

Music & the Internet

MUMT 301

Ichiro Fujinaga
Schulich School of Music
McGill University

Plan

- Internet Radio
- Playlists
- Music Discovery
- Javascript

Internet Radio

- Media streaming
- Different from downloading or podcasting
- Media used: mp3, ogg vorbis, Windows Media Audio, etc.
- First webcast in 1994
- Early streaming software: RealAudio, Nullfosft (Shoutcast), and Microsoft

Internet Radio Stations

- Shoutcast Radio: 45,000 stations, up to 900,000 concurrent listeners
- Live365 (ads): 5,000+ broadcasters
- CBC Music (with playlists)
- Earbits (free): “hand curated”
 - Artists/labels pay to advertise themselves
 - No major labels
- Aupee (ads)
 - 100+ genre stations; 2000+ artist stations
 - personalization
 - Mood Tuner
- MeeMix (API)
- Stereomood (pre-made playlists)
- Splump (use Chrome)

Playlists

- 8Tracks: User-contributed playlists (ads); pays royalties
- Spotify (local app)
- Playlistify
- <http://www.thecloudplayer.com/> (playlist for soundcloud) [Broken? 2012/10]
- Try: Amazon Cloud Player
- Pandora (US only) (use Hotspot Shield):
 - Limited to 6 skips per hour, 12 per day for free users
 - \$36/year
 - Expert tagged

The Infinite Dial 2012

Navigating Digital Platforms



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Methodology Overview

- » In January/February 2012, Arbitron and Edison Research conducted a national telephone survey offered in both English and Spanish language (landline and cell phone) of 2,020 people aged 12 and older
- » Data were weighted to national 12+ population figures
- » This is the 20th study in our series dating to 1998
- » These studies provide **estimates** of emerging digital platforms and their impact on the media landscape



Headlines: Navigating Digital Platforms

- » The 30% year-over-year jump in the weekly online radio audience shows that radio is more relevant than ever, spanning broadcast, video, mobile, social media, and online
- » Smartphone ownership has tripled in two years
- » The majority of Americans own a portable digital media device
- » Social media grows most year over year among age 45+



Media Landscape Before the Digital World

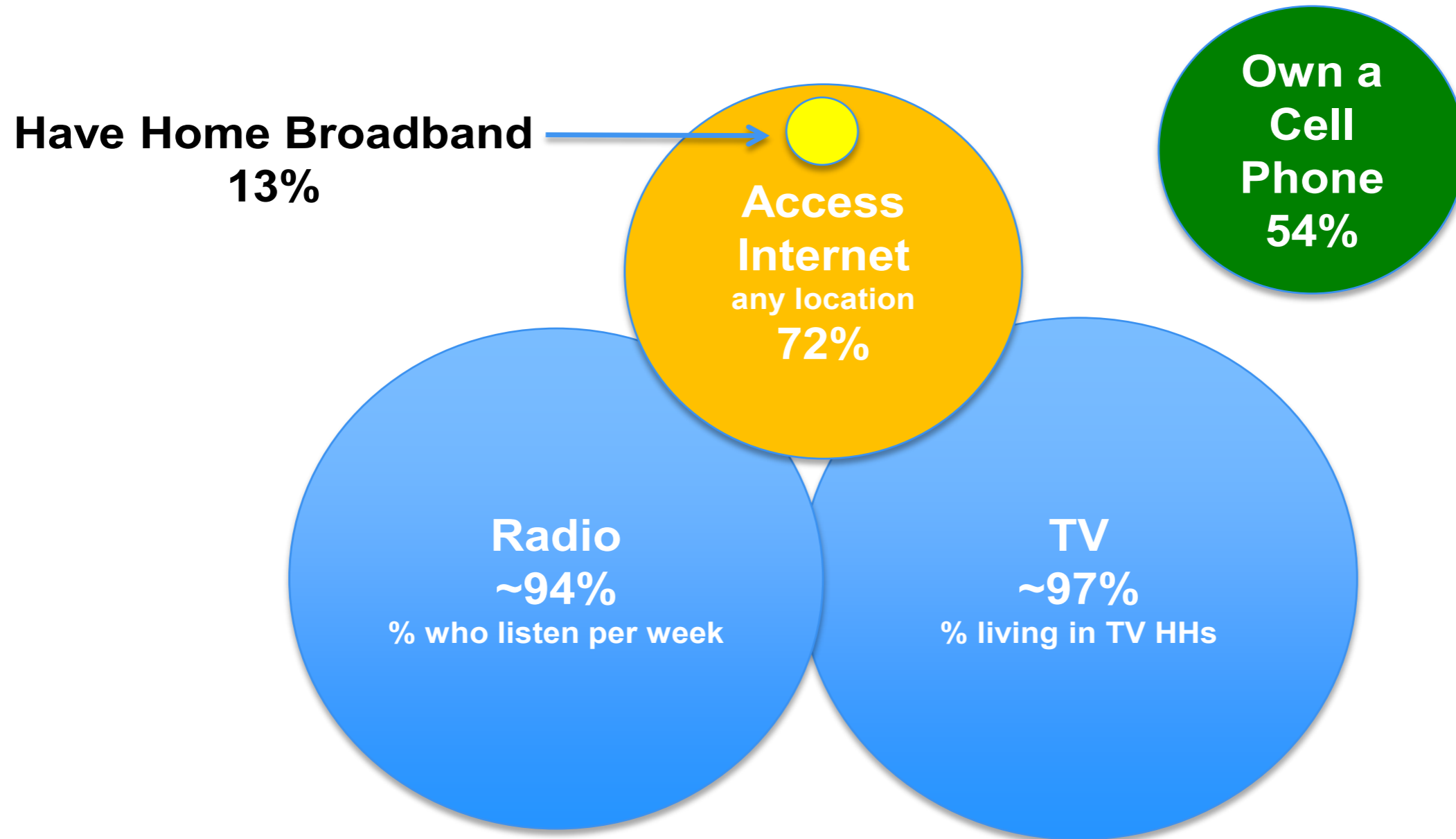
Audio



Video



Media Landscape 2002



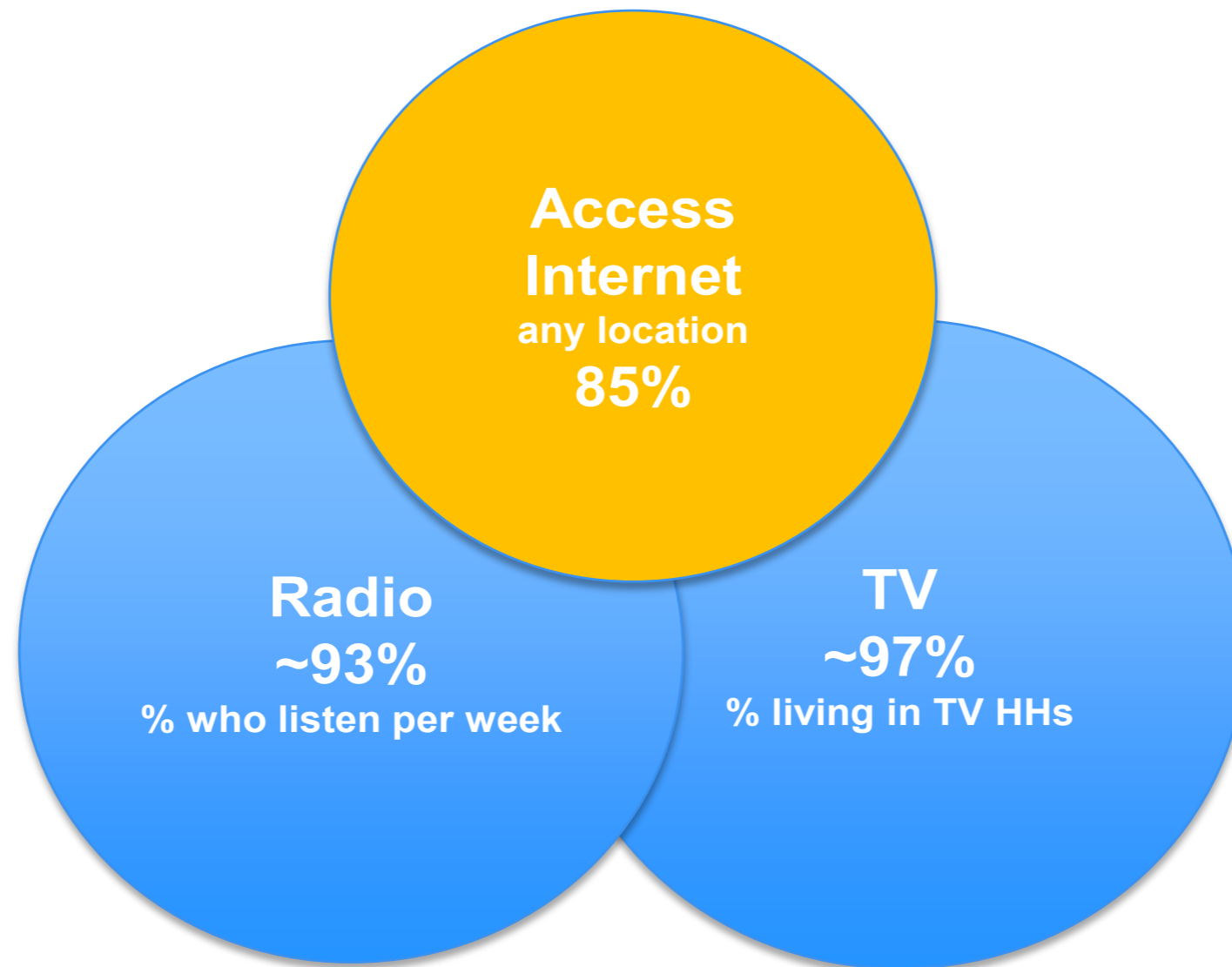
Source: Infinite Dial 2002, TVB- "TV Basics," Arbitron Inc., and RADAR Base P12+ (except TV base = # TV HHs)



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Media Landscape 2012



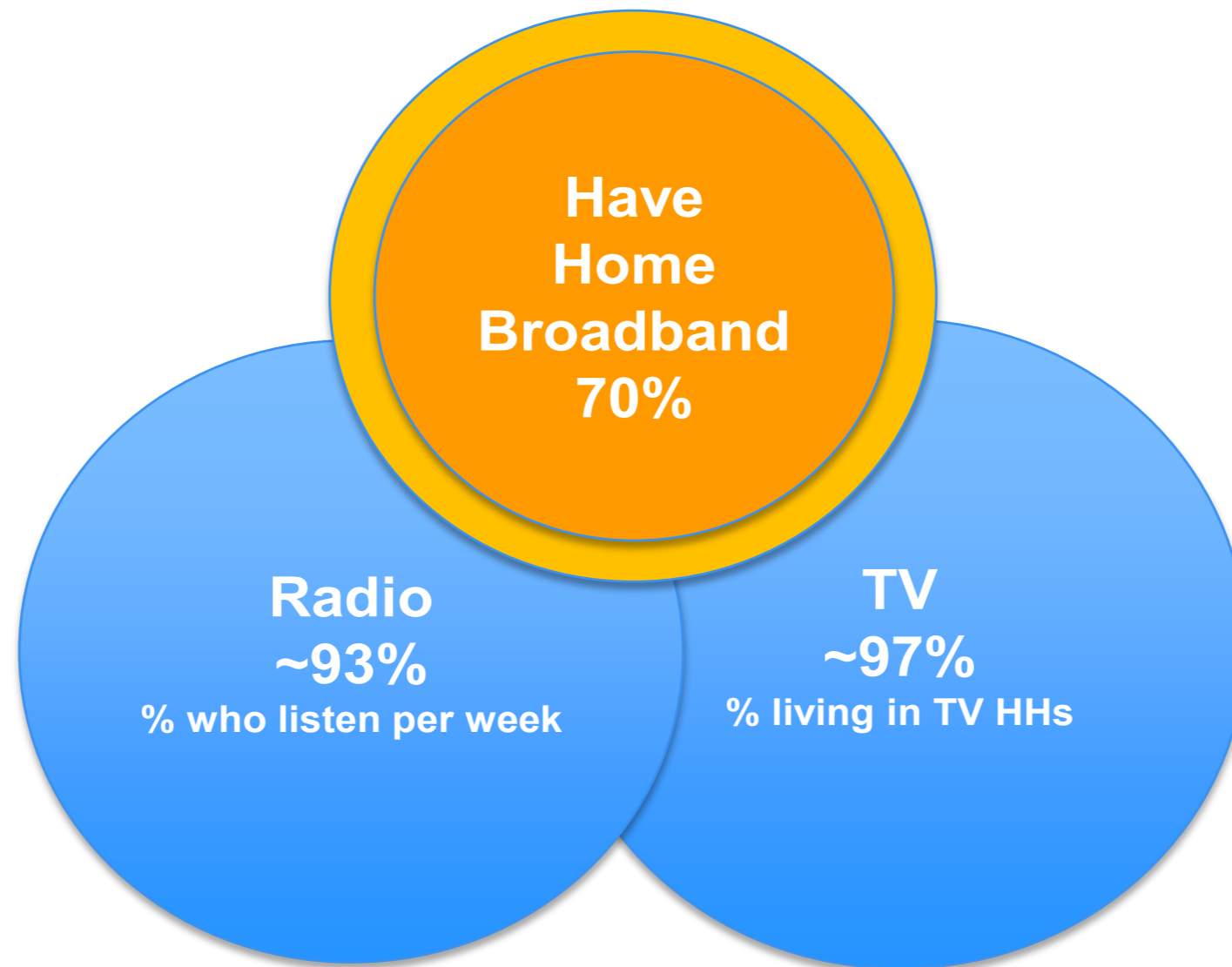
Source: Infinite Dial 2012, TVB- "TV Basics," Arbitron Inc., and RADAR Base P12+ (except TV base = # TV HHs)



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Media Landscape 2012



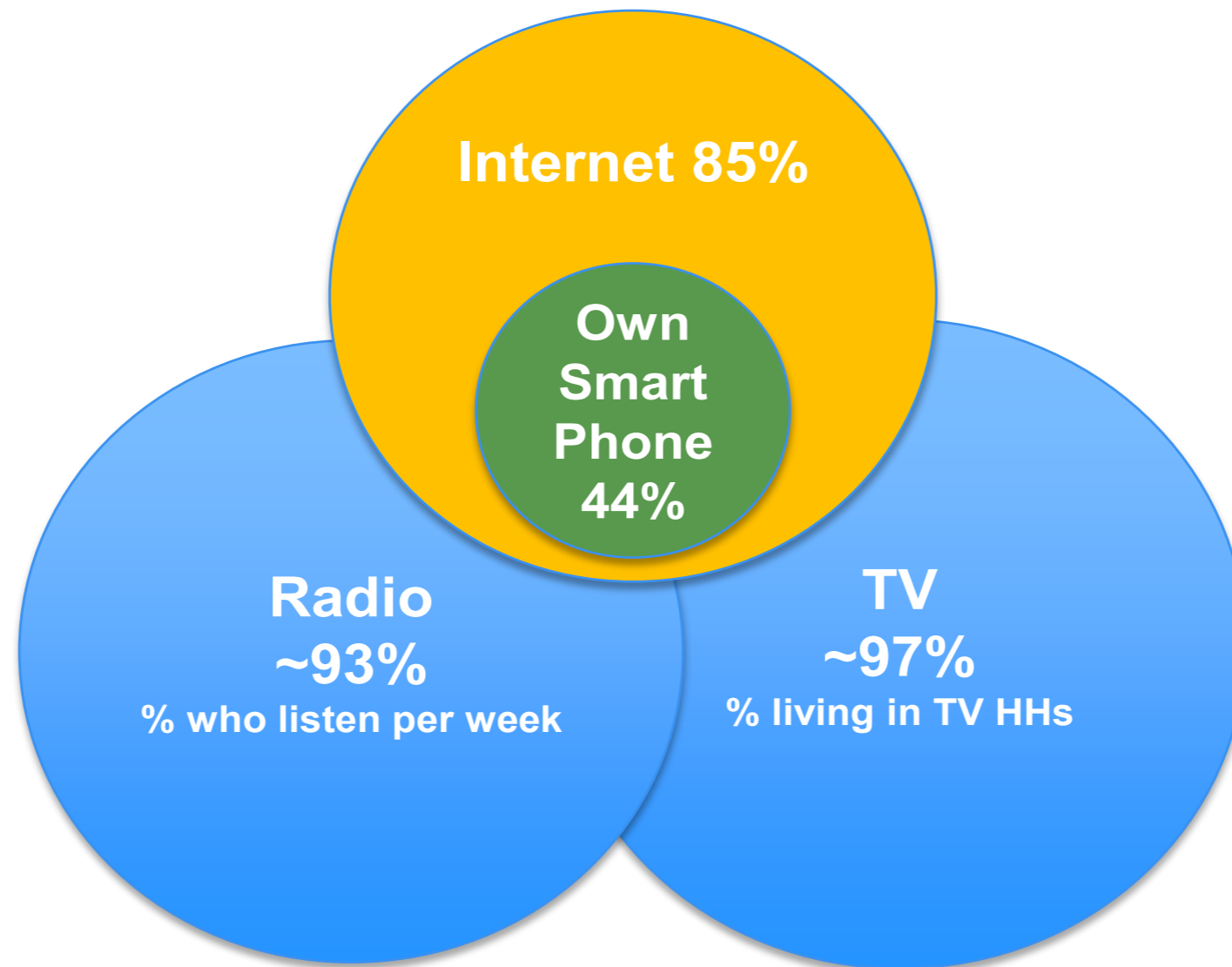
Source: Infinite Dial 2012, TVB- "TV Basics," Arbitron Inc., and RADAR Base P12+ (except TV base = # TV HHs)



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Media Landscape 2012



Source: Infinite Dial 2012, TVB- "TV Basics," Arbitron Inc., and RADAR Base P12+ (except TV base = # TV HHs)

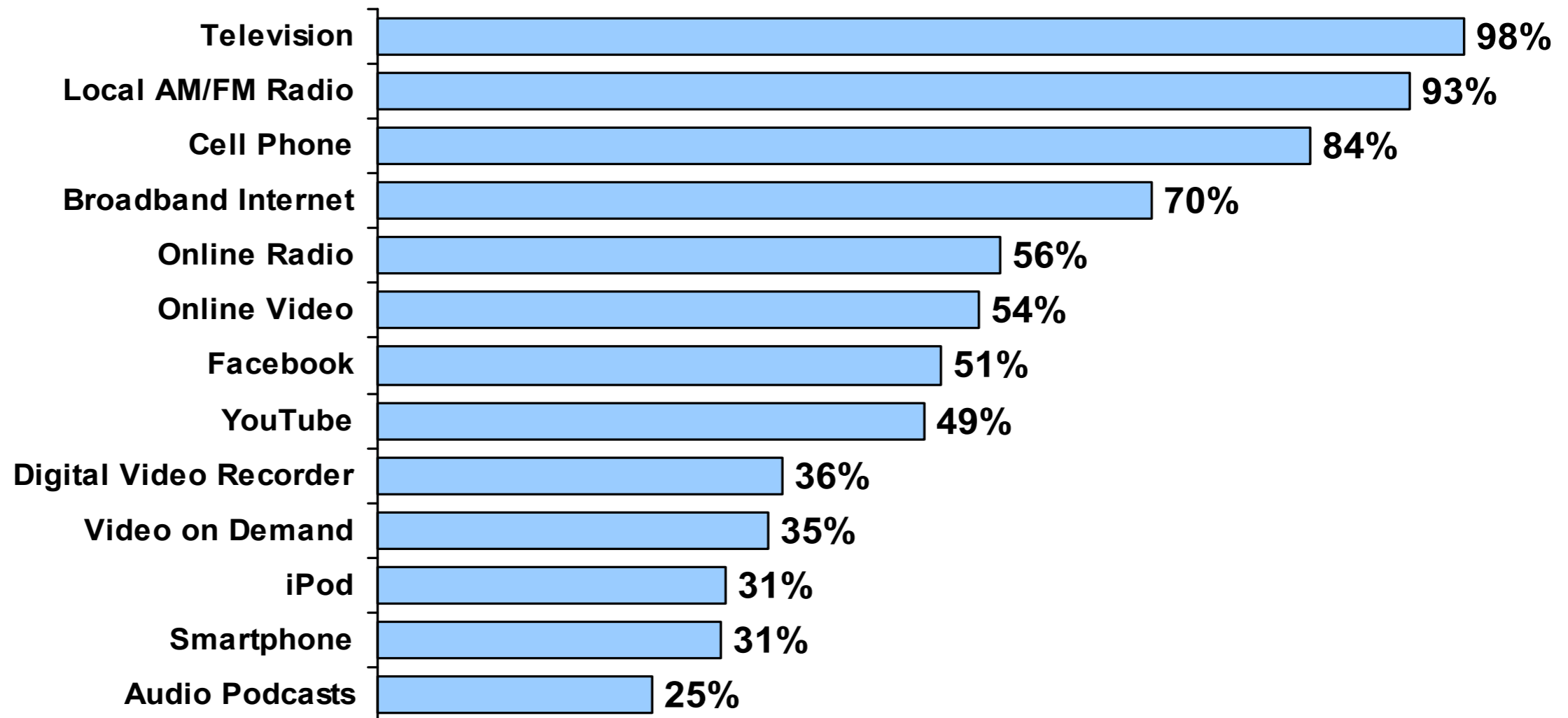


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2011 Digital Platform Landscape

% of Americans Aged 12 and Older Who Use/Own Platform/Devices

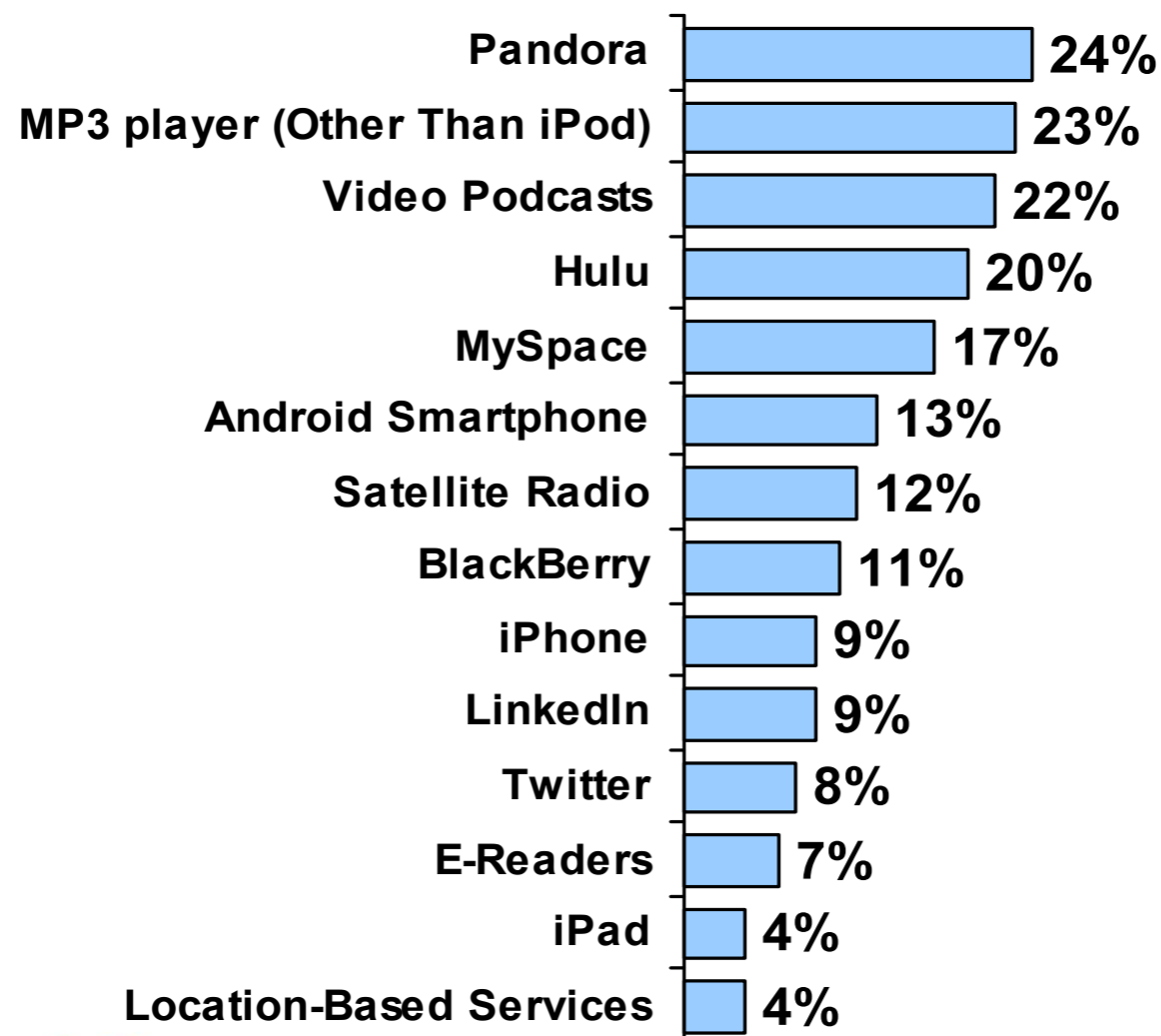


Source: TV HHs; Weekly AM/FM Radio audience; Own a cell phone; Have broadband access at home; Ever use online radio; Ever use online video; Have a Facebook profile; Ever use YouTube®; Own a DVR; Ever use Video on Demand; Own iPod®; Own smartphone; Ever use audio podcast



2011 Digital Platform Landscape (cont'd)

% of Americans Aged 12 and Older Who Use/Own Platform/Devices



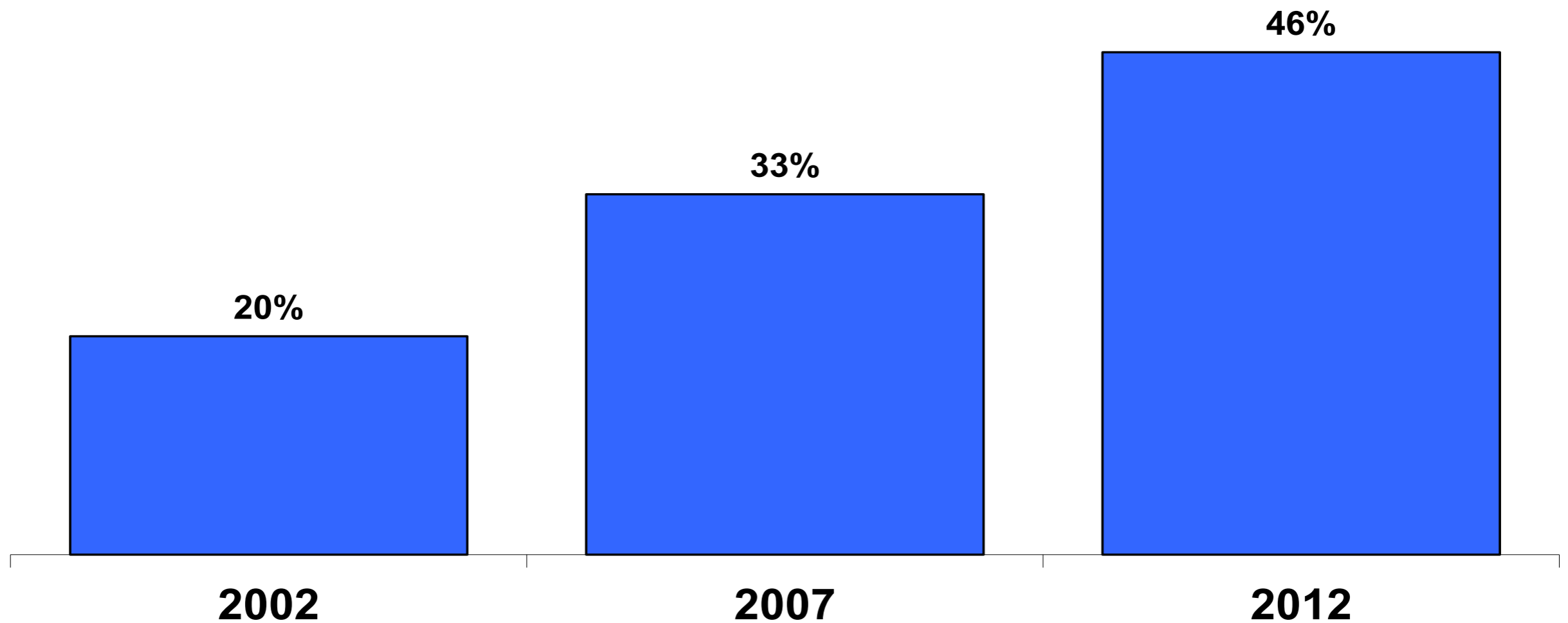
Source: Ever use Pandora®; Own MP3 player (other than iPod); Ever use video podcast; Ever use Hulu®; Ever use MySpace®; Own Android™ smartphone; Subscribe to satellite radio; Own BlackBerry®; Own iPhone®; Ever use LinkedIn; Ever use Twitter®; Own e-reader; Own iPad®; Ever use location-based services



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Nearly Half of Consumers Now Say the Internet Is Most Essential to Their Lives

% Saying the Internet Is the Most Essential Medium to Their Lives Among TV, Radio, Newspapers, and Internet

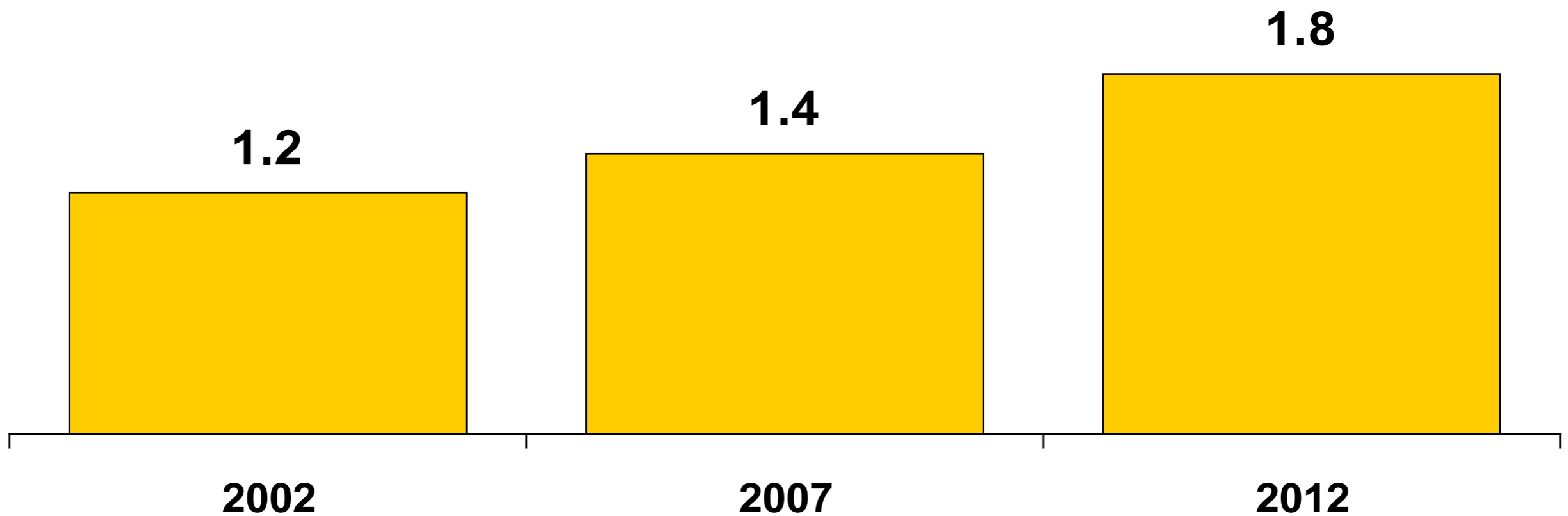


Base: Total Population 12+

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Households Now Averaging Nearly Two Working Computers

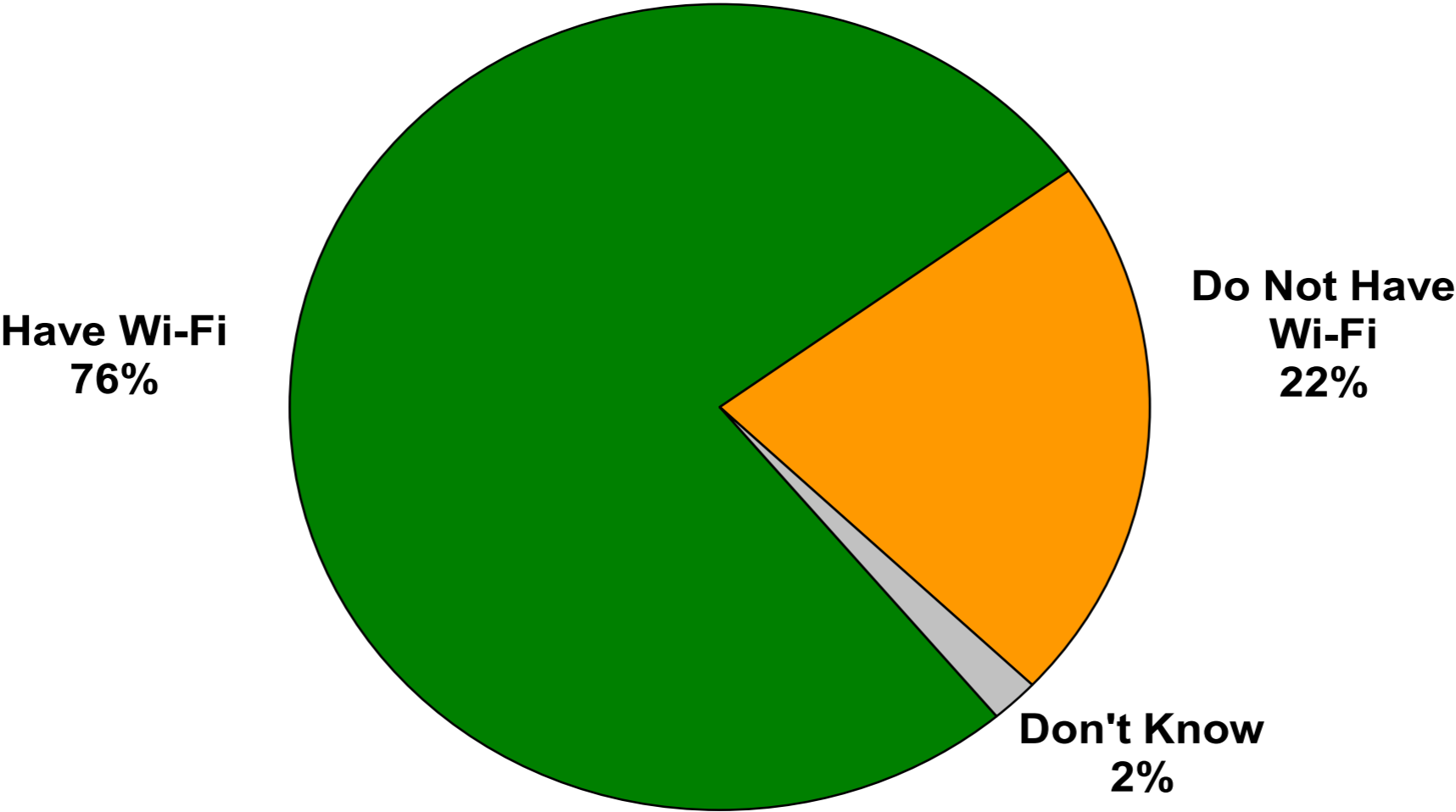
Average Number of Working Computers in Household



Base: Total Population 12+

Three-Quarters With Home Internet Access Have a Wi-Fi Network

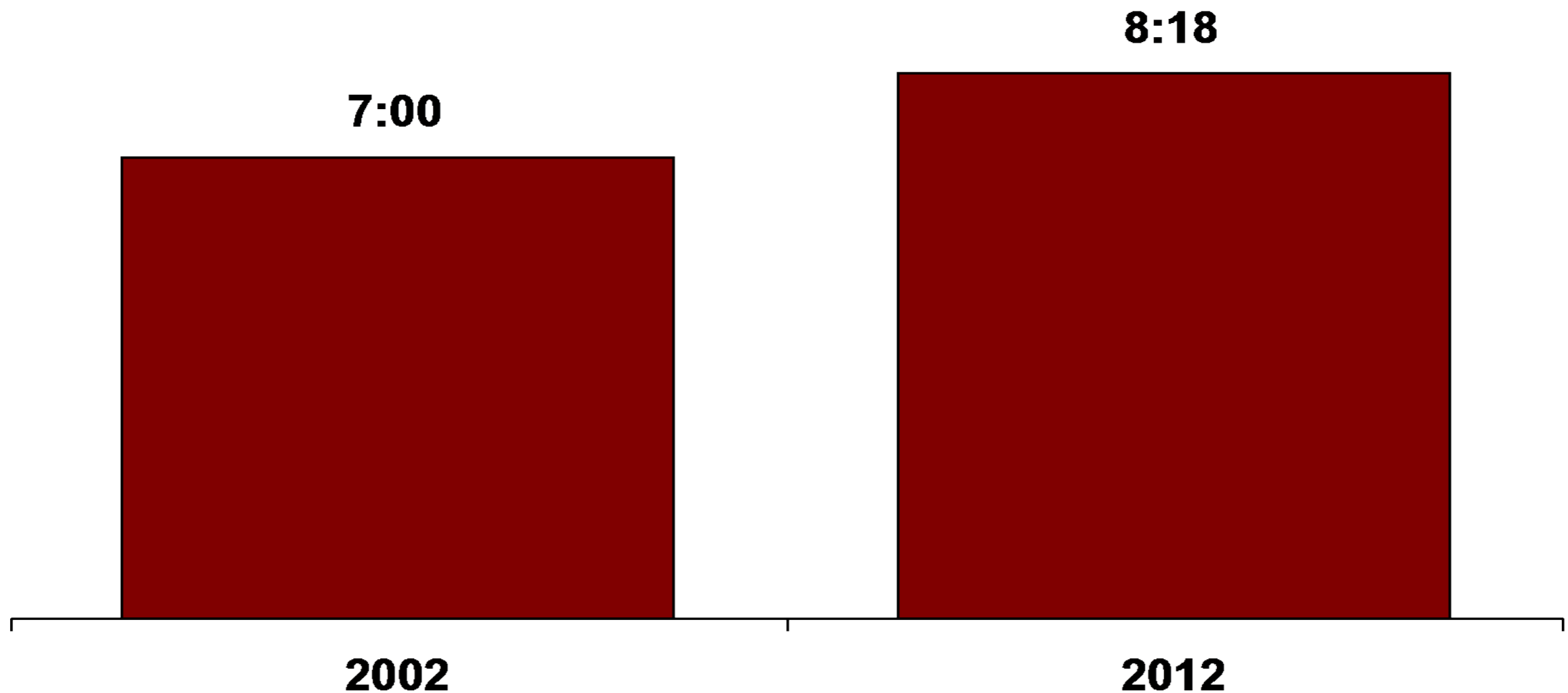
% of Homes With Internet Access and a Wi-Fi Network Setup



Base: Access the Internet From Home

Combined Time Spent per Day With Radio, TV, and Internet Gained More Than an Hour Since 2002

Self-Reported Average Time Spent per Day With Today's Three Biggest Media: Radio, TV, Internet (Hours:Minutes)



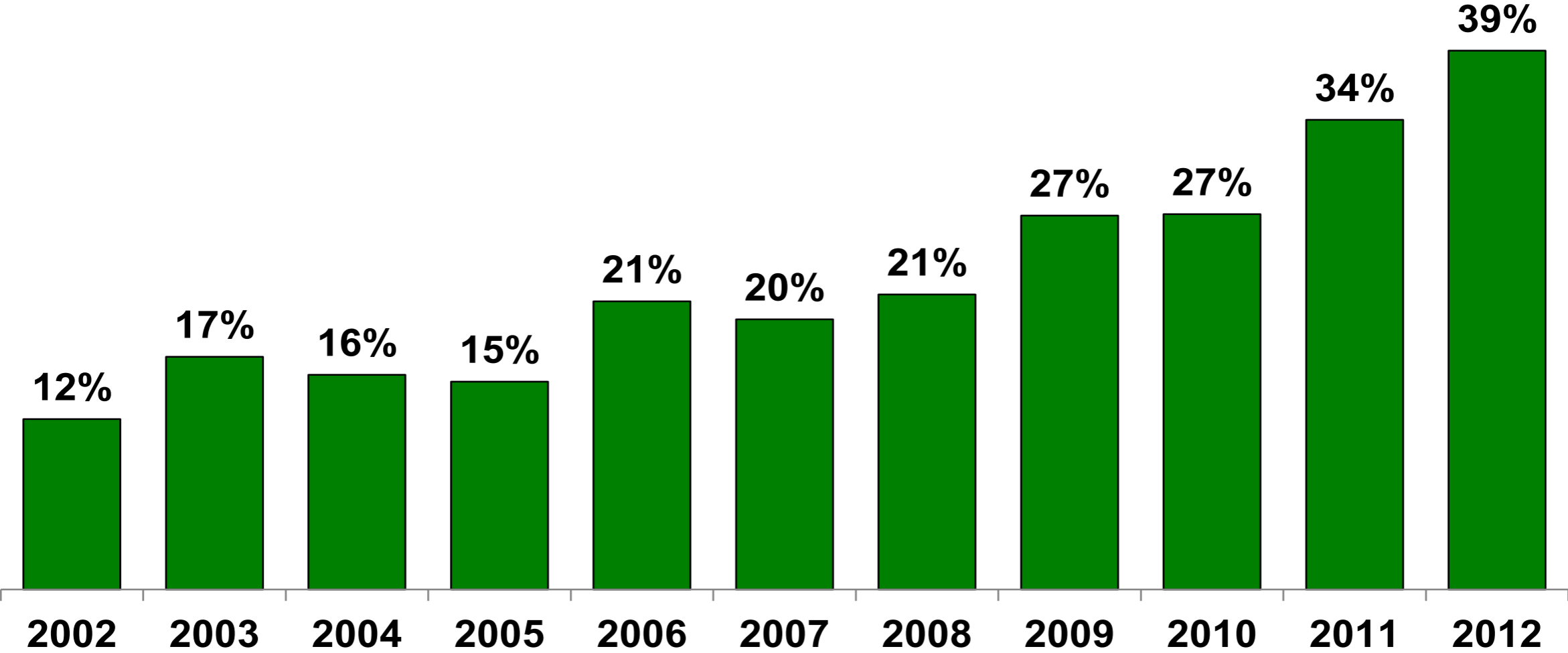
Base: Total Population 12+

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Monthly Online Radio Audience Reaches Four in Ten Americans

% Who Have Listened to Online Radio in Last Month

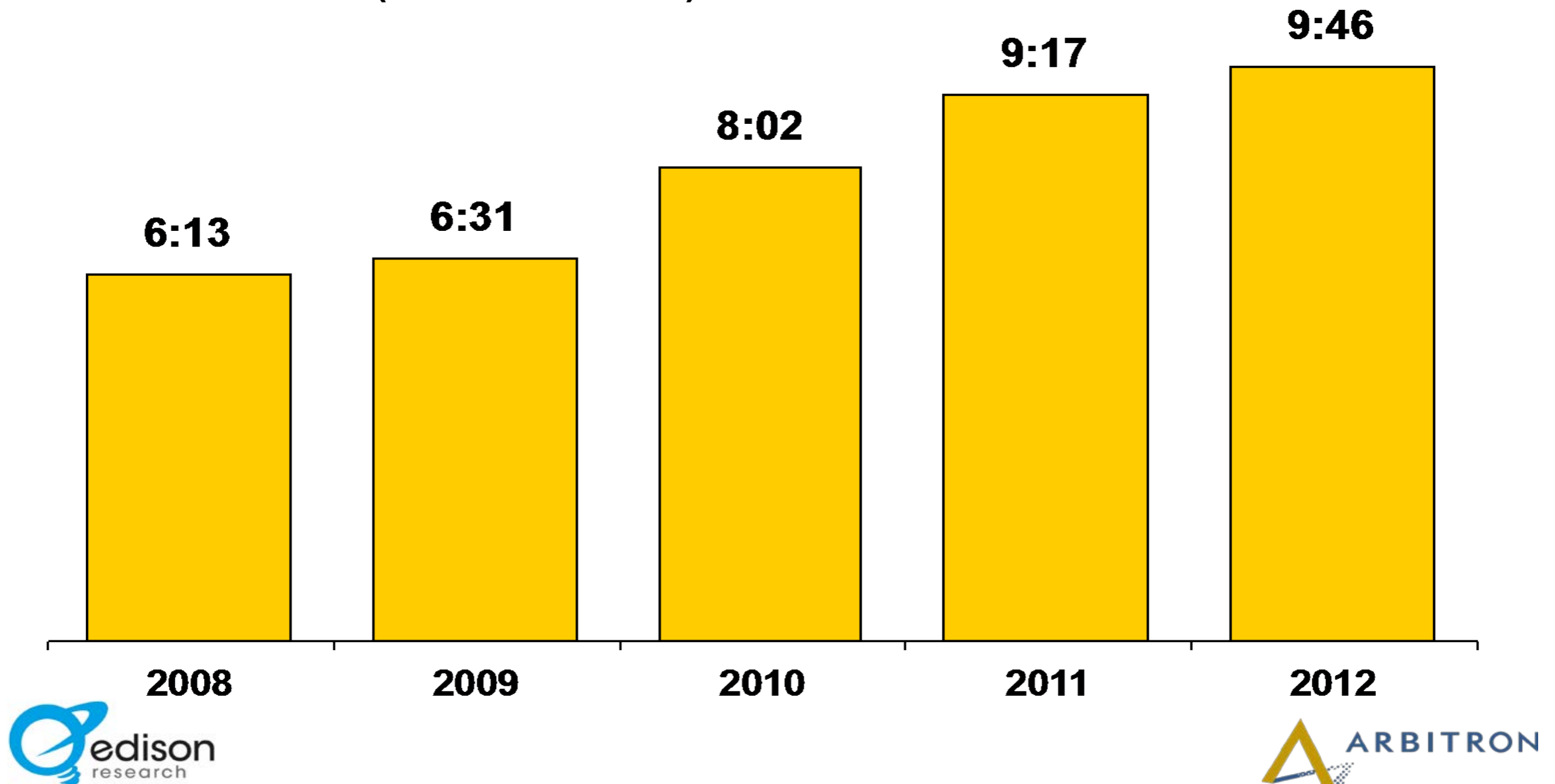
Estimated
103 Million



Base: Total Population 12+

Weekly Online Radio Listeners Report Listening for Nearly Ten Hours Per Week

**Self-Reported Average Time Spent per Week With All Sources
of Online Radio (Hours:Minutes)**

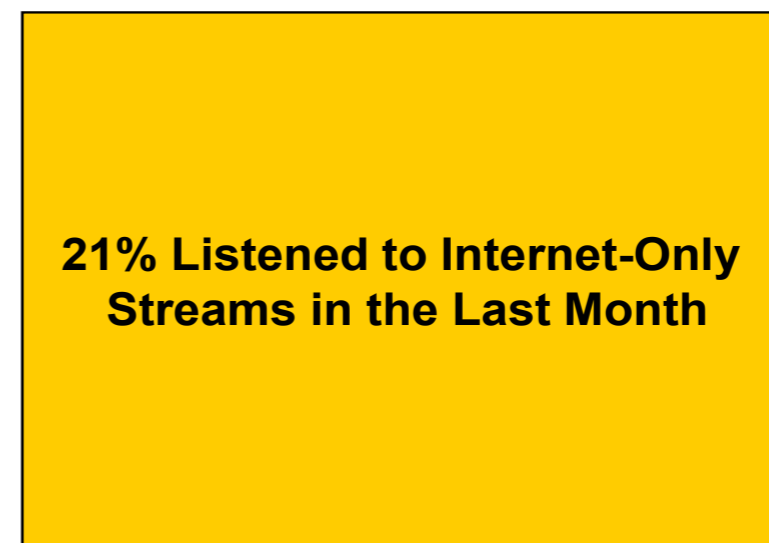


Base: Weekly Online Radio Listeners

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AM/FM Streams, Internet-Only Streams Each Listened to by More Than 20% in the Last Month

% Who Listened to Given Source of Online Radio in the Last Month



Base: Total Population 12+

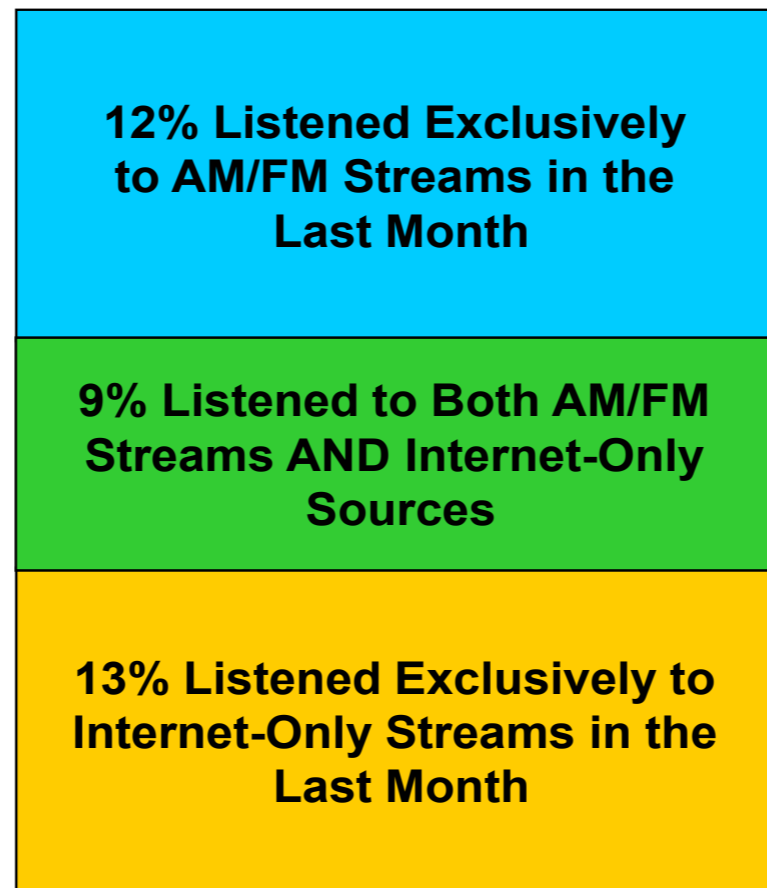


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One in 10 Listened to Both AM/FM Streams AND Internet-Only Sources in the Last Month

% Who Listened to Given Source of Online Radio in the Last Month

**34% Listened to Online Radio
in the Last Month**



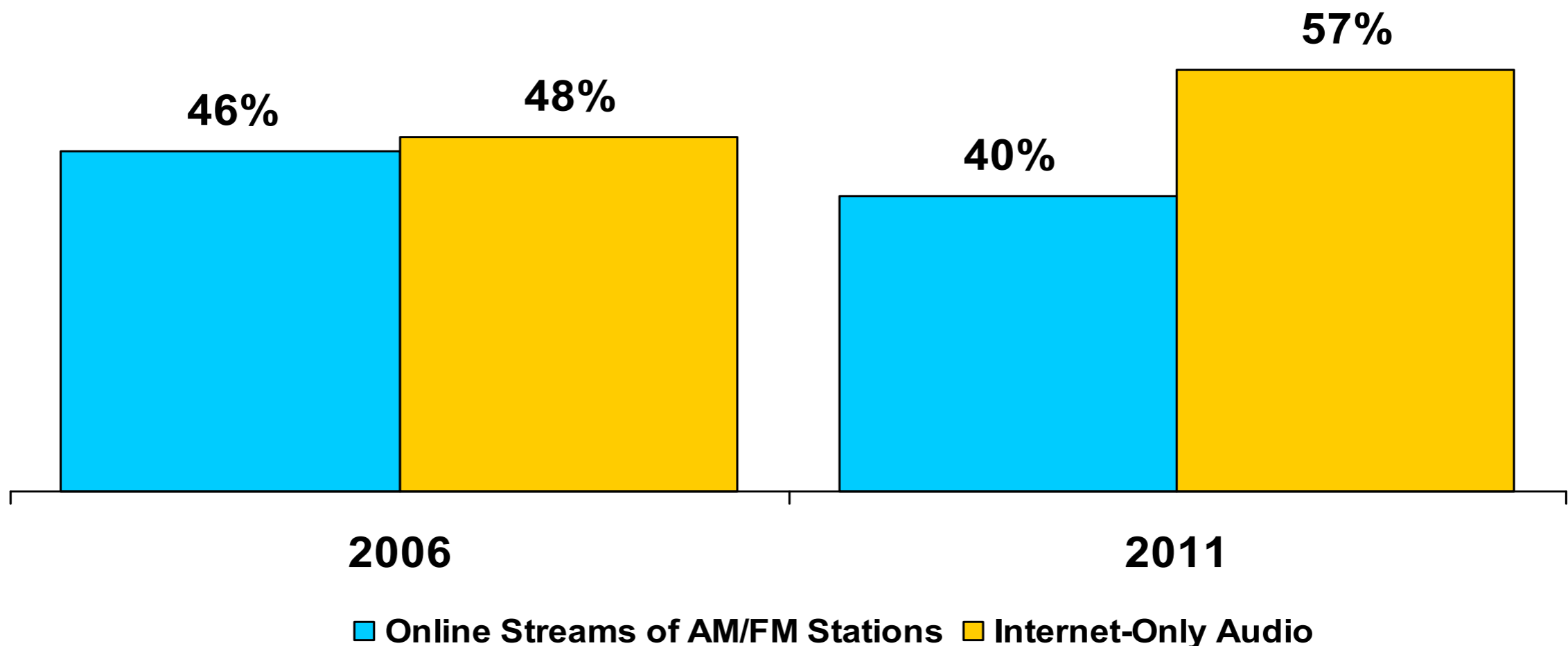
Base: Total Population 12+



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More Monthly Online Listeners Say They Listen Most to Internet-Only Audio vs. Five Years Ago

% of Monthly Online Radio Listeners Who Listen to Both AM/FM Streams and Internet-Only Audio Who Listen Most to

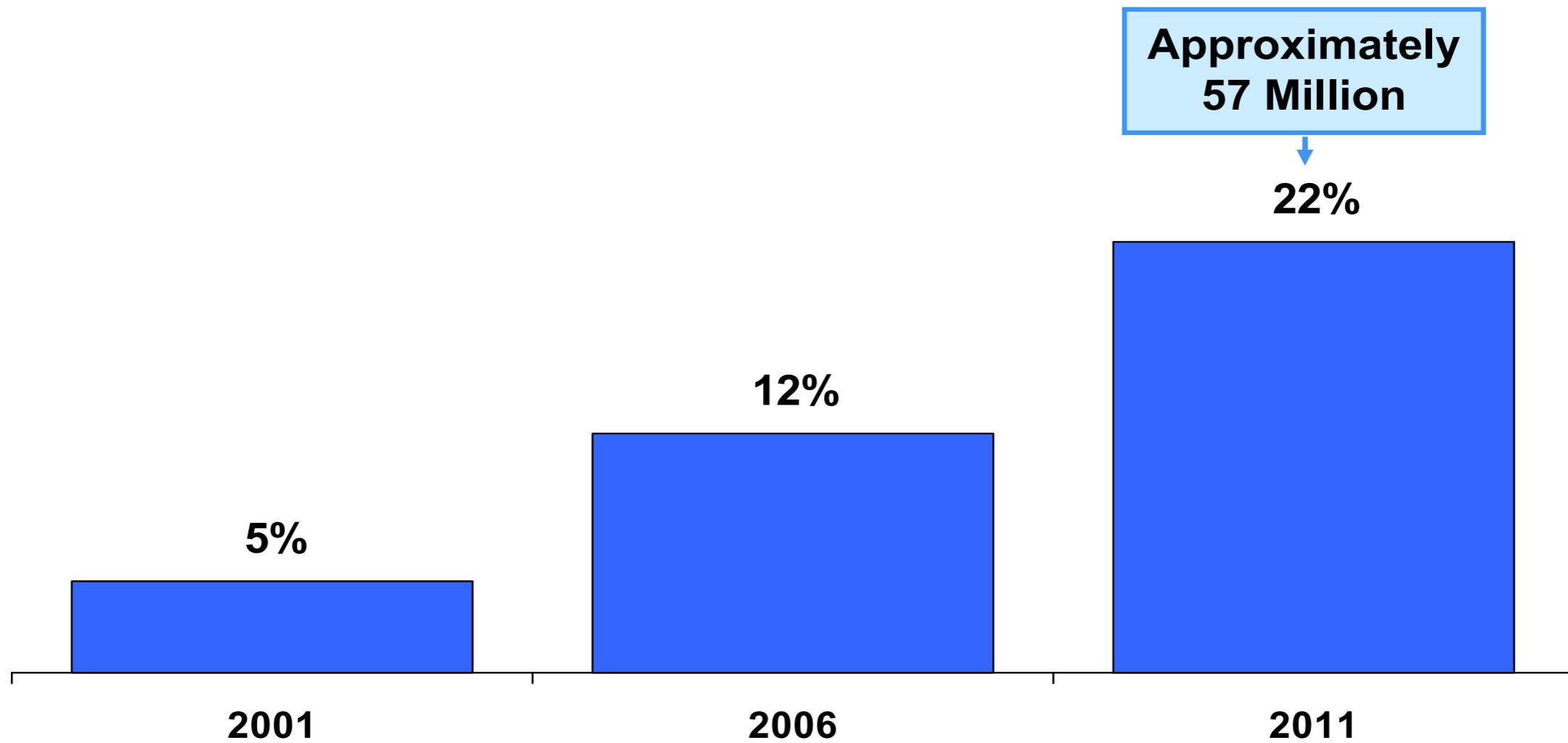


Base: Monthly Listeners to Both Online Streams of AM/FM Radio Stations AND Internet-Only Audio



Weekly Online Radio Audience Has Doubled Every Five Years Since 2001

% Who Have Listened to Online Radio in Last Week



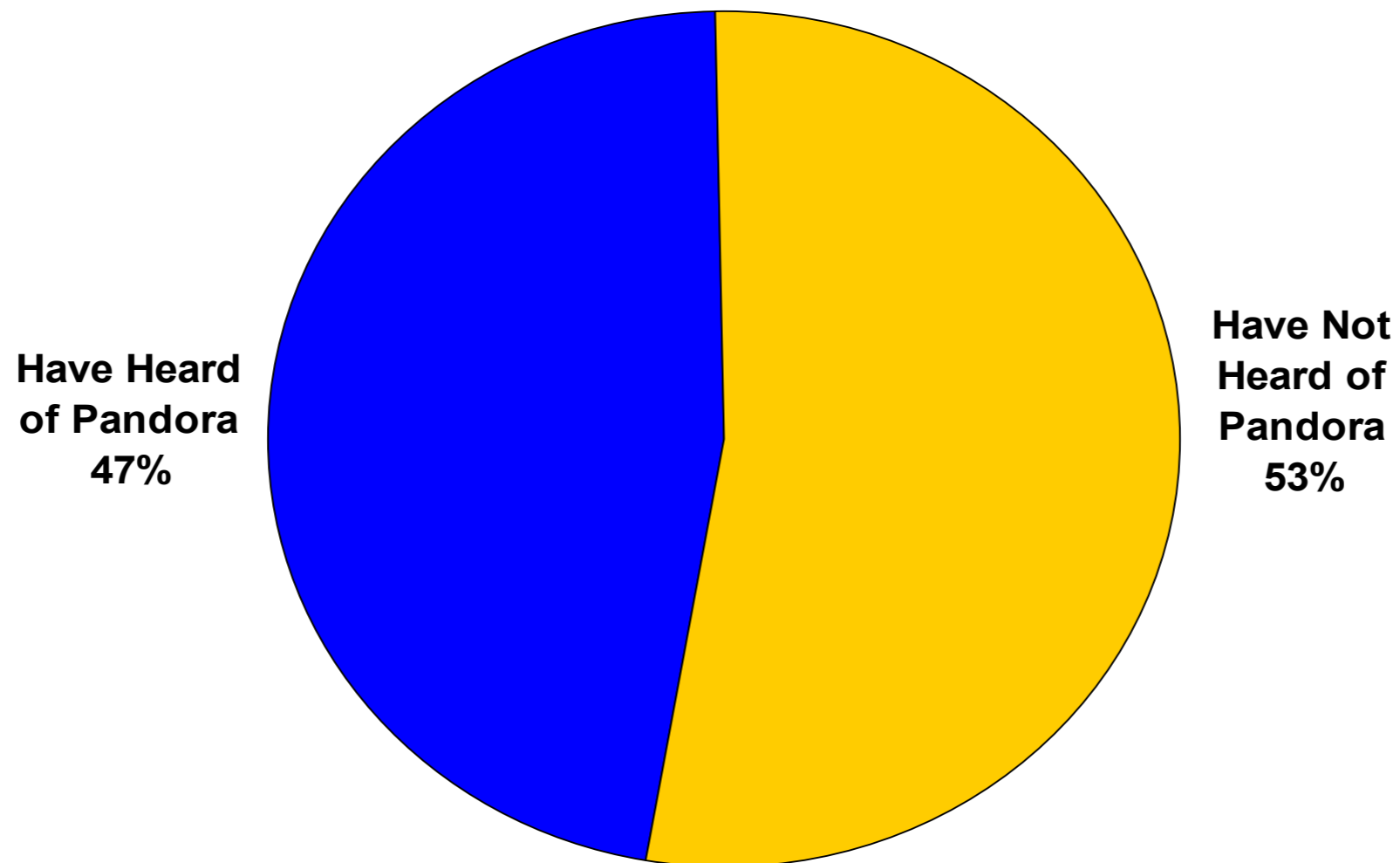
Base: Total Population 12+



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Nearly Half of Americans Have Heard of Pandora

“Have you ever heard of the Internet radio service called Pandora?”

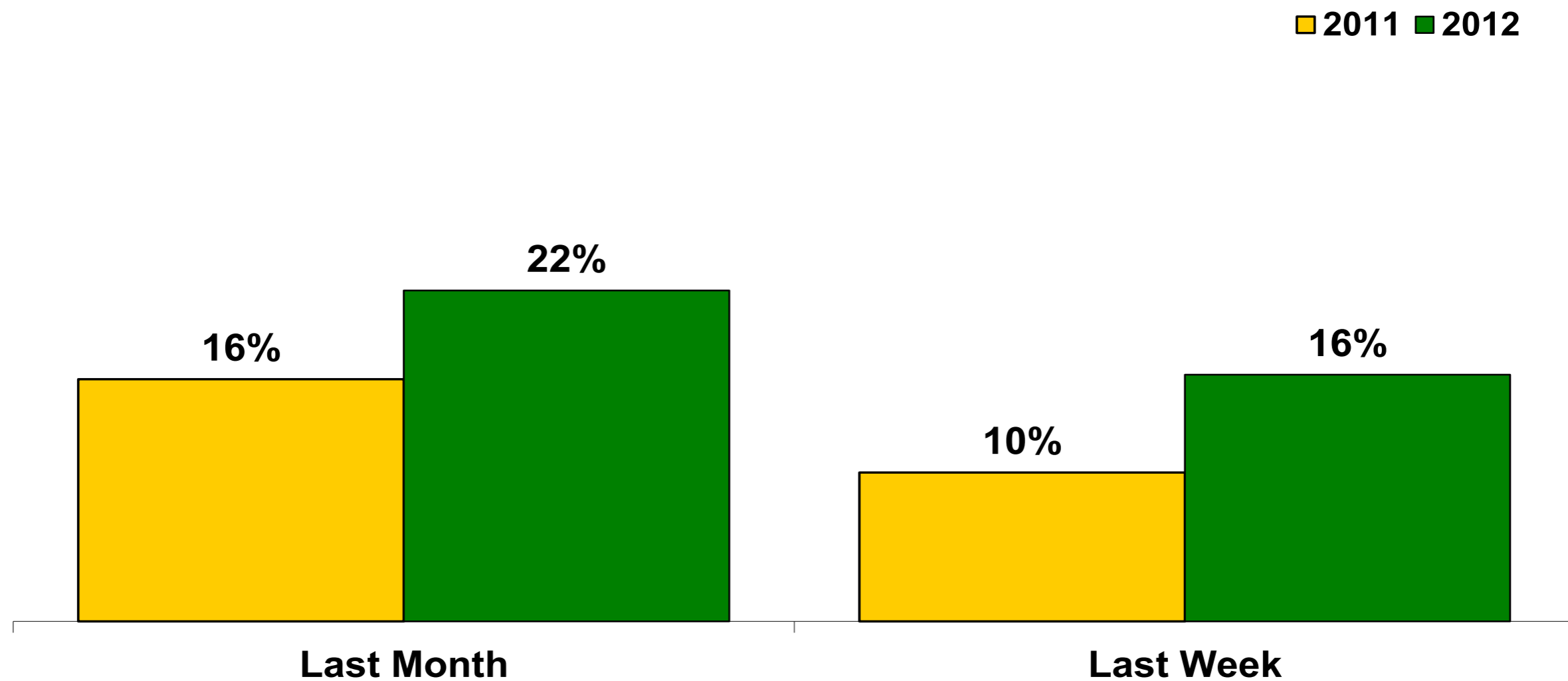


Base: Total Population 12+



Pandora Shows Year-Over-Year Growth

% Listened to Pandora

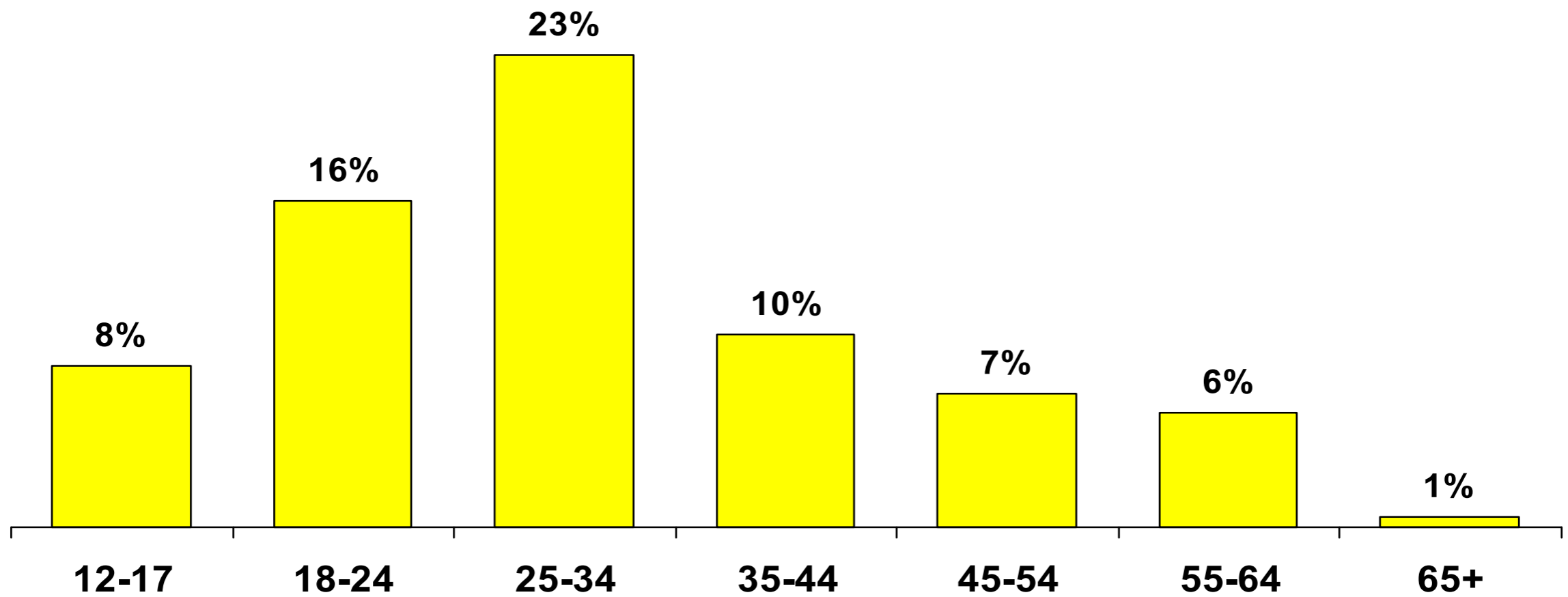


Base: Total Population 12+

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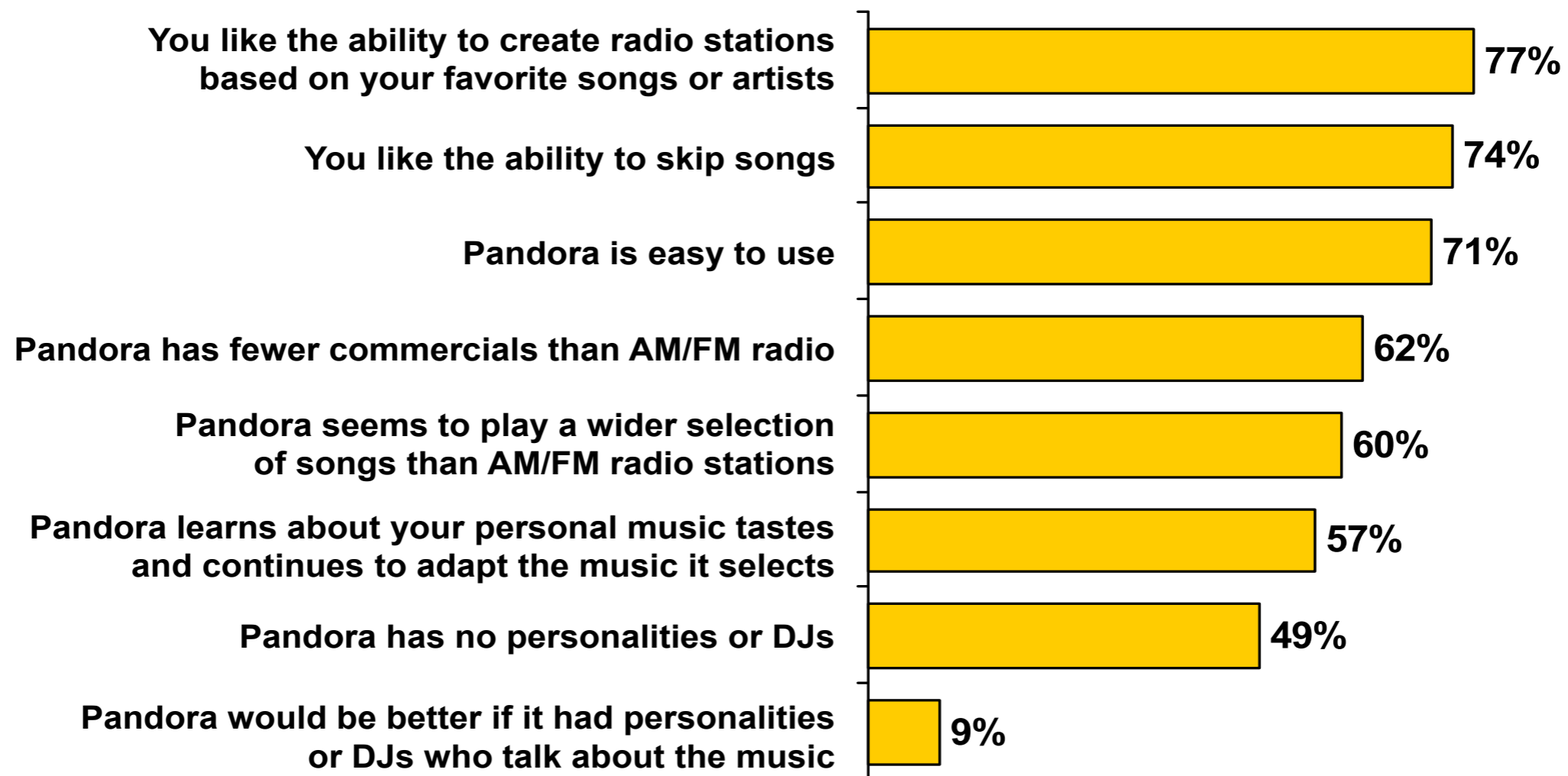
Weekly Pandora Usage Highest Among 18-34s

% by Age Group Who Have Listened to Pandora in Last Week



Personalized Content, Skipping Songs and Ease of Use Top Reasons Pandora Users Listen

% Who “Agree Strongly” This Is a Reason They Listen to Pandora

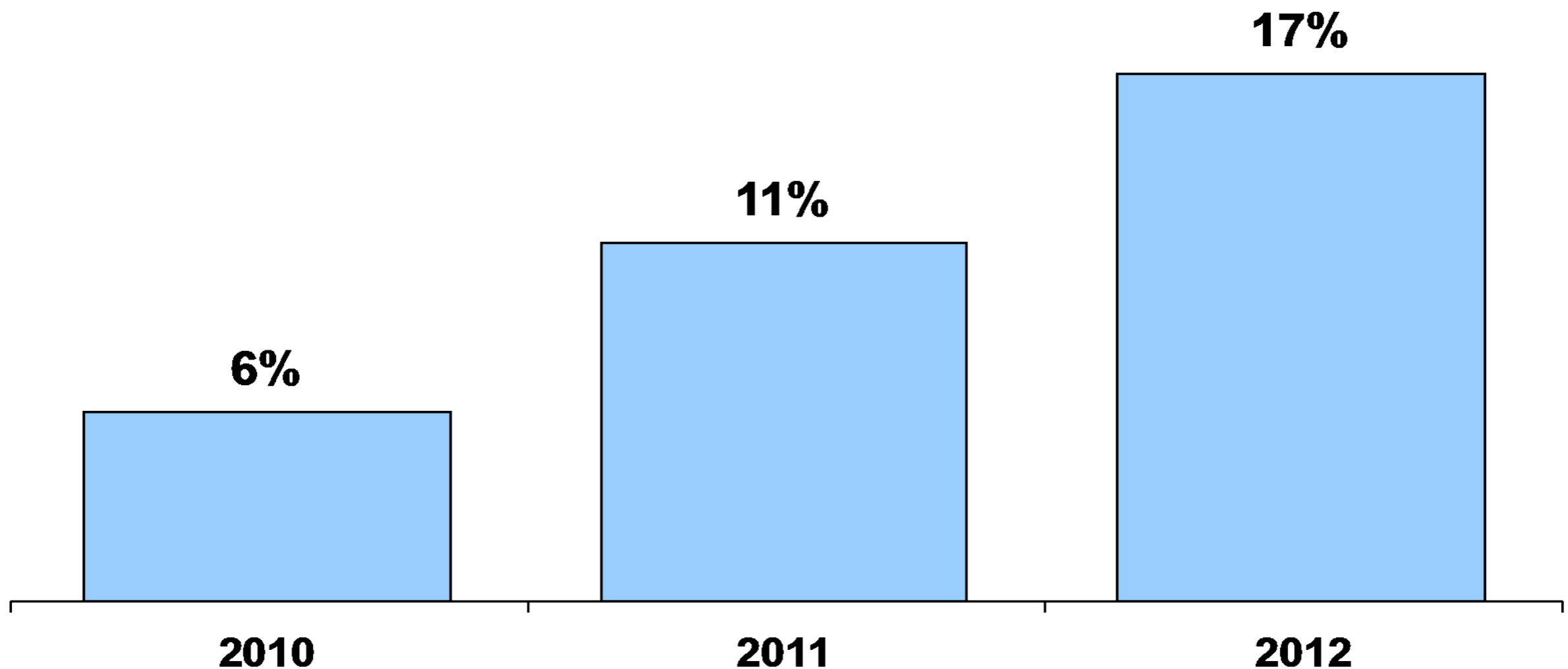


Base: Ever Listen to Pandora



Continued Rise in Those Who Use Their Cell Phone to Listen to Online Radio in Their Cars

% of Cell Phone Owners Who Have Ever Listened to Online Radio in a Car by Listening to the Stream From a Cell Phone Connected to a Car Stereo

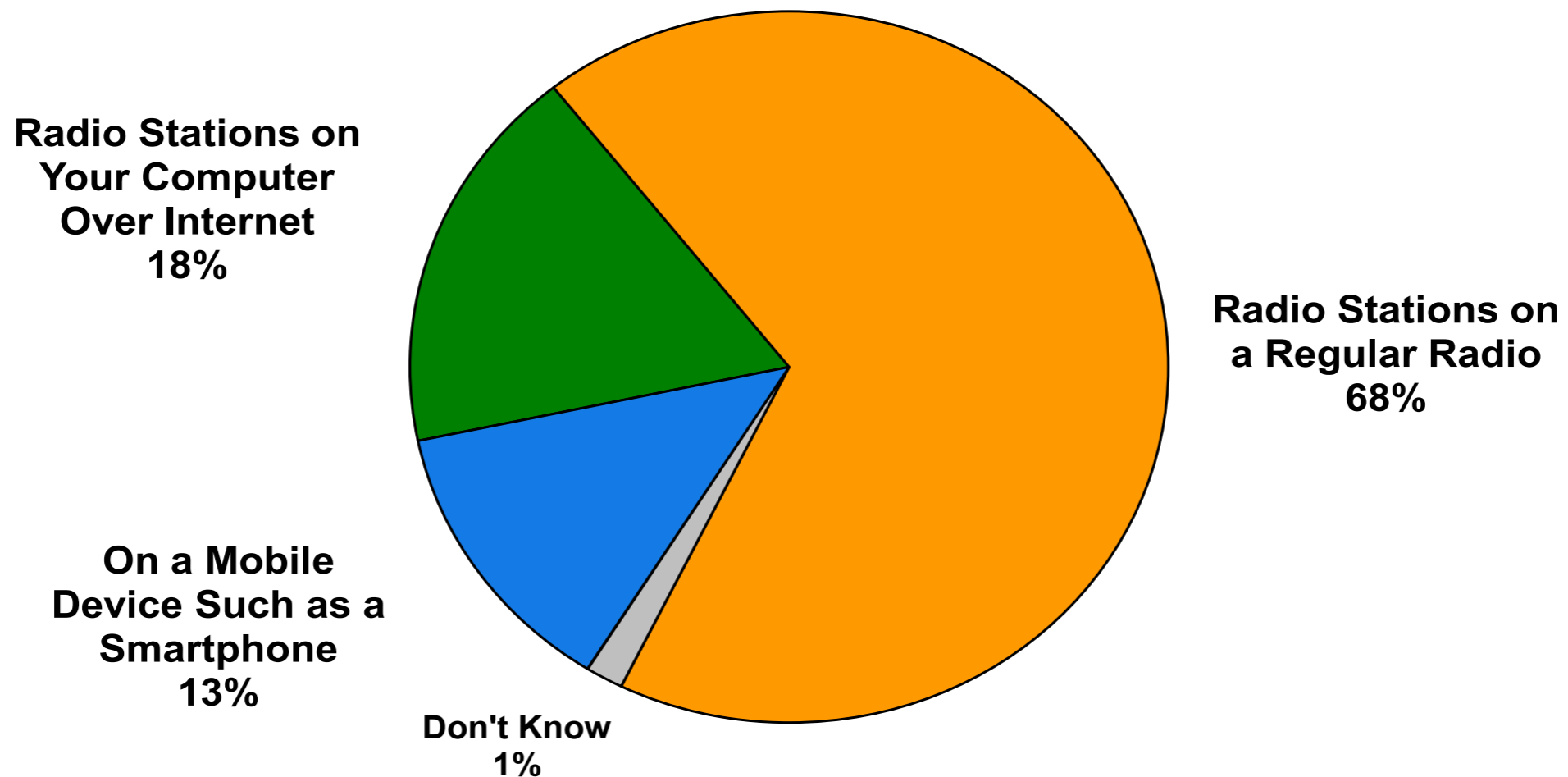


Base: Own a Cell Phone

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One in Three At-Work Radio Listeners Listen On a Computer or Mobile Device

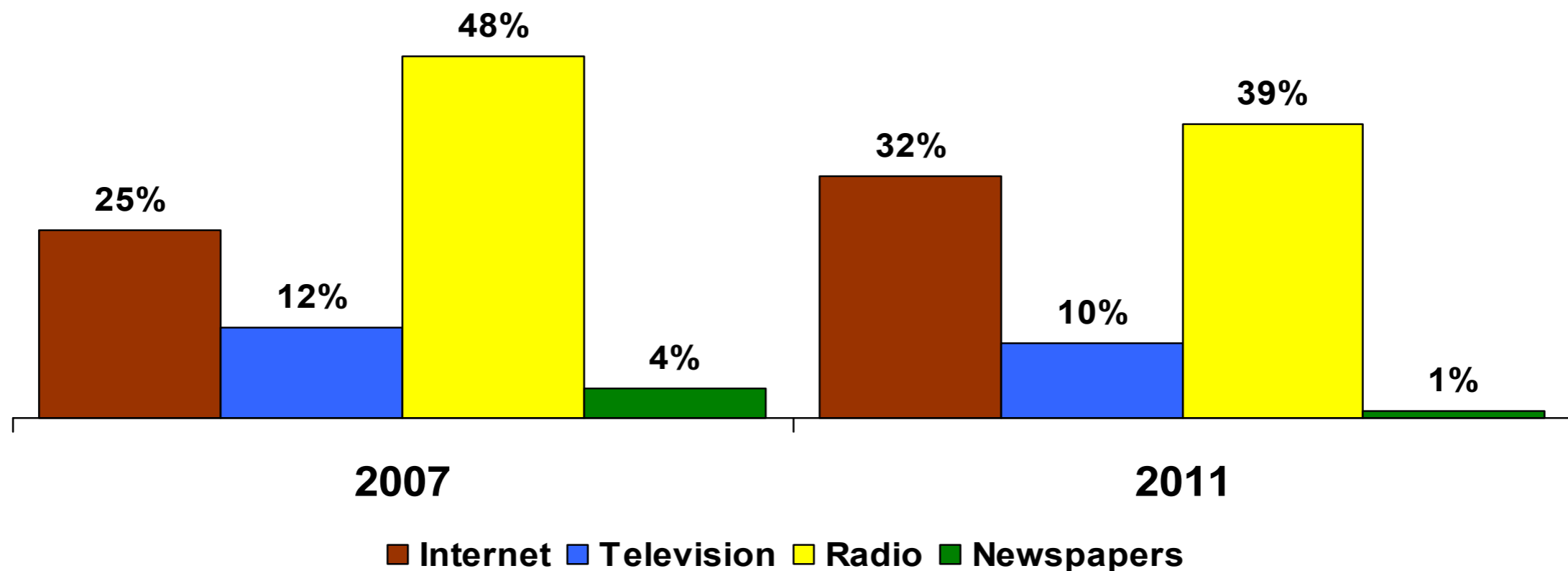
***“Think about how you listen to the radio while at work.
Do you most often listen to ?”***



Base: Persons 18+ Employed Full-Time or Part-Time and Listen to the Radio While Working (27% of Total 18+ Population)

Radio Remains the Leader for Learning About New Music, but the Internet Is Gaining

“Among Internet, television, radio and newspapers, which do you turn to first to learn about new music?”



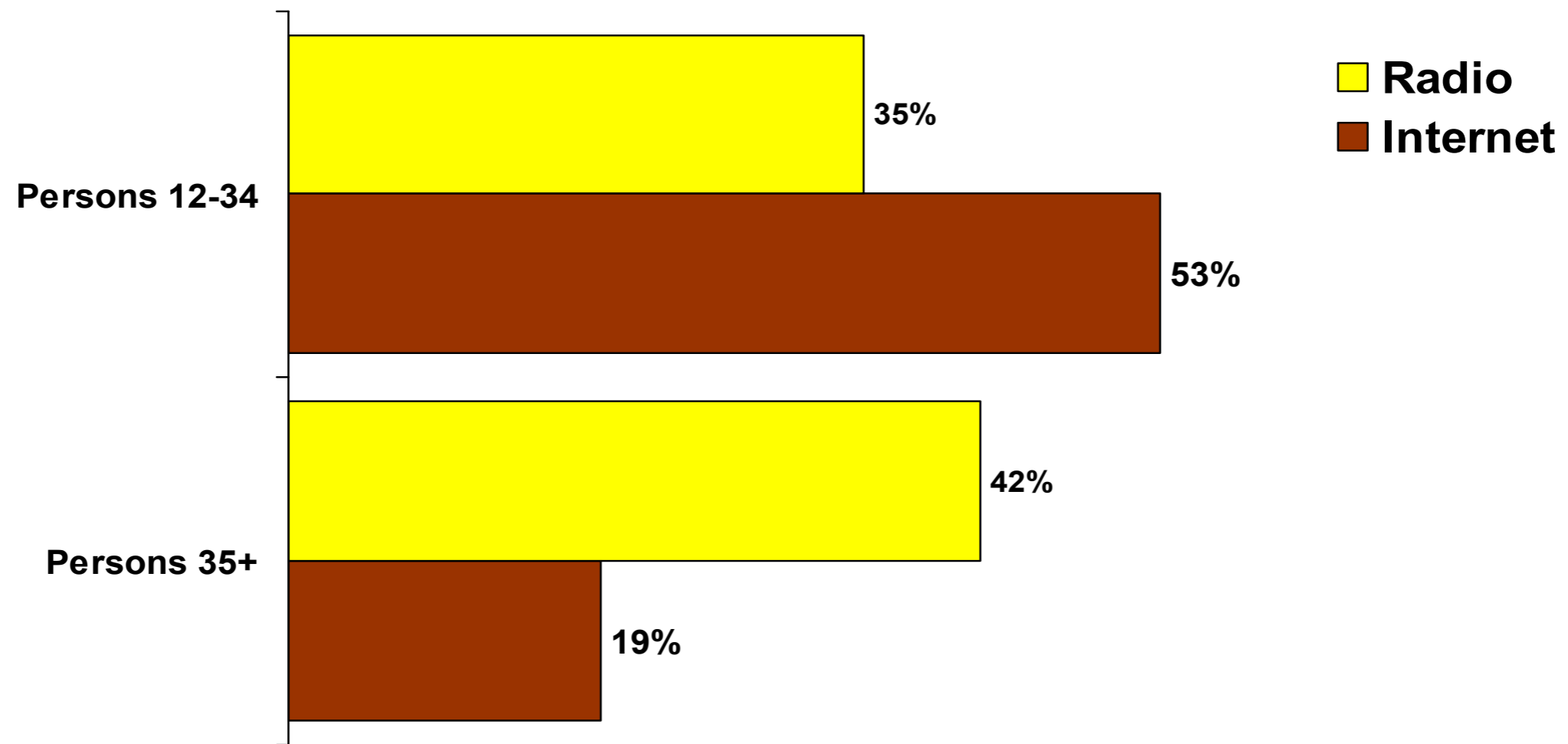
Base: Total Population 12+



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12-34s Turn to the Internet First for Music Discovery, While Radio Leads Among P35+

% Choosing Internet/Radio as Medium They Turn to First to Learn About New Music



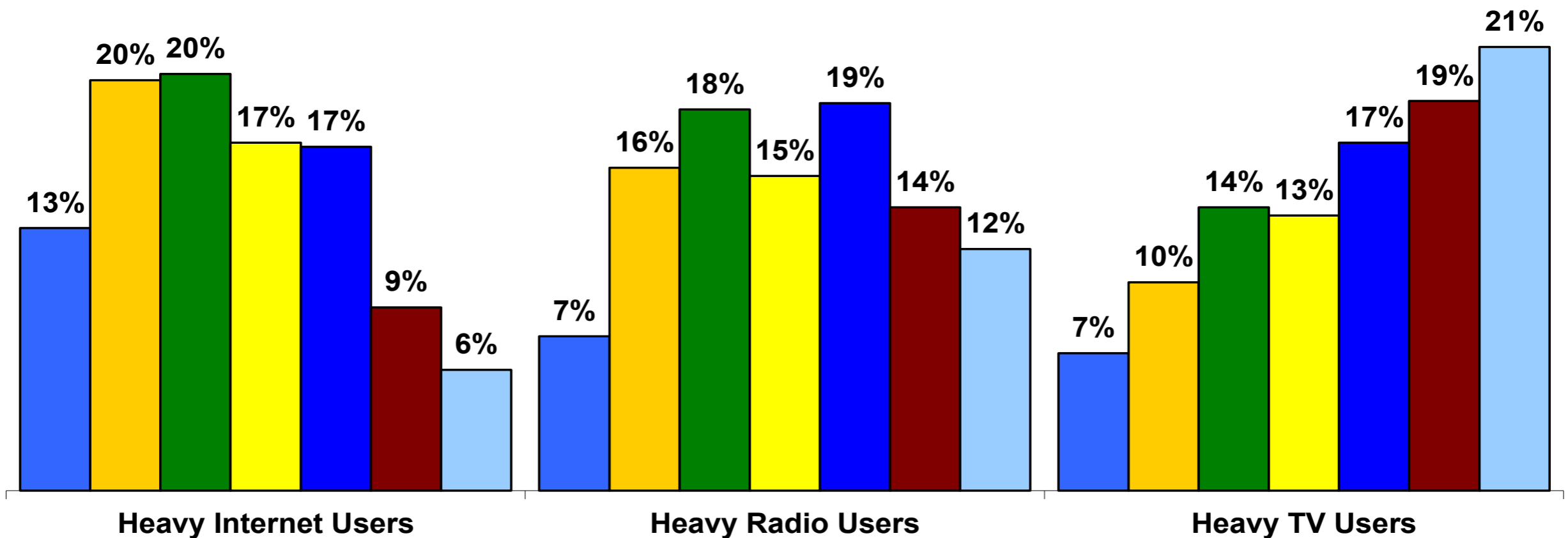
Ages of Heavy Radio Users Closest to Population; Heavy Internet Users Skew Younger, Heavy TV Users Lean Older

Age Composition of

Heavy Internet Users
Median Age = 36

Heavy Radio Users
Median Age = 42

Heavy TV Users
Median Age = 47

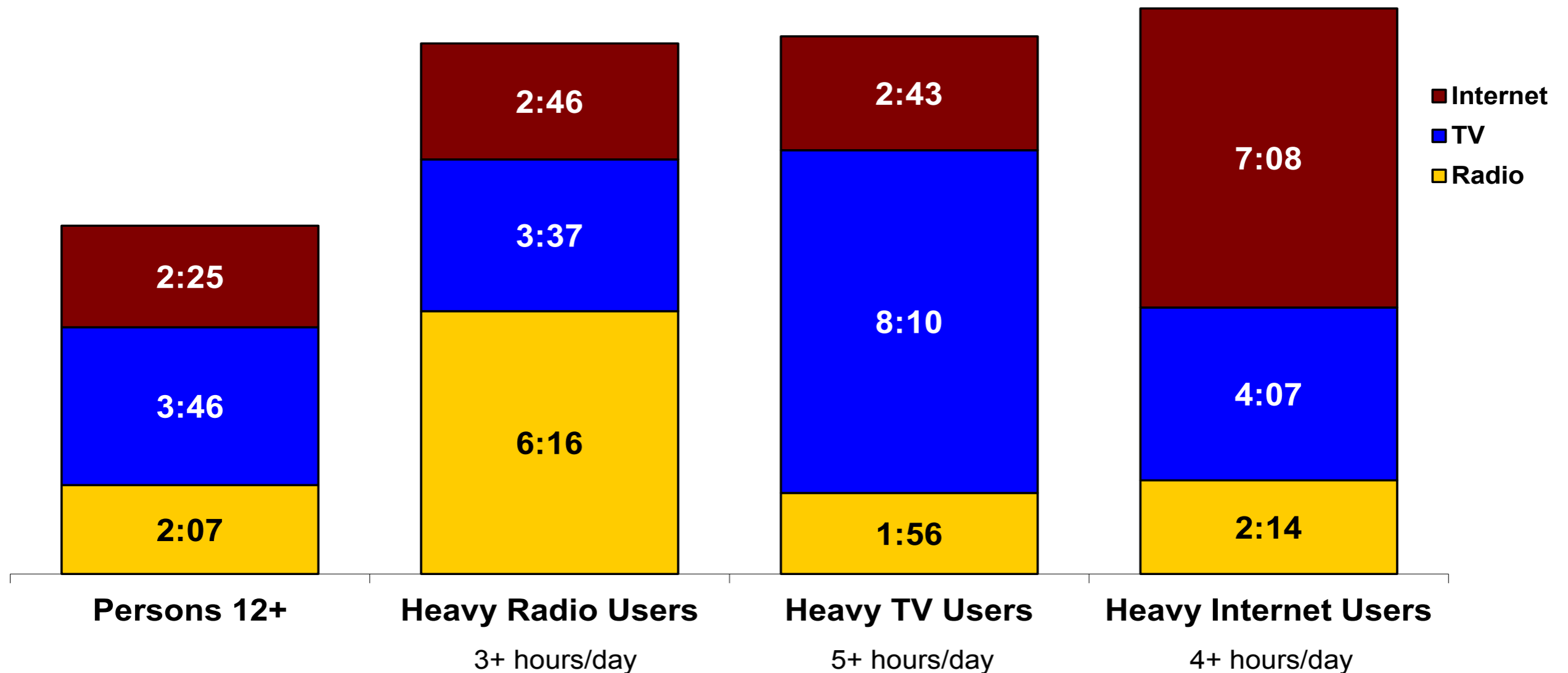


■ 12-17 ■ 18-24 ■ 25-34 ■ 35-44 ■ 45-54 ■ 55-64 ■ 65+



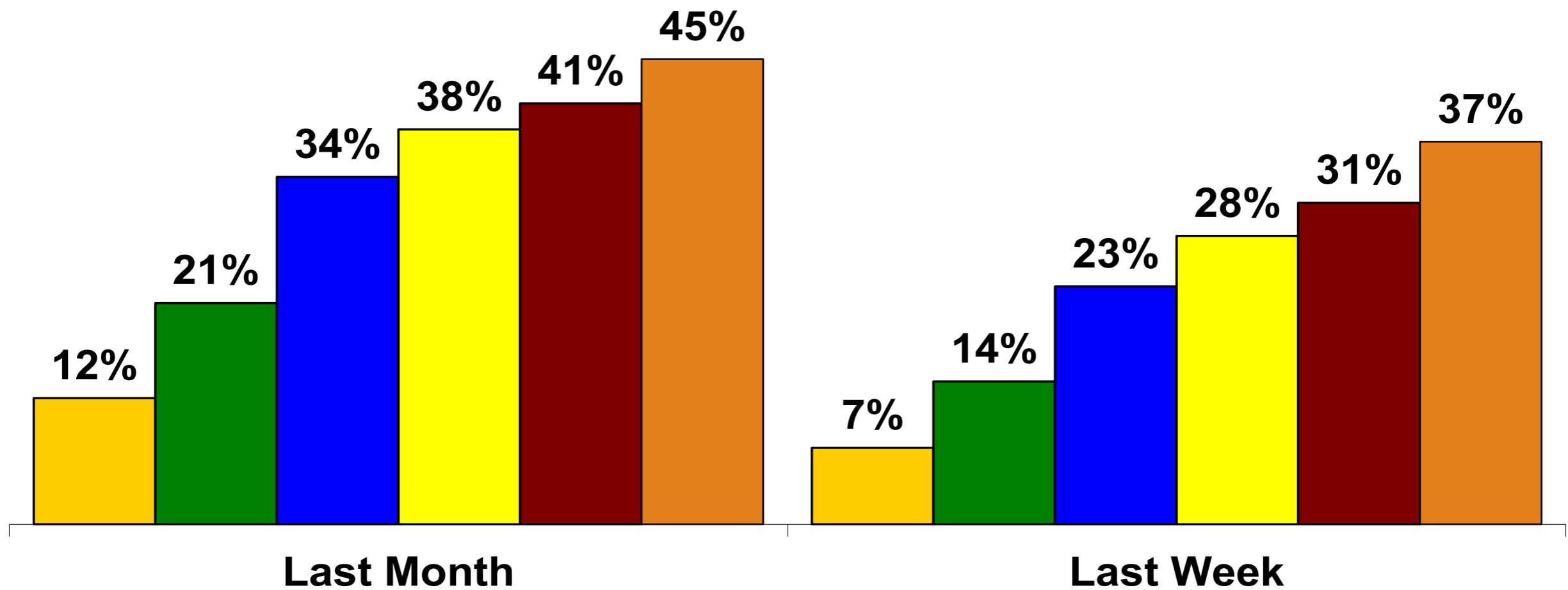
Heavy Usage of One Medium Is NOT Necessarily Associated With Less Time With Other Media

Self-Reported Average Time Spent per Day With Each Medium (Hours:Minutes)



YouTube Growth Continues

% Who Have Watched Internet Video Programming From YouTube



2007 2008 2009 2010 2011 2012

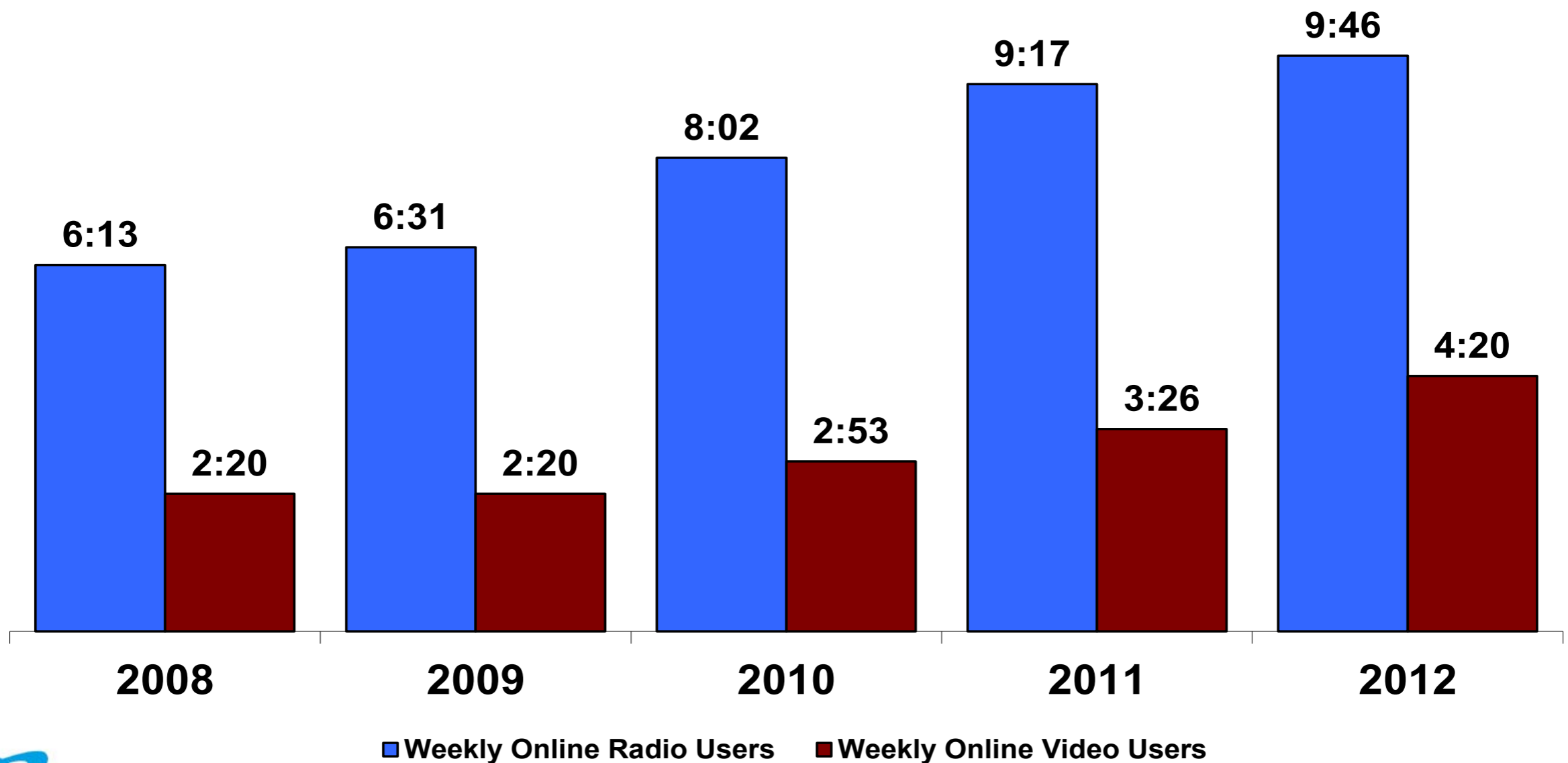


Base: Total Population 12+

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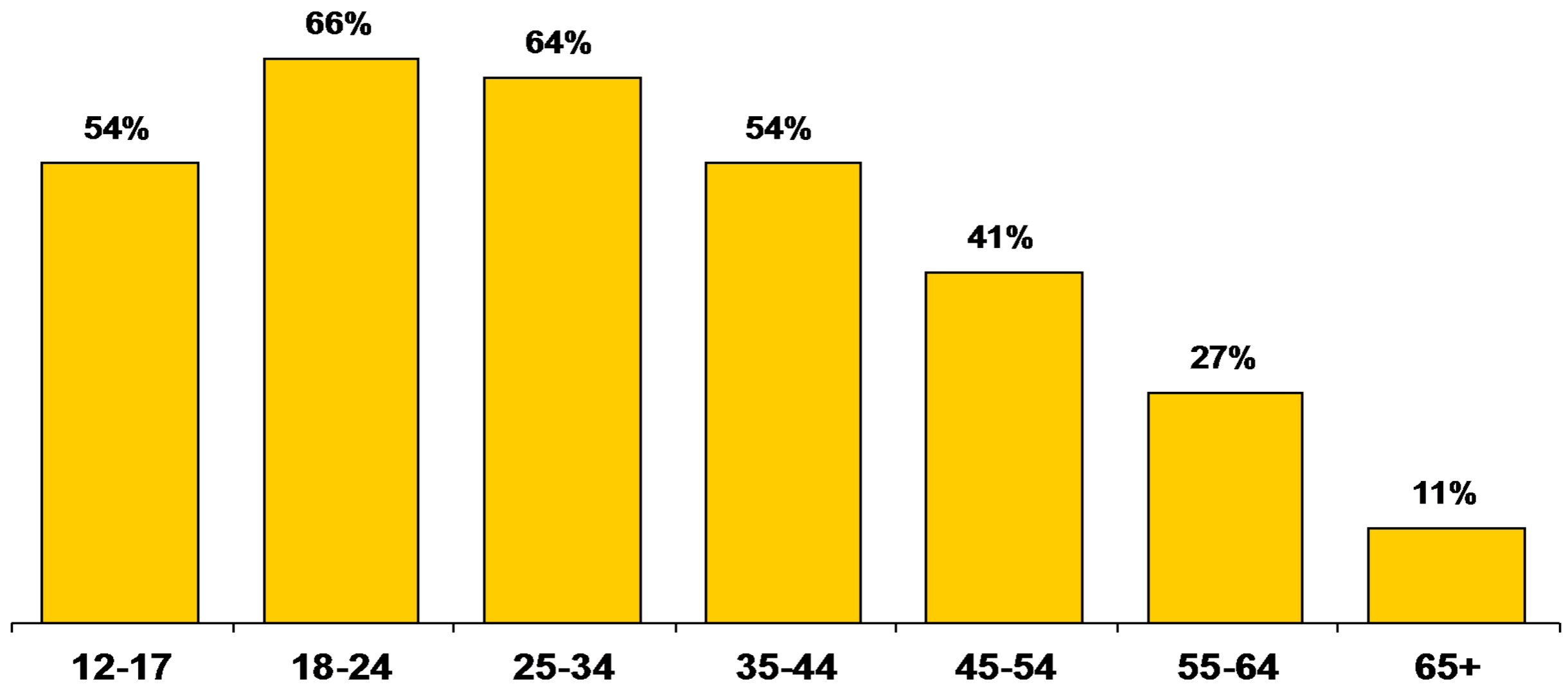
Time Spent per User With Online Radio More than Double Time Spent With Online Video

Self-Reported Average Time Spent per Week per User (Hours:Minutes)



Nearly Two-Thirds of 18-34s Own a Smartphone

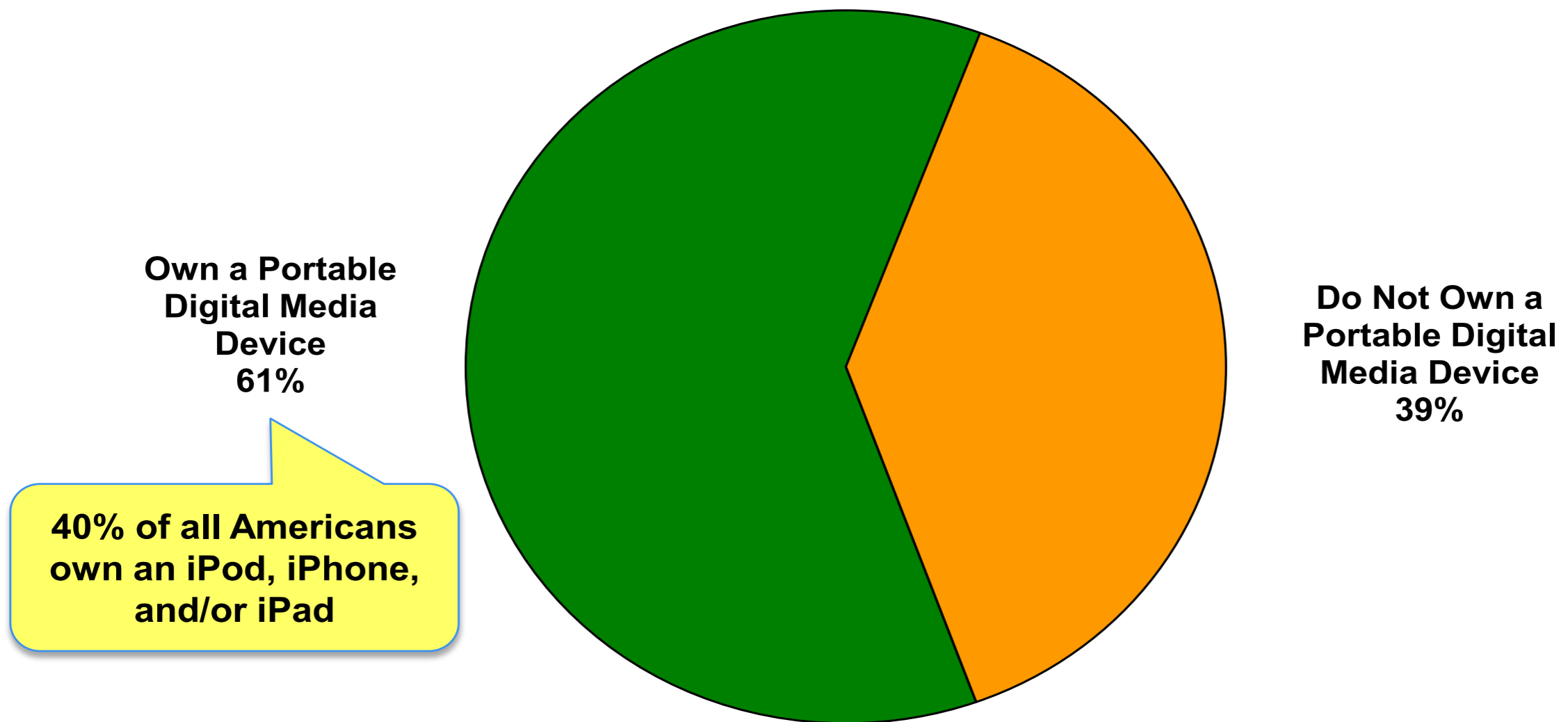
% by Age Group Who Own a Smartphone



Six in Ten Own a Portable Digital Media Device

% Who Own a Portable Digital Media Device

(Apple iPod/iPhone/iPad, MP3 Player, Tablet, Android/Windows/BlackBerry Smartphone)

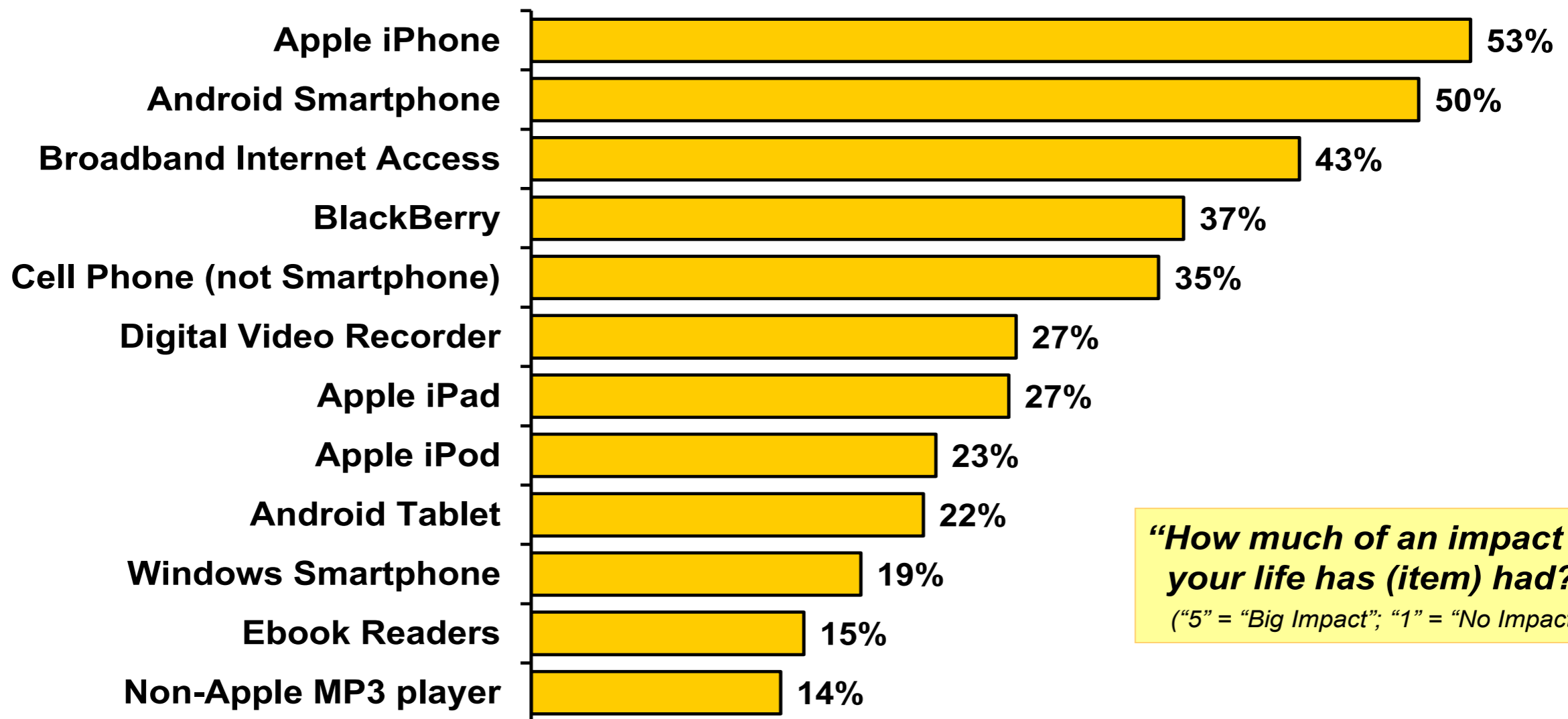


Base: Total Population 12+

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Smartphones Are the Digital Device/Platform With the Biggest Impact on People's Lives

% of Users Who Said Platform/Device Has a Big Impact On Their Life



“How much of an impact on your life has (item) had?”
 (“5” = “Big Impact”; “1” = “No Impact”)



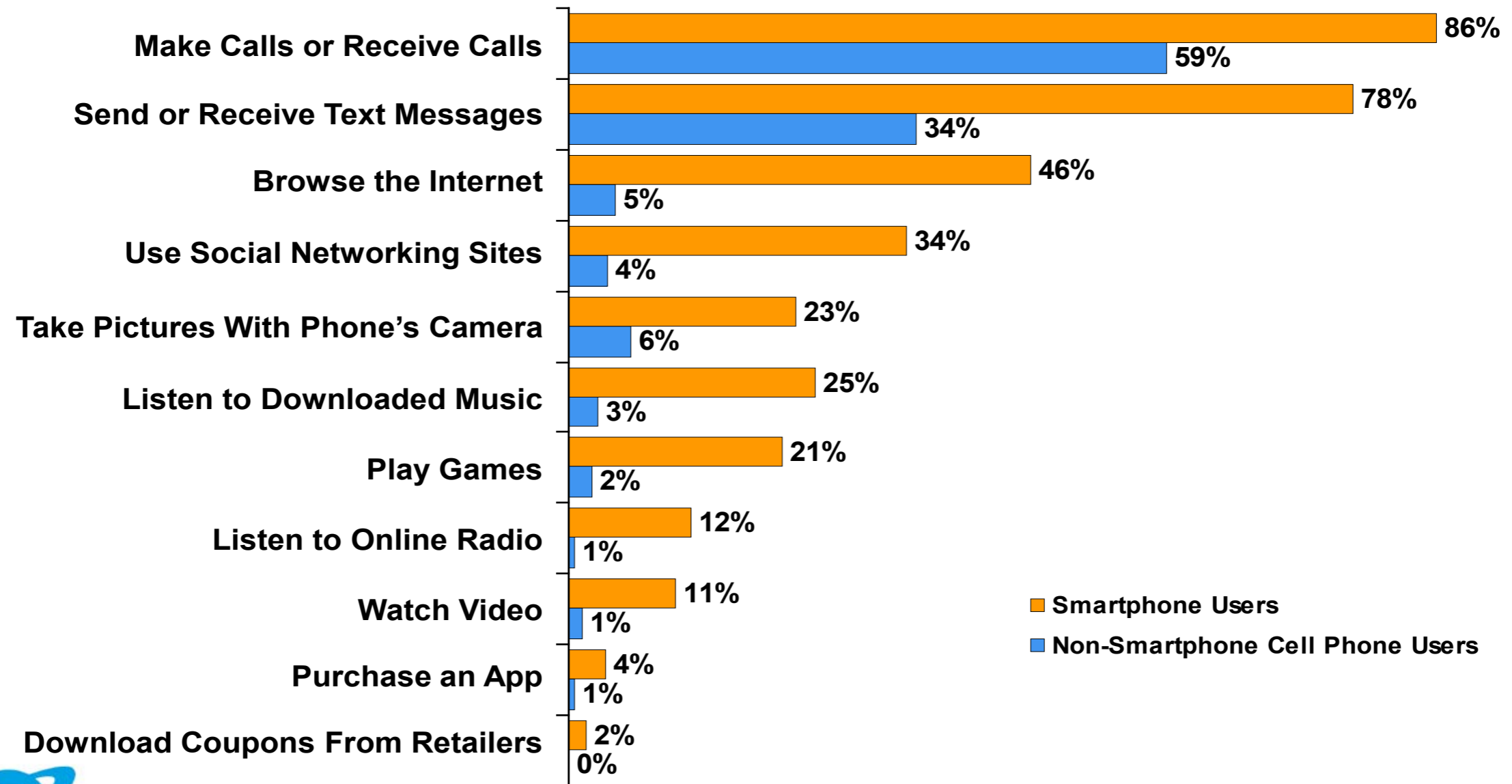
Base: Use Platform/Device

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Smartphone Owners Use Mobile Phone Functions Much More Frequently

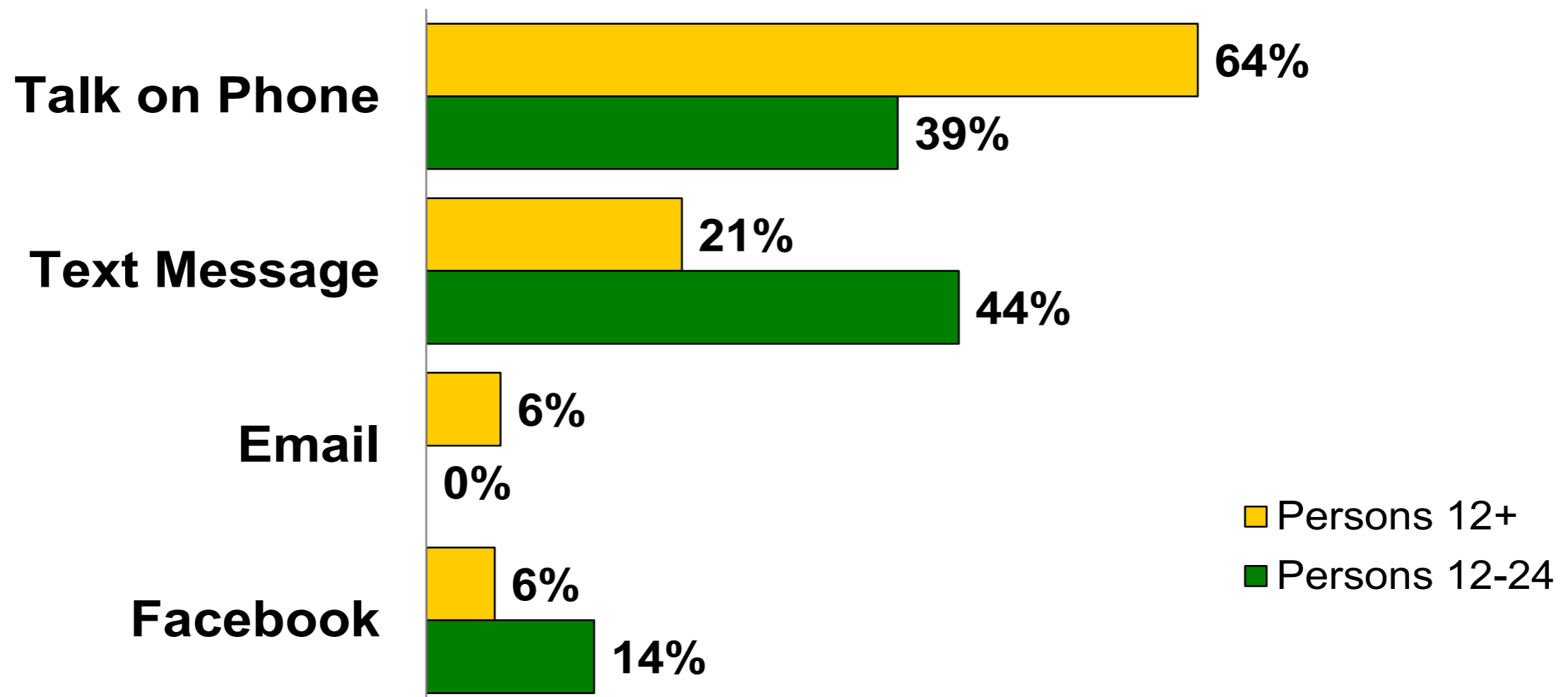
% Who (Item) on a (Non-Smartphone Cell Phone/Smartphone) “Several Times per Day” or More



Base: Own a Cell Phone/Smartphone

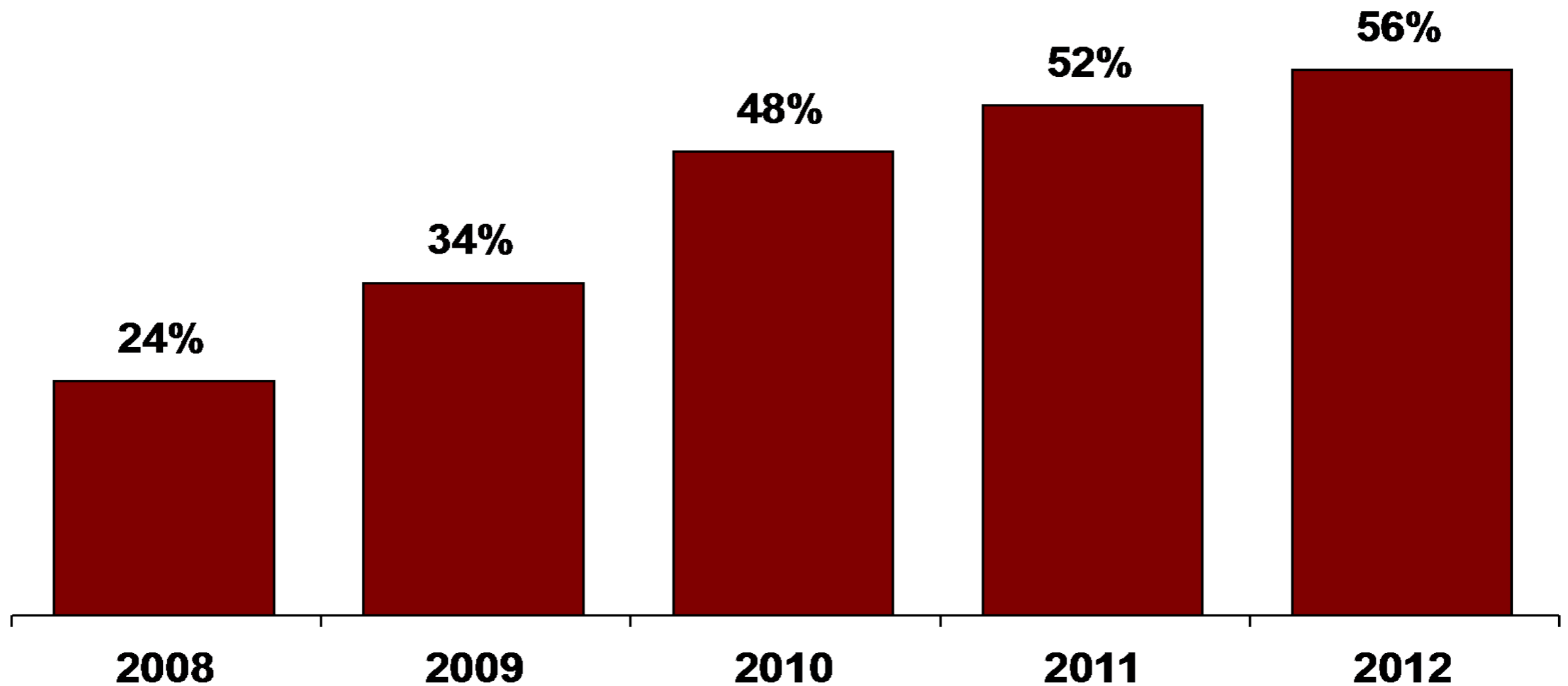
Texting Is the Form of Communication 12-24s Use Most When Not In Person

“When not in person, which ONE of the following ways do you communicate with your friends and family MOST often?”



Over Half of Americans Have a Profile on a Social Networking Site

% Who Currently Have a Personal Profile Page on Facebook, MySpace®, LinkedIn, or Any Other Social Networking Website

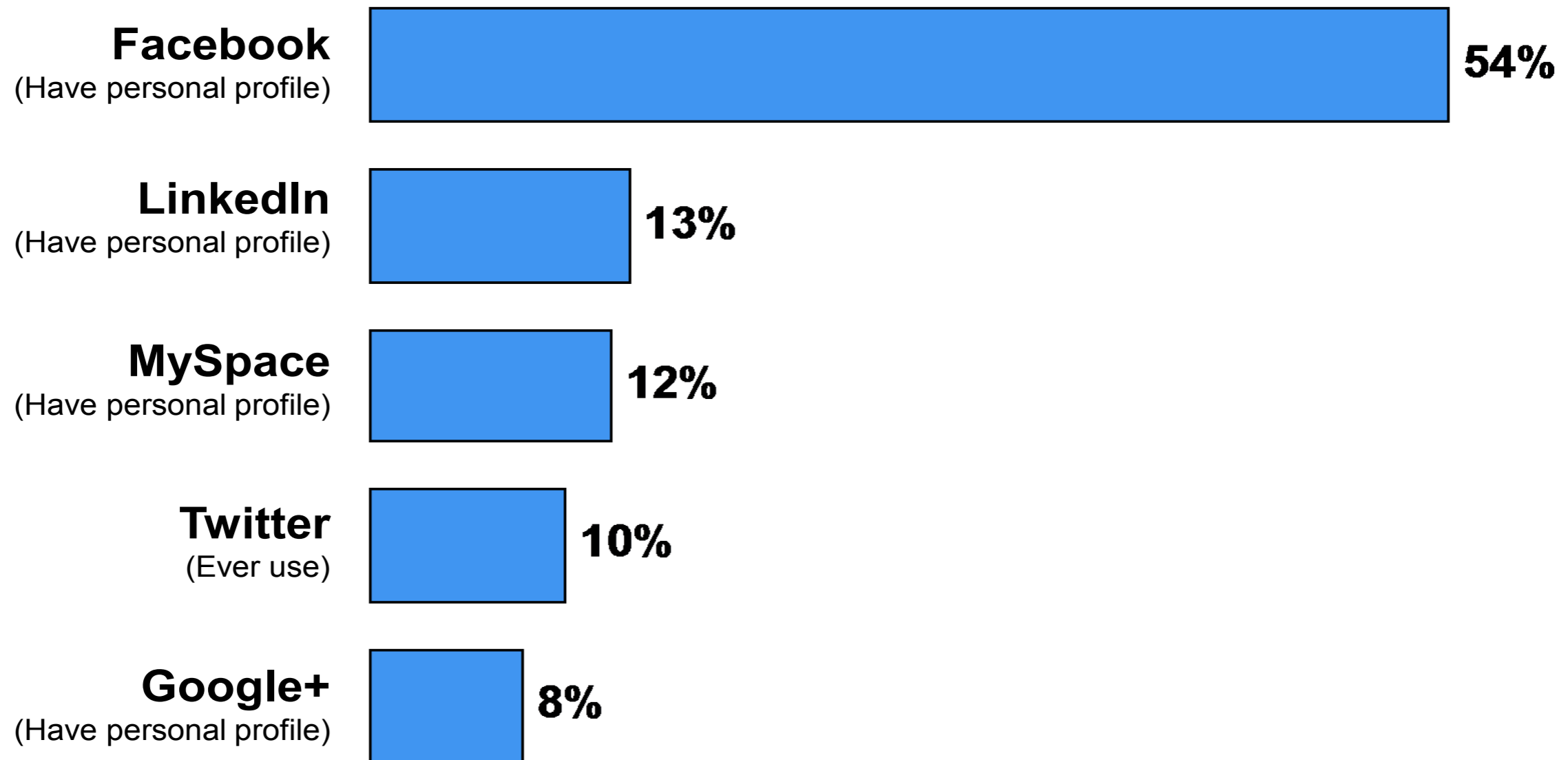


Base: Total Population 12+

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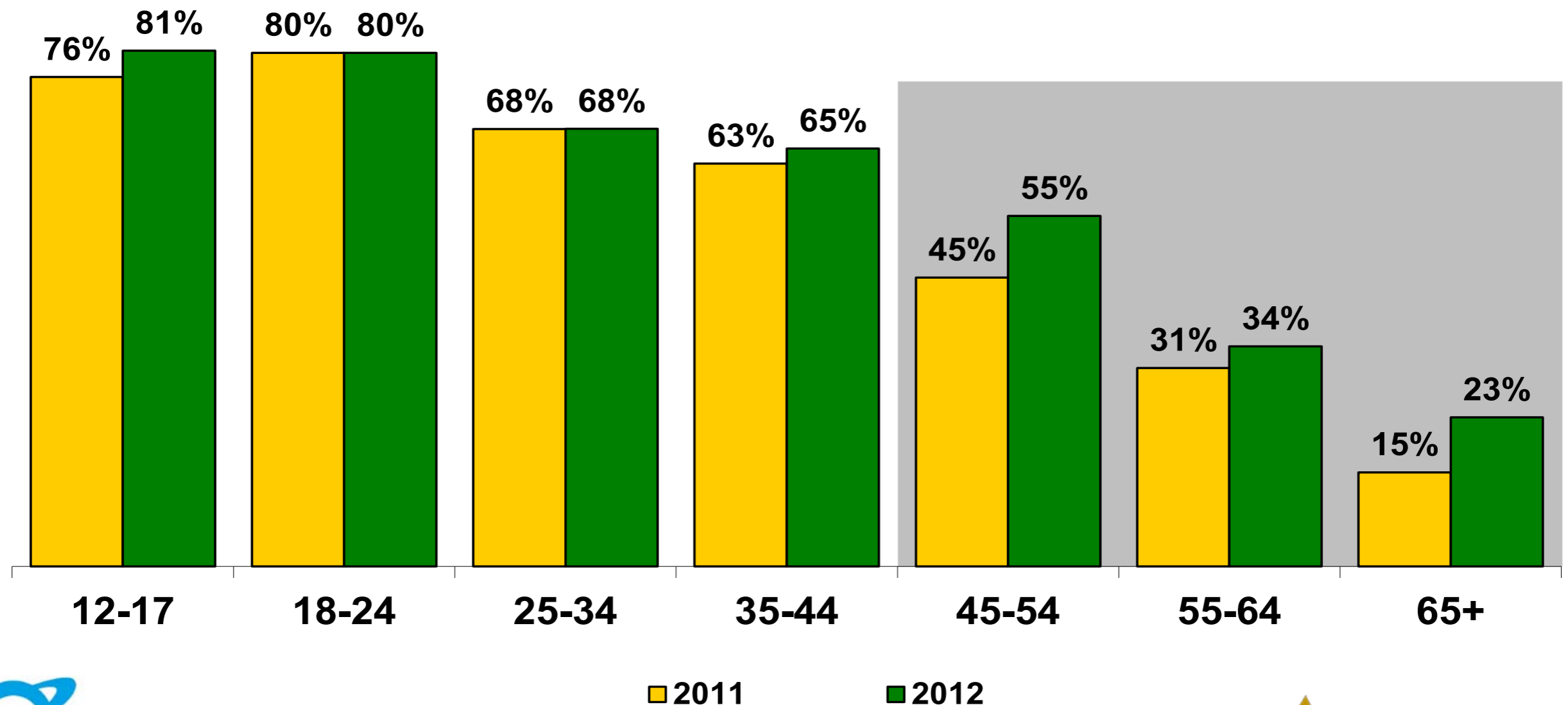
Facebook Is the Dominant Player in Social Networking

% Using Each Social Networking Site/Service



Year-Over-Year Growth in Social Networking Greatest Among People Age 45 and Older

% by Age Group Who Currently Have a Personal Profile Page on Facebook, MySpace, LinkedIn, Google+, or Any Other Social Networking Website



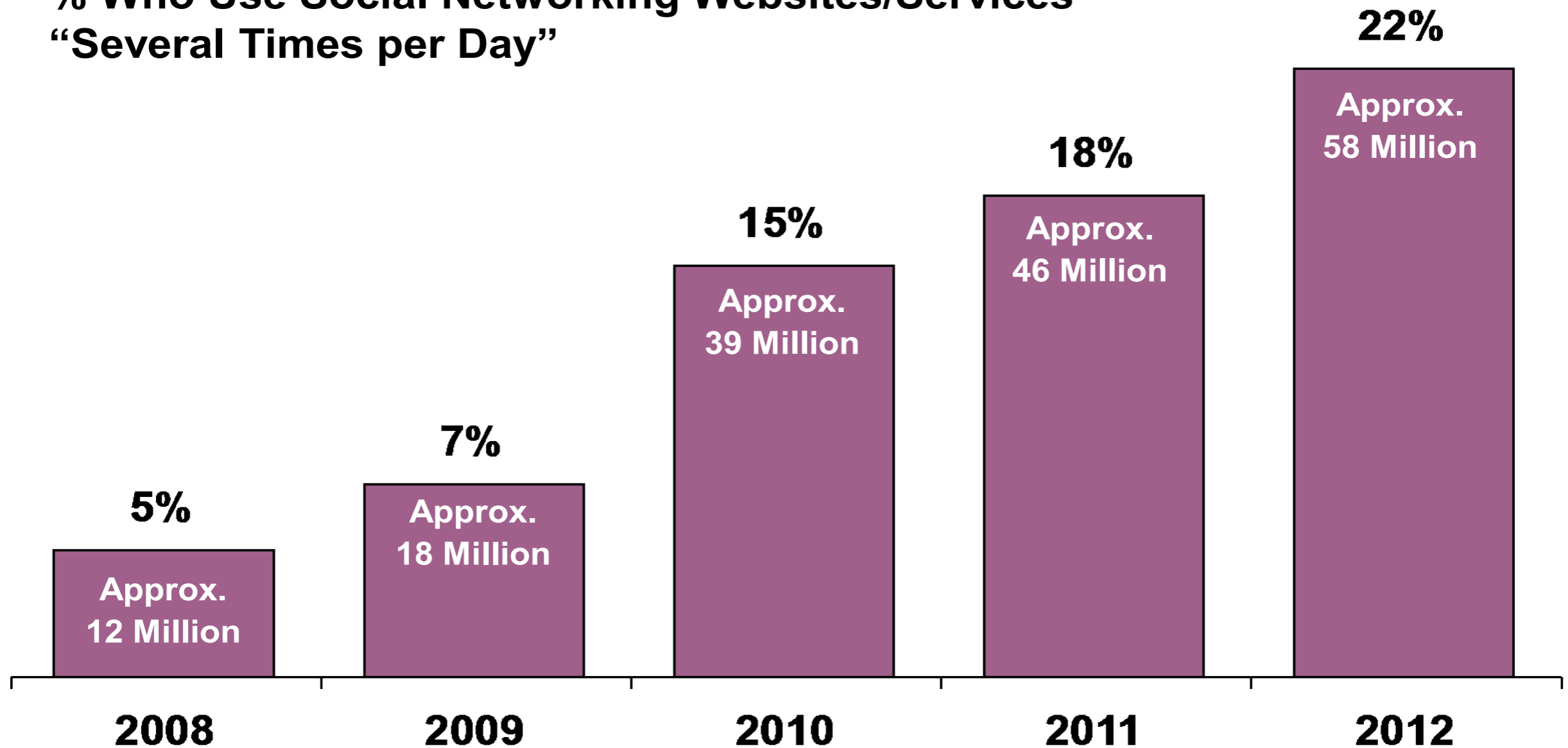
2011

2012



More Than One in Five Americans Check Their Social Network Several Times per Day

**% Who Use Social Networking Websites/Services
“Several Times per Day”**



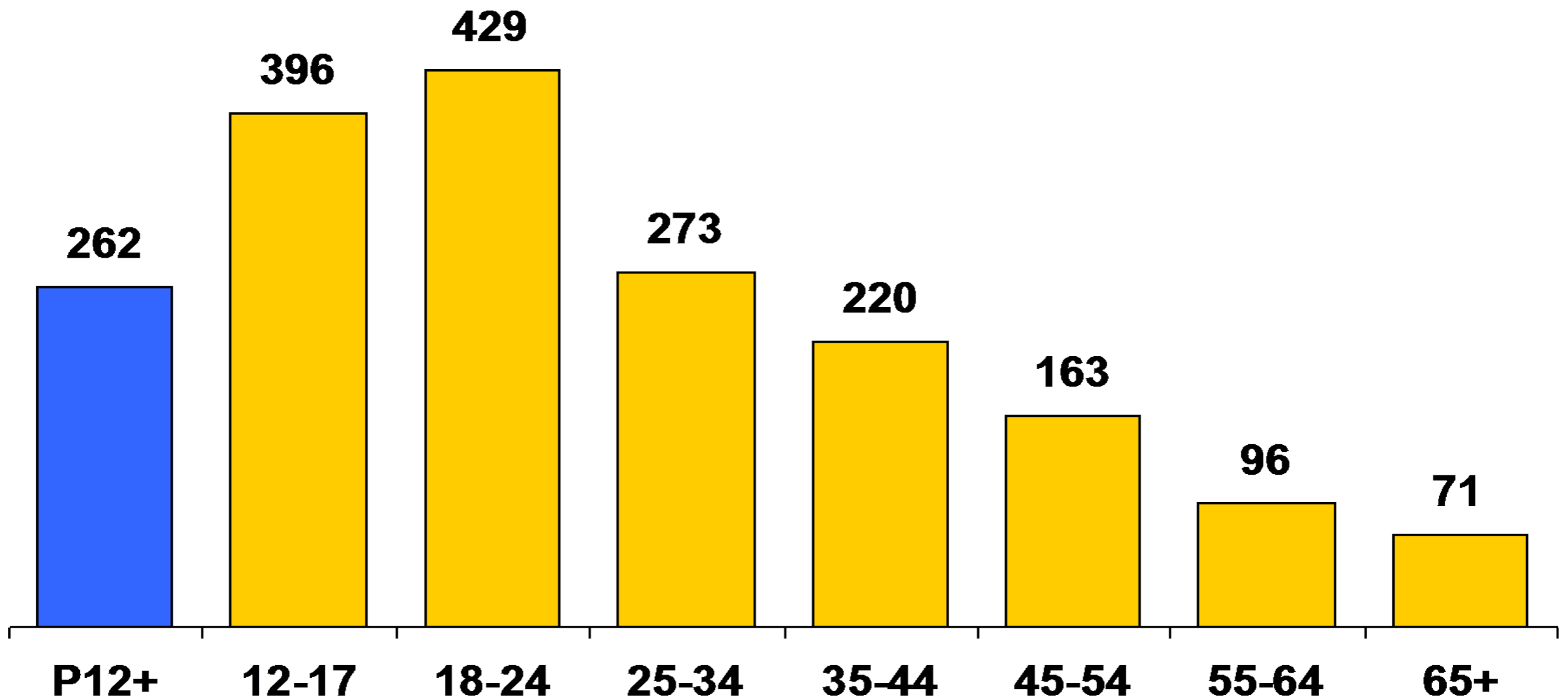
Base: Total Population 12+

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Young Facebook Users Have Lots of “Friends”

Average Number of Facebook Friends by Age Group

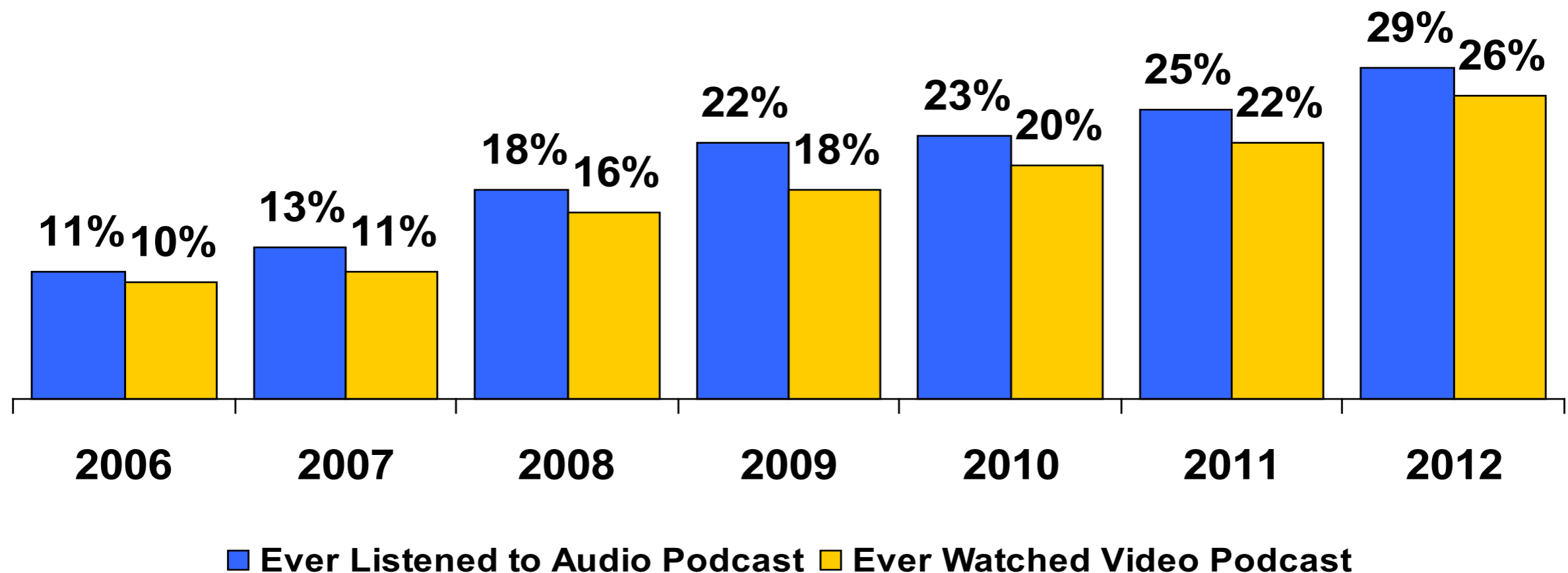


Base: Have a Facebook Profile Page

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Nearly One in Three Americans Have Ever Listened to an Audio Podcast

% Who Have Ever Listened to an Audio Podcast
% Who Have Ever Watched a Video Podcast



Base: Total Population 12+

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Observations



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Observation # 1

Digital platforms have made cross-platform strategies crucial to satisfy today's connected consumer.



Observation # 2

**Digital platforms enable
all forms of media to be
consumed at any place
at any time.**



Observation # 3

**Smartphones are having
a profound impact on media
and entertainment.**



Observation # 4

Social media is now used by the majority of Americans, changing how people and brands interact.



Observation # 5

Facebook in particular has changed the way Americans filter information.



Observation # 7

Online radio continues its upward trajectory.



Observation # 8

Radio remains at the core of consumers' media consumption and digital continues to be an expansion opportunity for radio.



Break

Javascript: Review(I)

- Blocks: { }
- Comments: `/* ... */` and `//`
- Variables: **var**
- Operators:
 - Arithmetic: `+`, `-`, `*`, `/`, `%`, `++`, `--`
 - Assignments: `=`, `+=`, `-=`, `*=`, `/=`, `%=`; e.g., `x *= 2;`
 - String concatenating: `=`; `"this" + " " + "is"`
 - Comparison operators: `==`, `!=`, `>`, `<`, `>=`, `<=`, `===`
 - Logical operators: `&&`, `||`, `!=`

Javascript: Review (2)

- Statements:
 - If
 - if else
 - for
 - while

Javascript: Review (3)

- **Functions**

Javascript: Functions

- Also known as procedures, subroutines, methods, etc.
- Purpose: To collect a set of statements to be used repeatedly anywhere in the script
- Four basic parts of a function
 - Key word: **function**
 - A function name
 - An optional comma-separated list of arguments to pass to the function enclosed in parenthesis
 - The statements in the function enclosed in curly braces
- Two sides to every function
 - The definition
 - Defines its behaviour
 - The call
 - Temporary pass control to the start of the function previously defined

JS: Function Definition & Call

```
<html> <head>
```

```
<script type="text/javascript">
```

```
function print_triangle()  
{  
  var line = "";  
  for (counter = 0; counter < 10; counter++)  
  {  
    line = line + " #";    // append to line, "#"  
    document.write(line + "<br />");  
  }  
}
```



Definition

```
</script>
```

```
</head>
```

```
<body>
```

```
<script type="text/javascript">
```

```
print_triangle();
```

```
</script>
```

```
</body> </html>
```



Call

JS: Function with arguments

```
<html> <head>
  <script type="text/javascript">
    function print_triangle(n_lines)
    {
      var line = "";
      for (counter = 0; counter < n_lines; counter++)
      {
        line = line + " #";      // append to line, "#"
        document.write(line + "<br />");
      }
    }
  </script>
</head>
<body>
  <script type="text/javascript">
    print_triangle(12);
  </script>
</body> </html>
```

JS: Function with return statement

```
<html> <head>  
  <script type="text/javascript">  
    function product(a, b)  
    {  
      return a* b;  
    }  
  </script>  
</head>  
<body>  
  <script type="text/javascript">  
    document_write(product(2, 3));  
  </script>  
</body> </html>
```


JS: Built-in functions

- alert()
- prompt()
- confirm()
- An example:

```
<html> <body>
```

```
  <script type="text/javascript">
```

```
    alert("This is an alert box");
```

```
    answer = prompt("Enter your name: ");
```

```
    yes_no = confirm("Do you really want to delete this file?");
```

```
  </script>
```

```
</body> </html>
```

JS: Data Types

- **Strings:** (`var name = "Barbra Streisand";`)
- **Numbers:** (`var age = 70;`)
- **Booleans:** (`var fact = true;`)
- **Arrays**
- **Objects**

JS: Arrays

- A special variable, which can store more than one value
- To store a list of things
- To create an Array (3 ways)

=====

```
var artists = new Array();
```

```
artists[0] = "Adele";
```

```
artists[1] = "Barbra Streisand";
```

```
artists[2] = "U2";
```

=====

```
var artists = new Array("Adele", "Barbra Streisand", "U2");
```

=====

```
var artists = ["Adele", "Barbra Streisand", "U2"];
```

=====

http://www.w3schools.com/js/js_obj_array.asp

JS: Objects

- An object is a special type of data
- It has **properties** and **methods** (functions)
- **Properties** are the details about an object
- **Methods** are things that can be done with the object
- You can create your own objects
- You can use Javascript built-in objects:
 - Strings
 - Math
 - Date
 - etc.
- You can use HTML objects
 - Document
 - Window
 - Navigator
 - etc.

JS: Built-in object examples

- **String object**

- **String property: length**

```
var text = "Hello World";  
document.write("The string length is: " + text.length);
```

- **String method: substr(start, length)**

```
document.write("Substring: " + text.substr(6, 5));
```

- **Math object**

- **Math property: PI**

```
document.write("PI accoring to JS: " + Math.PI);
```

- **Math method: sqrt**

```
var x = 16;  
document.write("Square root of " x " is " + Math.sqrt(x));
```

- **Date object**

- **Need to create it first**

```
var d = new Date();  
document.write(d);
```

- **Date method: getDay**

```
document.write("Today is the day " + d.getDay() + " of the week.");
```

JS: DOM object examples

- DOM (Document Object Model)
- Examples:
 - **document** object is the current html page in the browser window
 - document property: URL

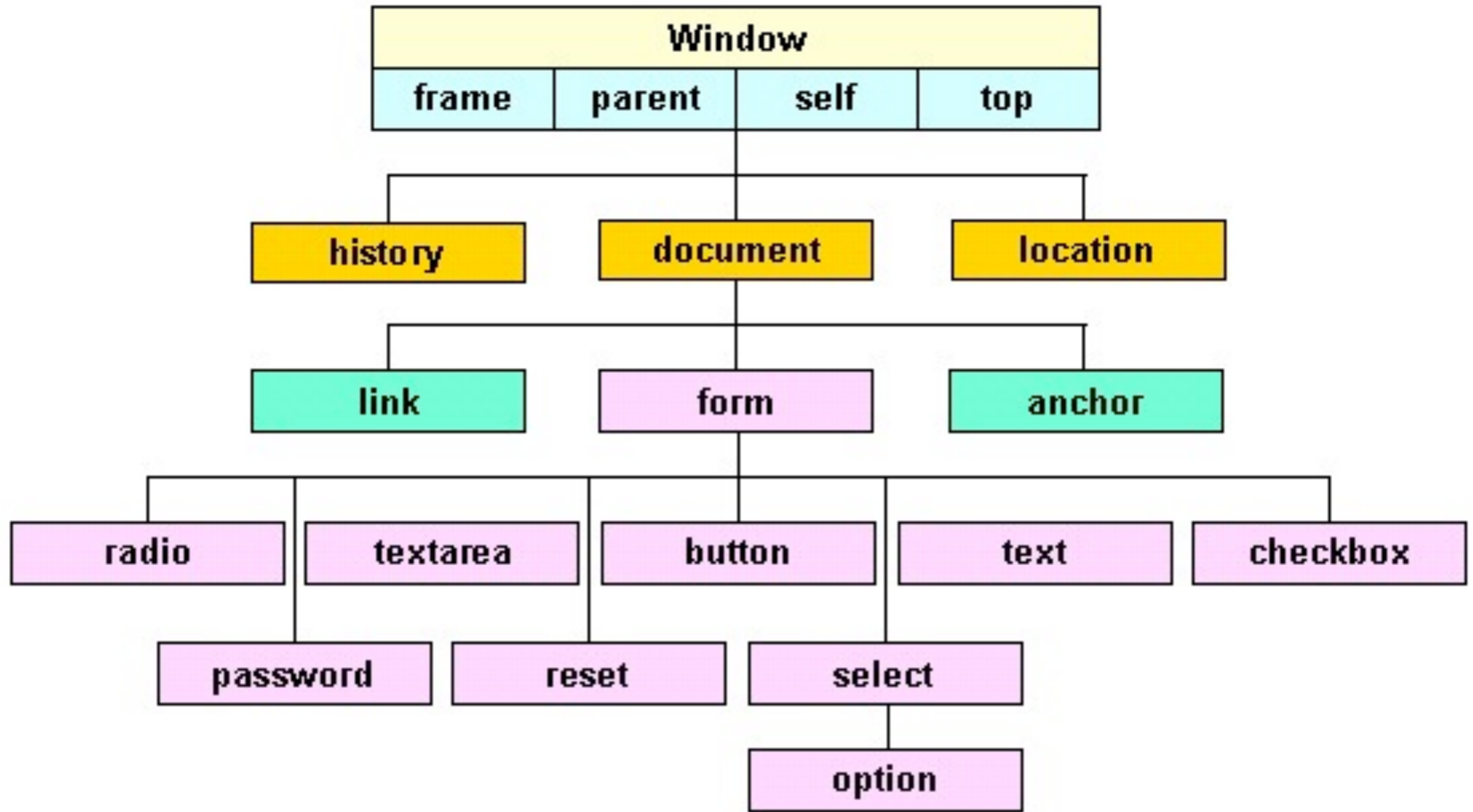
```
document.write(document.URL);
```
 - document method: write()

```
document.write("Writes to this page");
```
 - **window** object is the browser window
 - window properties: screenX & screenY

```
document.write("X:" + window.screenX + "Y:" + window.screenY);
```
 - **navigator** object contains the browser information
 - navigator properties: appName & appVersion

```
document.write(navigator.appName + navigator.appVersion);
```

JS: DOM objects



JS: DOM objects, more examples

- Button
- Event
- Image
- http://www.w3schools.com/js/js_ex_dom.asp