasoline costs and concerns about the environmental impact of automobile traffic. The infrastructure for telecommuting is extensive, with home Internet access now at 76 percent, with 66 percent of these users having high speed access. Among people who are employed full-time, home access is 82 percent and 69 percent of these users have high speed access.

### Commuting and Telecommuting Patterns

The vast majority of workers in the U.S. commute to work, with 70 percent reporting they commute all the time to work<sup>4</sup>. Among the other 30 percent:

- 9 percent telecommute part-time and travel to their jobs the rest of the time; half of these individuals telecommute just 1 or 2 days a week
- 2 percent telecommute full-time
- 8 percent have home-based businesses, and therefore do not need to commute
- 12 percent have jobs that do not involve a traditional commute; while the study did not delve into these jobs in detail, an example would be that of a laborer who does not commute back and forth to the same location in the traditional sense.

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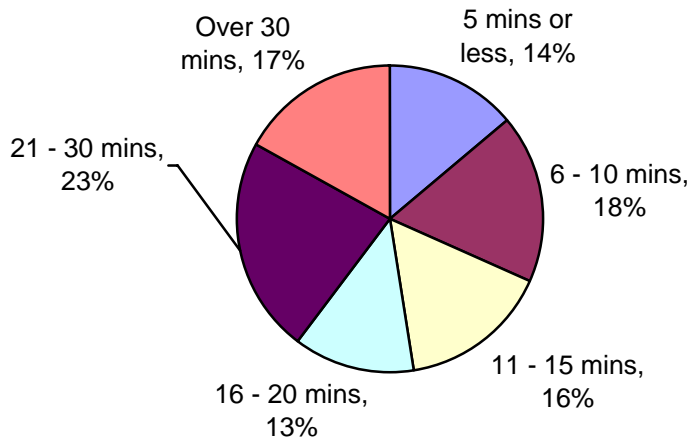
<sup>2</sup> *“IF NOT DEFINITELY LIKELY TO GET IN 12 MONTHS: And how likely would you be to get a mobile phone or device equipped with 3G in the next 5 years? Would you say: Definitely/ Probably/ Might or Might Not/ Probably Not/ or Definitely Not?”*

<sup>3</sup> *“Which of the following would be important benefits of 3G technology? Yes, important; No, not important.”* Question asked of cell phone users who would Definitely, Probably or Might get a mobile device equipped with 3G in the next 5 years. Sample size = 338.

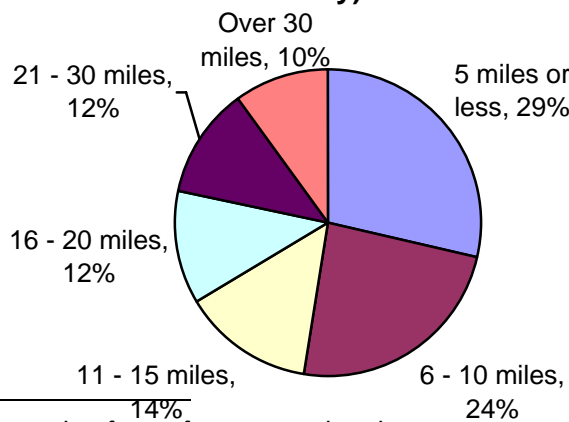
<sup>4</sup> *“Do you commute to get to work?” “During a typical week, how many days a week do you: Physically commute to work? Telecommute or work from home?”* Sample size = 366 adults who work full or part-time.

The automobile is the dominant form of transportation, relied on by 91 percent of full and part-time workers with commutes. Other modes include: ride sharing or carpooling (4 percent), mass transit or public transportation (3 percent), walking or biking (2 percent), and 1 percent use other methods.<sup>5</sup> The median commuting time is 20 minutes one-way (i.e., half have commutes at or below 20, and half are at or above this number). A third of workers (32 percent) have commutes of 10 minutes or less, while 17 percent commute over 30 minutes one-way.<sup>6</sup> Among those who drive or carpool, the median miles driven one way is 10.<sup>7</sup> A fifth (22 percent) drive over 20 miles one way.

**Average Commuting Time (One-way)**



**Average Commuting Driving Distance (One-way)**



<sup>5</sup> “On a typical day, what form of transportation do you use to get to work? ONLY ONE ANSWER ACCEPTED: Use my own automobile or vehicle; get a ride, ride-share or carpool; use mass transit or public transportation; walk or bike; another mode.” Based on full or part-time workers who commute. Sample size = 284.

<sup>6</sup> “On the days you commute to work, approximately how many minutes do you spend traveling in total to and from work? Based on full or part-time workers who commute. Sample size = 267. Reported results are divided by 2 to reflect one-way.

<sup>7</sup> “On the days you commute to work, approximately how many miles do you travel, in total, to and from work? Based on full or part-time works who commute by vehicle or car pool. Sample size = 253.

Opportunities to Telecommute

Of those with full-time commutes, 8 percent have the option of telecommuting; if they exercised this option, another 5.4 percent of the workforce would be telecommuting.

- Of those who do not have an option to telecommute, 13 percent believe they have the kind of job that would allow them to telecommute at least some of the time without interfering with their productivity. If they telecommuted, the effect would be an additional 8.6 percent of the workforce telecommuting.

Thus, if everyone who had an employer policy allowing them to telecommute took advantage of this, the share of telecommuters would grow from 11 percent to 16 percent; if everyone who could or felt they could telecommute did so, even if their employers do not currently have a policy, the share would grow to 25 percent.

<b>Adding up the Potential: Share of Workers who Telecommute or Could Telecommute based on Permission and Feasibility</b> (% of All Full or Part-time Workers: sample size = 361)		
	Addition to Telecommuting Force	Total Telecommuters
Currently Telecommute Full or Part Time*		11%
Have Option from Employer to Telecommute**	+ 5.4%	= 16%
Do not Have Option, but Have Jobs Where Telecommuting is Feasible***	+ 8.6%	= 25%
* <i>“During a typical week, how many days do you telecommute or work from home?”</i> ** <i>“Does your employer currently offer the option for you to telecommute or work from home for your particular job?”</i> *** <i>“Do you have the kind of job that would allow you to telecommute at least some of the time without interfering with your productivity?”</i>		
Source: 2005/2006 National Technology Readiness Survey		

Those with a telecommuting policy or a job that allows them to telecommute were asked how often they would telecommute. Like those who already telecommute, most would do so only part-time – less than half would telecommute over two days per week, and 14 percent would not telecommute at all.<sup>8</sup>

- 18% would telecommute less than once a week
- 25% would telecommute 1 day a week
- 17% would telecommute 2 days a week
- 17% would telecommute 3 days a week
- 3% would telecommute 4 days a week
- 6% would telecommute 5 or more days a week
- 14% would still not telecommute

<sup>8</sup> *“If you were to telecommute in the next 12 months, how frequently would you do so, considering what would be practical for both your employer and you?”* Based on 52 people who work full or part-time, do not telecommute, and have permission to telecommute or jobs that allow telecommuting.

### Implications of Telecommuting

Telecommuting is one potential solution for a range of problems the country faces, including escalating energy costs, congestion, and carbon emissions that affect the environment. But how much of a dent can an increase in telecommuting have in the short run? A typical commuter pays \$688 a year in gasoline, assuming a cost per gallon of \$2.89<sup>9</sup>, an average miles per gallon of 21<sup>10</sup>, and a 20 mile commute two ways (median from this survey). By our analysis, there is a short-term potential to save \$3.9 billion a year in fuel costs<sup>11</sup>. Another savings is the time spent on the road. If all those who drove or carpooled, who had the ability to telecommute, actually did so, the time savings would be equal to 470,000 new jobs in the economy<sup>12</sup>.

These opportunities might be viewed as small given the sheer size of the U.S. economy and the vast amount of energy consumed. Telecommuting is not an end-all solution to the problems resulting from the daily traversing of nearly 100 million adults.

Telecommuting as a solution is limited for a few reasons: first, the typical commute is perhaps not that bad (10 miles and 20 minutes one way), reducing the incentive to change work habits to telecommute; second, only a fourth of jobs could ultimately involve telecommuting (not everyone works in an office), and over half of these would require a change of policy by the employer; and finally, most individuals who might choose to telecommute would only do so for a day or two, and only a fraction would consider it as a full-time option.

Opportunities may be less in *whether* we commute and more in *how* we commute. Despite high fuel costs, over nine out of 10 workers still travel alone by automobile. The biggest opportunities for reducing fuel costs and congestion, and helping the environment, may be in encouraging use of and expanding availability of public transportation. Information technology may help make public transit more desirable. For example, past NTRS waves have shown that the Internet creates greater home and work flexibility; a person can leave early and finish up work at home, and various services such as banking, shopping or dealing with government, can be handled from the home or workplace without having to stop somewhere on the way to or from work. Newer technologies also make a commute on a public mode more stimulating and productive; for example, commuters can use their cell phones and other portable devices to download entertainment, communicate by email or do research.

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<sup>9</sup> Energy Information Administration, [www.eia.doe.gov](http://www.eia.doe.gov)

<sup>10</sup> [www.fueleconomy.gov](http://www.fueleconomy.gov)

<sup>11</sup> Key assumptions: 96.6 million full or part-time commuters; 91% commute alone by vehicle and do not telecommute; 8% have the option of telecommuting; 13% of those without an option have jobs where telecommuting would be feasible; average of 1.6 days of telecommuting per week among those who did so; 20 miles driven per day; 21 miles per gallon mileage; \$2.89 per gallon; note that the estimate is conservative, particularly since the assumption for mileage is the median rather than the mean, which is influenced by outliers.

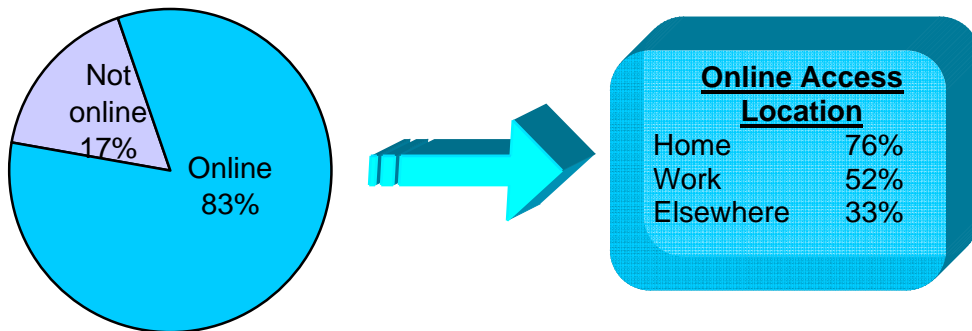
<sup>12</sup> Key assumptions: 96.6 million full or part-time commuters; 95% commute alone by vehicle or carpool, and do not telecommute; 8% have the option of telecommuting; 13% of those without an option have jobs that where telecommuting would be feasible; average of 1.6 days of telecommuting per week among those who did so; 40 minutes commuting per day; 50 weeks of commuting per year; note that the estimate is conservative, particularly since the assumption for time is the median rather than the mean, which is influenced by outliers.

### The Nomadic Consumer

True m-commerce is still in its infancy; for example, in the 2004 NTRS, less than 1 percent of online consumers who had purchased products online used a mobile device, such as a mobile phone or PDA, to make those purchases. However, many consumers are looking beyond their home or office access to use the Internet.

A full 83 percent of the U.S. population currently has some form of access to the Internet, if we count access at home, work or elsewhere. Three-fourths (76 percent in 2006) have Internet access at home and approximately half (52 percent) access the Internet at work.

**Online Access at Home, Work  
or Elsewhere**



About one-third of online consumers will at some point in a 12 month period go online at some location besides home or work – primarily a friend or relative's home. Many who go online outside their home or workplace also visit a public library to access the Internet.

### **E-Government: Lagging Behind E-Commerce in Satisfaction**

The incidence of online adults visiting government Web sites has climbed steadily since 2002 (see table on next page). Nearly six out of 10 online adults (62 percent) visited a local, state or federal government Web site over a 12-month period, up from 57 percent in 2004. A third (33 percent) of online adults conducted business with a government entity via the Internet, compared to a quarter in 2004.

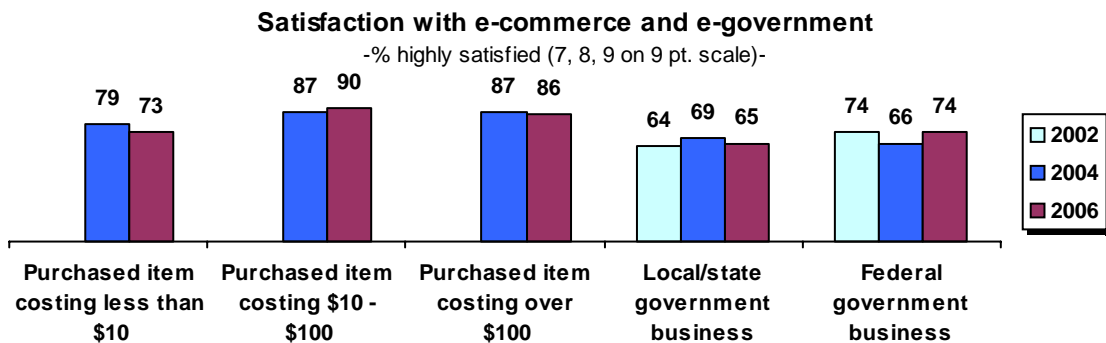
NTRS breaks results out by state/local and federal government activities. In the 2005/6 survey, 59 percent of online adults visited a local or state government Web site. The percent of online consumers who conducted business with a local or state government over the Web was 26 percent. About half of online consumers (51 percent) visited a federal government site in the 2005/6 survey, and 21 percent conducted business with the federal government.

<b>Incidence of E-Government Activities in the Past 12 Months</b>				
	<b>2001</b>	<b>2002</b>	<b>2004</b>	<b>2006</b>
<i>Base: online adults</i>	(418) %	(422) %	(828) %	(930) %
<b>All government levels</b>				
Visited government Web site (local, state, fed'l)	55	47	57*	62*
Conducted business with govt. online (local, state, fed'l)	21	24	26	33*
<b>Local/state government</b>				
Visited local/state government Web site	50	39	54*	59*
Conducted business with local/state government online	16	19	19	26*
<b>Federal government</b>				
Visited federal government Web site	33	36	38	51*
Conducted business with federal govt. online	11	18*	15	21*

\*Significantly higher than previous year.  
 "What types of things have you yourself done for personal purposes, either at home, at work or elsewhere on the Internet in the past year? Have You:  
 t. Visited a Web site for a local or state government online  
 u. Conducted business with a local or state government online  
 v. Visited a Web site for a federal government office online  
 w. Conducted business with the federal government online"

Source: 2001, 2002, 2004, and 2005/2006 National Technology Readiness Survey

Satisfaction with the business of e-government is generally below that of e-commerce, although there has been progress in the federal sector<sup>13</sup>. Two-thirds of state/local e-government users are highly satisfied with their experience (65 percent). In comparison, three-fourths of consumers who purchased small ticket items (under \$10) and nine out of 10 purchasers of more expensive items are highly satisfied.



<sup>13</sup> "Thinking about the last time you [INSERT ACTION THAT WAS CONDUCTED], how satisfied were you with the experience, using a scale of 1 to 9 where 1 means "extremely dissatisfied" and 9 means "extremely satisfied"?"

The federal government is faring better than state/local government, with 74 percent of users being highly satisfied with doing business on their sites. While satisfaction with doing business on federal sites dropped from 2002 to 2004, it bounced back in the most recent wave, although the changes are not statistically significant. While doing better than local and state government, federal government is still not satisfying users as much as users of web sites that sell items costing \$10 or more.

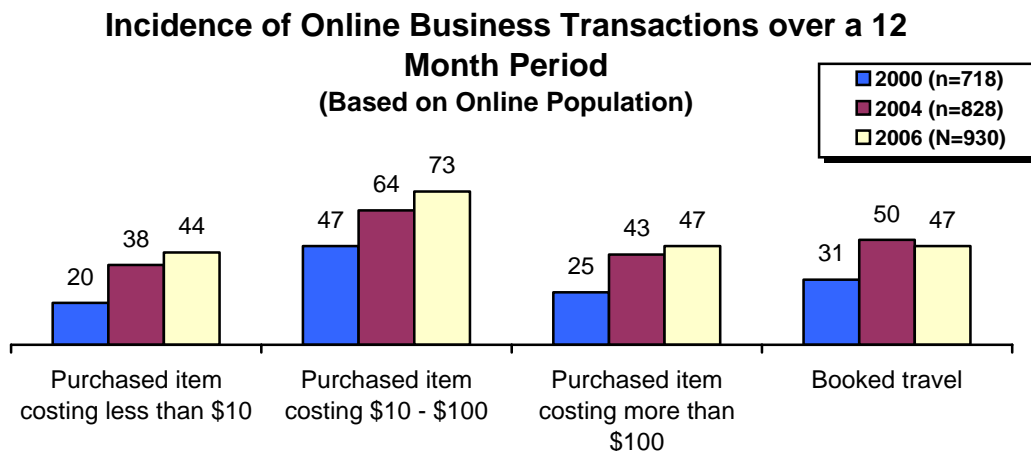
### Trends in E-Services

During the time that the NTRS has tracked e-service behaviors, there has been a marked growth in the incidence of online adults who conduct business over the Internet for personal reasons. All kinds of online purchasing and service usage have grown significantly, with the most striking growth in banking.

In the past 12 months, 77 percent of online adults have made a purchase over the Internet for personal reasons.<sup>14</sup> The most common price category consists of items costing \$10 to \$100. Specifically:

- Forty-four percent purchased an item costing less than \$10,
- Seventy-three percent purchased an item costing \$10 to \$100, and
- Forty-seven percent purchased an item costing over \$100.

The incidence of purchasing in each of these categories has grown by 4 to 9 percent since 2004. Growth was rapid in the early 2000s but is now tapering off. For example, the proportion of online adults who purchased a small-ticket item (less than \$10) over the Internet almost doubled between 2000 and 2004, growing from 20 percent to 38 percent, but was only 44 percent in the 2005/2006 wave. Online travel booking grew substantially for years, but has tapered off since the last wave (with a slight decrease from 50 to 47 percent).

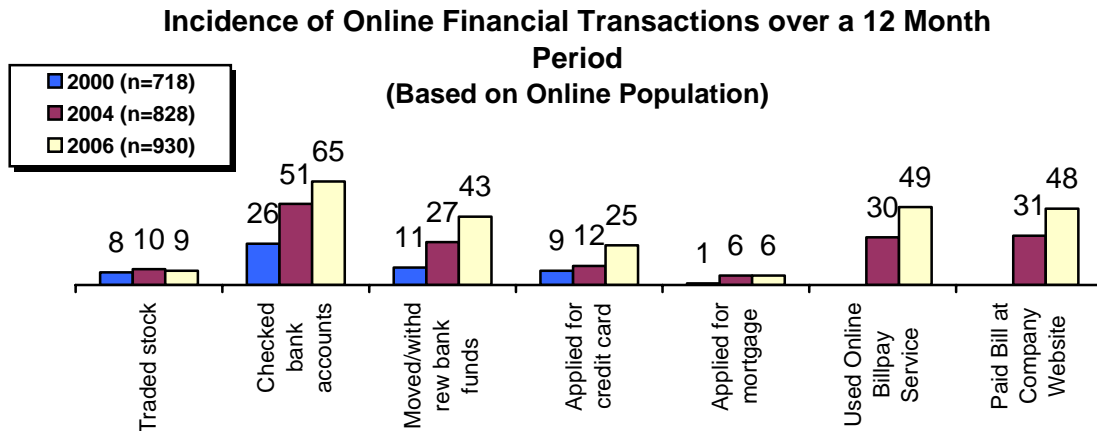


<sup>14</sup> The question was worded as: “What types of things have you yourself done for personal purposes, either at home, at work, or elsewhere, on the Internet in the past year? Have you: READ LIST.” In 2000, the term “elsewhere” was not used; the authors believe that using the Internet at alternative locations was not common in 2000 and the change in wording does not have a notable impact on results.

The most striking growth has been in online banking. The incidence of online adults who have moved or withdrawn funds over the Internet jumped from 11 percent in 2000 to 43 percent in the recent 2005/2006 wave. The incidence of those checking banking accounts online has almost tripled, so that now two-thirds of online adults report having engaged in such activities in the past 12 months (26 percent in 2000 versus 65 percent in 2005/6). Although not tracked four years ago, another prevalent financial activity is paying bills online:

- In the 2005/2006 wave, 49 percent of online consumers reported they have used bill-paying services on the Internet in the past 12 months (30 percent in 2004)
- 48 percent have paid a bill directly to a company's Web site (31 percent in 2004)

Online stock trading, a much touted service in the dot.com era, has not gained much penetration since 2000. Currently, only 9 percent of online adults trade securities online, compared to the 8 percent we saw four years ago. One activity that was almost non-existent in 2000, applying for a mortgage online (1 percent incidence) is now 6 percent.



Growth in online purchasing and online financial services is connected to consumers' ability to overcome fears of doing business with this medium. The NTRS tracks beliefs about technology and reveals that there is ample concern about the Internet being a risky channel. These fears are still substantial, but consumers are becoming more assured of the safety of online banking and commerce. For example, in the most recent survey:

- 48 percent of consumers do not consider it safe giving out a credit card number over a computer (compared to 68 percent in 2004)
- 34 percent do not consider it safe to conduct any kind of financial business online (compared to 50 percent in 2004).

**C2C commerce:** The Internet is facilitating “C2C” commerce, with consumers selling goods and services directly to each other. Intermediaries may be an auction site or a direct marketing site that enables commerce that is consumer driven. In the 2005/6 NTRS, the following was observed:

- 44 percent of online adults made purchases from other consumers through an Internet site such as an auction site or classified online ad (versus 30 percent in 2004)
- 18 percent sold an item over the Internet through an auction site or classified online ad (versus 12 percent in 2004)
- 18 percent made purchases through an online direct marketing or multi-level marketing site (versus 9 percent in 2004)
  - In the 2005/2006 wave, 3 percent recruited people online for a direct marketing site

**Other online activities:** The NTRS also tracks behaviors that do not involve actual commerce. For example, a major area of increased activity is using the Internet to check utility account information. Only 9 percent of online adults did this in 2000, but by 2004, a quarter (27 percent) did so, and in 2005/2006, 49 percent did so. One reason may be the introduction of new e-service options by phone, gas, electric and cable companies. Other findings include:

- In 2005/2006, 48 percent visited a membership .org site; this activity has not changed much over the years, and was 45 percent in 2004 and 43 percent in 2000.
- The growth in online learning has tapered off among adults – 13 percent took a course online in the most recent wave, compared to 14 percent in 2004 and 8 percent in 2000.

### **E-Health: Using the Internet for Wellness**

One of the first areas where the Internet made an impact on peoples' lives was in providing health information. Over two-thirds of online adults – 69 percent – researched health information on the Internet over a 12-month period in the 2004 and 2005/2006 survey waves. This behavior was also prevalent six years ago (62 percent in 2000).

Consumers use the Internet in other ways to manage their wellness, although these other behaviors are still in their infancy. The following are the percentage of online adults who reported engaging in different behaviors over a 12-month period in 2004:

- In the 2005/2006 survey, 10 percent consulted with a medical professional online (compared to 10 percent in 2004)
- 12 percent purchased prescription drugs over the Internet from a U.S. retailer (compared to 6 percent in 2004)
- 3 percent purchased prescription drugs from a non-U.S. provider (1 percent in 2004)
- 4 percent obtained medical test results online (2 percent in 2004).