GLOBAL DIGITAL BANKING TRENDS 2014

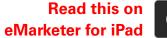
Key Usage Metrics for 31 Countries

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EXECUTIVE SUMMARY

Financial information is some of the most personal and sensitive in the minds of consumers around the globe, so the prevalence of digital banking use within a country is a good indicator of consumers' overall experience and comfort with using the internet and associated technologies. It also serves as a gauge of the maturity and stability of that country's banking system and the ability for its institutions to adapt to evolving consumer behaviors and preferences.

In developed regions like North America and Western Europe, as many as eight in 10 internet users conduct their banking activities online, often with great frequency. Up to four in 10 are now accessing that information on their mobile devices and moving beyond simple account inquiries into digital payments and commerce.

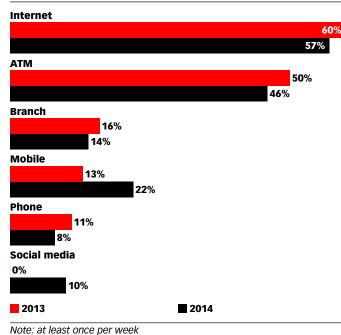
For financial institutions—and the agencies and other firms that support them—in these developed markets, the rise of digital banking brings about new challenges and opportunities. As digital channels cannibalize the use of traditional ones, banks are struggling to manage this transition while also working toward delivering even better customer experiences that can help drive sustainable business well into the future. Research from consultancy Capgemini and Efma found that the rise of mobile and social channels for banking interactions is actually eroding use of the "traditional" (i.e. desktop) internet channel.

In some emerging markets such as Kenya, web access is still hard to come by, and most people lack formal bank accounts, but almost everyone has a mobile phone. There and in countries with similar characteristics, a mix of major telcos and financial institutions have rolled out mobile money services to help expand financial access to the underserved, especially in rural areas. The success of these initiatives demonstrates the power that mobile technology has to affect banking and commerce in developing countries.

This report provides an overview of adoption, consumer attitudes and preferences, and other key digital banking trends in 31 countries across seven different regions around the globe. It will supply useful information to financial institutions and supporting firms that want a comprehensive, comparative view of the global digital banking landscape. It also offers key insights into worldwide internet, mobile, financial and commerce trends.

Banking Channels Used by Banking Customers Worldwide, 2013 & 2014

% of respondents



Source: Capgemini and Efma, "2014 World Retail Banking Report," April 24, 2014

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KEY QUESTIONS

- What is the penetration rate of online and mobile banking around the world?
- How are financial institutions adapting as consumers demand more from their digital banking experiences?
- How do digital banking approaches in emerging markets compare with developed economies?

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Defining Digital Banking

eMarketer defines digital banking as customer interactions and transactions that take place via web, mobile and other digital channels. This report refers primarily to two specific channels that digital banking primarily encompasses: online banking and mobile banking.

- Online banking is commonly called "internet banking," "desktop (or laptop) banking" and "PC banking." These terms are almost always interchangeable and refer to customer interactions and transactions with bank accounts that occur on the web via a desktop browser. When a research study refers to "online banking on a mobile device," eMarketer considers that activity to fall under the mobile banking category.
- Mobile banking is commonly called "cellphone banking" or "mobile phone banking." Its various permutations include SMS banking, mobile web banking and mobile app banking, including smartphone and tablet banking. All forms enable customer interactions and transactions with bank accounts that are effected on a mobile device.

This report also covers instances of mobile money services, which are separate from full-fledged mobile banking services. These services are primarily available in developing countries as a means to bring basic financial services to underserved, often rural populations. Mobile money is different from mobile banking in that most users are not required to have an account with a formal financial institution.

Many mobile money services are distributed by mobile network operators (MNOs) and work on an agent network model, where users can visit local merchants to deposit or withdraw cash from their account. Users rely on these services to keep their money safe, send money to relatives and friends, pay bills, add minutes to their phone and even pay for goods at physical stores.

Sourcing Notes

Several studies are cited consistently throughout this report to provide additional context about drivers and inhibitors to digital banking adoption for each country where applicable. For reference, we have included detailed descriptions of these studies below:

- "The Financial Development Report 2012" from the World Economic Forum (WEF) provides its Financial Development Index that analyzes, scores and ranks the competitiveness and financial systems and capital markets for 62 countries across seven key areas (institutional environment, business environment, financial stability, banking financial services, nonbanking financial services, financial markets and financial access). ellarketer uses this benchmark to provide perspective on how advanced each country's financial system is and the effect this factor has on digital banking adoption.
- Capgemini's and Efma's "2014 World Retail Banking Report" includes results from its 2014 retail banking "Voice of Customer Survey," which polled more than 17,000 retail banking customers across 32 countries to measure consumers' attitudes, preferences and behaviors related to banking. Results from this survey were analyzed by Capgemini and Efma to create a Customer Experience Index, which ranks customers' perceptions about the quality of their interactions with banks. eMarketer uses these findings to provide country-level perspective on consumers' banking expectations and experiences.

Unless otherwise noted, references to total country populations are sourced from 2014 US Census Bureau estimates. Additionally, estimates for internet users, mobile internet users, mobile phone users, smartphone users and tablet users are sourced from eMarketer unless otherwise noted.

ASIA-PACIFIC

Digital banking in the Asia-Pacific region is defined by its lack of uniformity, due to vastly different economies, cultures, levels of telecommunications and banking development, and overall technological adoption throughout the region.

On one end are Australia and South Korea, which have stable economies and banking sectors, along with high internet and mobile penetration that has helped drive the spread of digital banking within each country. eMarketer projects that about two-thirds of the population for both countries will be mobile phone internet users by the end of 2014, which bodes well for mobile banking growth.

Mobile Phone Internet User Penetration in Asia-Pacific, by Country, 2012-2018

% of population

	2012	2013	2014	2015	2016	2017	2018
South Korea	53.6%	64.1%	70.5%	72.7%	74.0%	75.0%	75.8%
Australia	44.5%	57.7%	65.5%	67.4%	68.9%	70.4%	71.5%
Japan	49.6%	51.9%	54.2%	56.6%	59.0%	61.2%	62.8%
China*	37.2%	41.2%	44.8%	47.3%	49.6%	51.9%	54.0%
Indonesia	16.5%	22.8%	28.4%	32.9%	38.5%	42.0%	45.3%
India	7.0%	10.4%	14.1%	17.4%	20.6%	22.8%	25.2%
Other	16.5%	18.7%	20.9%	22.8%	24.5%	26.0%	27.5%
Asia-Pacific	22.4%	25.9%	29.4%	32.0%	34.6%	36.7%	38.7%

Note: mobile phone users of any age who access the internet from a mobile browser or an installed application at least once per month; use of SMS/MMS is not considered mobile internet access; *excludes Hong Kong Source: eMarketer, June 2014

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Japan also has many of the same factors working to its advantage, although digital banking adoption is surprisingly low in a country regarded for its early adoption of a digital lifestyle. There, institutions have failed to keep up with changing customer habits and preferences.

In China, a growing middle class and expanded mobile and internet penetration have driven digital banking usage, with mobile banking growing leaps and bounds. Several tech firms based in China have gained substantial usage of their mobile financial service offerings, which provide better returns and more flexibility than similar products offered by traditional institutions.

Digital banking in India and Indonesia has been available for a number of years. It is still catching on as internet access continues to advance and as banks continue to implement financial inclusion strategies designed to expand overall banking access. Mobile money services have helped bridge this gap in some instances, especially in Indonesia, where MNOs are now starting to partner with banks to further extend digital financial access.

AUSTRALIA

The banking system in Australia is one of the most developed and concentrated in the world. In a 2012 World Economic Forum ranking of the development of leading global financial systems, Australia ranked fifth out of 62 countries analyzed. The top four major banks accounted for 84.0% of total assets as of March 2014, according to data from the Australian Prudential Regulation Authority (APRA), the country's financial regulatory body.

All top banks in Australia provide an array of digital banking offerings to consumers. With a small population of banks offering similar types of products, digital products have become a growing source of differentiation of institutions over the past few years. To that point, Australia ranked fourth out of 32 countries studied in Capgemini's and Efma's "2014 World Retail Banking Report," which measured consumers' attitudes, preferences and behaviors related to banking.

Several estimates point to wide adoption of online banking among Australia's 17.1 million internet users. Based on recent studies, between 75% of consumers and 80% of internet users are reported to have used online banking.

Comparative Estimates: Online Banking Users in Australia, 2013

% of each group

		Survey base	Usage	Survey date
ACMA, Oct 2013	80%	Internet users	Used online banking	June 2013
Ipsos OTX, June 2013	77%	Internet users*	Used online banking in the past month	March 2013
Sensis, Sep 2013	75 %	Consumers	Undertaken banking on any digital device in the past 12 months	July 2013

Note: *ages 16-64

Source: various, as noted, 2013

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While different comparative estimates come to similar conclusions about online banking adoption in Australia, mobile banking adoption numbers for the country's 18.9 million mobile phone users are more variable, often due to limited survey bases and differing usage spans conducted in polling.

For instance, a September 2013 estimate from the Australian Interactive Media Industry Association (AIMIA) is relatively high due to a focus on mobile phone users. Similarly, Bain & Company's estimate from August 2013 is also on the high side because its study only surveyed existing bank customers.

July 2013 data from Sensis found that 36.0% of consumers had undertaken banking on a mobile phone in the past 12 months. Considering there are more mobile phone users than internet users in Australia, and the study surveyed a broad consumer population, this estimate likely provides the most accurate view of mobile banking adoption in the country.

Comparative Estimates: Mobile Banking Users in Australia, 2013

% of each group

		Survey base	Usage	Survey date
AIMIA, Oct 2013	66.0%	Mobile phone users	Used mobile banking, including transfers and bill payment, on a mobile phone in the past 12 months	Sep 2013
Bain & Company, Nov 2013	43.0%	Online adults who are bank customers	Used mobile device to access banking app or website in the past quarter	Aug 2013
Ipsos OTX, Nov 2013	38.0%	Internet users*	Used mobile banking/ financial app	June 2013
Sensis, Sep 2013	36.0%	Consumers	Undertaken banking on a mobile phone in the past 12 months	July 2013
MasterCard Worldwide, Feb 2014	30.2%	Internet users**	Used mobile banking apps	Dec 2013

Note: *ages 16-64; **ages 18-64 Source: various, as noted, 2013 & 2014

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eMarketer expects that the majority of mobile phone users in Australia will own smartphones this year. Tablet adoption, however, is a different story. Comparative estimates peg around one-third of internet users in the country as tablet users.

Sensis found that 25% of consumers polled had undertaken banking on a tablet in the past 12 months. Among tablet owners surveyed by AIMIA, 74% used their device for banking, including transfers and bill payments, up from 65% in 2012.

A May 2013 study of internet users in Australia from business technology consultancy Infosys points to one reason why mobile banking usage lags behind that of online banking:

- 75% of respondents said they were comfortable sharing personal information when interacting with their bank online.
- Only 59% felt the same way when using a smartphone or tablet.

Notably, 18- to 29-year-olds were almost as comfortable sharing their phone numbers, addresses, account numbers and other personal data via mobile devices as they were online, while older respondents had lower comfort with this method, when compared with online and in-person interactions. As younger generations mature and older cohorts grow more comfortable with using mobile banking, adoption is likely to grow.

Situations in Which Internet Users in Australia Are Comfortable Sharing Personal Information* with Their Bank, by Demographic, May 2013

% of respondents in each group

	Gen	der	Age			Total
	Female	Male	18-29	30-49	50-69	
When interacting with bank in-person	95%	91%	95%	93%	90%	93%
When interacting with bank online	75%	74%	79%	80%	63%	75%
When interacting with bank via a mobile device	56%	63%	70%	61%	39%	59%

Note: respondents who chose "somewhat" or "very comfortable"; *e.g., account number, address or phone number Source: Infosys, "Engaging with Digital Consumers: They're Ready, Are You?" conducted by KRC Research and Vanson Bourne, June 25, 2013

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CHINA

China is home to the world's largest bank by asset size—the Industrial & Commercial Bank of China (ICBC). Yet the World Economic Forum ranked the country 23rd out of 62 in its 2012 study on the development of global financial systems and capital markets, citing persistent issues with system instability, financial access and the overall business environment.

Many of the major China banks offer digital banking services to customers, but ranked in the middle of the pack—16 out of 32 countries studied—in Capgemini's retail banking customer experience index.

The official government estimate of online banking usage came from the China Internet Network Information Center (CNNIC) in December 2013. It found that 40.5% of the country's more than 600 million internet users had used online banking.

Other studies from iResearch Consulting Group and Ipsos OTX pegged online banking usage at closer to seven in 10 internet users. CNNIC doesn't provide details behind its estimate, but it seems likely that the reason its number is so much lower is that it surveyed a broader population, including rural users, while the other firms focused on internet users primarily in urban areas.

Comparative Estimates: Online Banking Users in China, 2013

% of each group

		Survey base	Usage	Survey date
iiMedia Research, Dec 2013	86.7%	Internet users	Used digital banking	2013
iResearch Consulting Group, April 2013	76.9 %	Internet users	Used online banking	Jan 2013
Ipsos OTX, June 2013	73.0%	Internet users*	Used online banking in the past month	March 2013
CNNIC, Jan 2014	40.5%	Internet users	Used online banking	Dec 2013

Note: *ages 16-64

Source: various, as noted, 2013 & 2014

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A similarly broad range of estimates applies to mobile banking usage in China. CNNIC reported that 23.4% of mobile internet users had used mobile banking apps as of December 2013, while Bain & Company found that 60.0% of bank customers had used mobile banking in August 2013—the most out of any country the firm surveyed. Other estimates fell in the middle of this spectrum, from 30.0% of mobile buyers to 48.0% of internet users, likely representing more realistic mobile banking adoption rates in the country.

Comparative Estimates: Mobile Banking Users in China, 2013

% of each group

		Survey base	Usage	Survey date
Bain & Company, Nov 2013	60.0%	Online adults who are bank customers	Used mobile device to access banking app or website in the past quarter	Aug 2013
Ipsos OTX, Nov 2013	48.0%	Internet users*	Used mobile banking/ financial app	June 2013
MasterCard Worldwide, Feb 2014	36.2%	Internet users**	Used mobile banking apps	Dec 2013
Renren, Sep 2013	33.0%	Mobile internet users***	Used digital banking, including transfer, payment or investing	Q2 2013
InMobi, Jan 2014	30.0%	Mobile buyers	Used mobile for banking & finance (paying bills, P2P transfer)	Nov 2013
iResearch Consulting Group, April 2013	28.9%	Internet users	Used mobile banking	Jan 2013
CNNIC, Jan 2014	23.4%	Mobile internet users	Used mobile banking apps	Dec 2013

Note: *ages 16-64; **ages 18-64; ***ages 15-64 Source: various, as noted, 2013 & 2014

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It's important to note that while eMarketer expects 80.0% of China's 1.36 billion citizens will be mobile phone users by the end of 2014, just 38.5% will be smartphone users—a relatively low penetration rate compared with more developed economies but greater than other emerging Asia-Pacific countries like Indonesia and India—ultimately amounting to more than 500 million smartphone users.

Mobile banking is making strong inroads among consumers in China. The use of mobile banking nearly doubled between 2012 and 2013, according to CNNIC's "Internet Development in China" report.

Further, a recent push from major internet companies in China into mobile financial services, including Alibaba, Baidu and Tencent, has posed an increasingly serious challenge to the country's traditional, heavily regulated financial institutions.

Alibaba's digital payments affiliate, Alipay, launched its Yu'e Bao product in June 2013—a money market fund into which Alipay's more than 100 million mobile users can easily deposit on their smartphone. They also can withdraw from Yu'e Bao or even use it as a source of payment anywhere Alipay is accepted. By contrast, traditional banks in China have greater restrictions around moving money from similar types of accounts.

Since its inception, Yu'e Bao, which translates to "leftover treasure," has offered higher investment returns compared with the 3.3% yield China banks offer on one-year fixed deposits. These higher returns, combined with ultimate convenience, have had a substantial effect.

By the end of Q1 2014, Yu'e Bao's fund comprised more than \$87 billion in assets—the fourth largest fund of its kind in the world. Furthermore, whereas the four largest banks in China held 55% of the country's household savings in 2012, their share had dropped to 50.8% as of the beginning of 2014.

Other internet firms have followed Alipay's lead. Baidu launched a similar product called Baifa in October 2013 and Tencent launched Licaitong on its WeChat messaging platform in January 2014. Both have attracted additional users to these funds. As tech firms in China continue to go deeper into offering financial services, state-owned banks and regulators are not expected to sit on the sidelines.

INDIA

The World Economic Forum ranked India 40th out of 62 countries in its 2012 study on the development of global financial systems and capital markets, citing an array of challenges such as the inability to enforce contracts and underdeveloped infrastructure. However, banking in India is currently undergoing a transformation, and digital banking is a key driver. India ranked 11th out of 32 countries studied in Cappemini's 2014 retail banking customer experience index, a measure of consumers' attitudes, preferences and behaviors related to banking.

Online banking has been available in India since the late 1990s, when privately-owned ICICI Bank launched the first platform of its kind. This put pressure on state-owned and other private financial institutions to deliver similar services to their own customers.

Although online banking has been available in India for awhile, usage estimates are hard to come by. According to March 2013 research from Ipsos OTX and Ipsos Global @dvisor, 61% of internet users in India reported using online banking. comScore Media Metrix found that just over one-third of internet users had used online banking in the month prior to its April 2014 survey.

For context, eMarketer estimates that just 17.4% of the country's 1.24 billion citizens will be internet users by the end of 2014. Many live in rural areas, limiting the potential audience for adoption.

Comparative Estimates: Online Banking Users in India, 2013 & 2014

% of each group

		Survey base	Usage	Survey date
Ipsos OTX, June 2013	61.0%	Internet users*	Used online banking in the past month	March 2013
comScore Media Metrix, June 2014	33.6%	Internet users**	Used online banking in the past month	April 2014

Note: *ages 16-64; **ages 15+; home and work locations Source: Ipsos OTX and Ipsos Global @dvisor, "Socialogue," June 18, 2013; comScore Media Metrix, June 6, 2014

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Overall, comScore Media Metrix estimated that there were 27.4 million online bankers in India. The largest cohort—12.0 million online banking users—and also the group with the highest penetration was 25- to 34-year-olds.

Online Banking Users in India, by Age, April 2014 millions and % of internet users

	Online banking users	% of internet users
15-24	8.2	26.7%
25-34	12.0	38.9%
35-44	4.7	36.4%
45-54	1.7	34.3%
55+	0.9	36.3%
Total	27.4	33.6%

Note: home and work locations via desktop Source: comScore Media Metrix, June 6, 2014

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Mobile

Though less than one in five in India will use the internet by the end of the year, 47.0% of the population will be mobile phone users, and banks have been working to build out their mobile banking services to reach a broader population. Because only 10.0% of the population will have smartphones by the end of the year, institutions still heavily rely on text messaging to deliver their mobile banking services.

With these considerations in mind, comparative estimates of mobile banking usage may be on the high side. Bain & Company only surveyed existing bank customers, while Ipsos OTX specifically queried internet users about mobile app usage. Broader surveys of consumers in both urban and rural areas are required to get a clearer picture of mobile banking adoption.

Comparative Estimates: Mobile Banking Users in India, 2013

% of each group

		Survey base	Usage	Survey date
Bain & Company, Nov 2013	55 %	Online adults who are bank customers	Used mobile device to access banking app or website in the past quarter	Aug 2013
lpsos OTX, Nov 2013	46%	Internet users*	Used mobile banking/ financial app	June 2013
MasterCard Worldwide, Feb 2014	34%	Internet users**	Used mobile banking apps	Dec 2013

Note: *ages 16-64; **ages 18-64 Source: various, as noted, 2013 & 2014

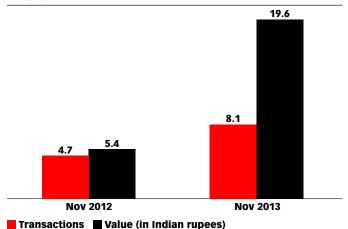
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Nevertheless, data released by the Reserve Bank of India showed that mobile banking transactions in the country grew over 70% from November 2012 to November 2013, while transaction values more than tripled over the same time period. Rapid growth indicates users are becoming more comfortable with moving ever-larger amounts of money via their mobile devices.

Mobile Banking Transactions in India, Nov 2012 & Nov 2013

millions



Source: Reserve Bank of India, as cited in MediaNama, Jan 6, 2014

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Additionally, India's government has been pushing a directive of financial inclusion among rural populations for the past several years, which has helped propel the percentage of banked households in rural areas from 30.1% in 2001 to 54.4% in 2011. The expansion of ATMs and branches by banks has anchored this effort, although as mobile adoption grows, mobile figures increasingly prominently in inclusion strategies.

An important component of inclusion has been the Unique Identification Authority of India (UIDAI), which has been collecting biometric data like fingerprints and iris scans of all citizens in the country since September 2010. The goal is to provide unique identification that enables consumers to access government services and open bank accounts easily with a 12-digit Aadhaar number (loosely translated to "foundation").

As of January 2014:

- UIDAI had enrolled over 560 million citizens into the program.
- 58 million bank accounts had been linked to these numbers.
- One in six consumers were receiving cooking gas subsidies from the government via Aadhaar.
- UIDAI projected that more than 150 million accounts would be linked by the end of 2014.

If financial access growth outpaces that of internet access, those in India are likely to turn to their mobile phones by default, causing mobile banking usage to surge.

INDONESIA

Digital banking adoption in Indonesia provides a window into how emerging economies are eschewing financial services provided by traditional institutions in favor of more convenient and accessible options.

The World Economic Forum ranked Indonesia 50th in its global financial development study, with just one in five citizens having a formal bank account, according to 2011 figures from the World Bank. In recent years, many have turned to financial platforms offered by mobile operators in the country to meet their needs.

eMarketer estimates that just one-third of the country's more than 250 million citizens will be internet users by the end of 2014, and only 3.0% of households will have broadband connections. While projections vary, online banking is still catching on among internet users in Indonesia.

December 2013 data from the Asosiasi Penyelenggara Jasa Internet Indonesia (APJII) found that 47.3% of internet users in the country had conducted banking online, and Ipsos OTX data from March 2013 came to a similar result. An April 2014 estimate from comScore Media Metrix showed that just about 10% of internet users had used online banking, although it only measured usage over the course of one month.

Comparative Estimates: Online Banking Users in Indonesia, 2013 & 2014

% of each group

		Survey base	Usage	Survey date
APJII, Jan 2014	47.3%	Internet users	Used internet banking	Dec 2013
lpsos OTX, Nov 2013	44.0%	Internet users*	Used online banking in the past month	March 2013
comScore Media Metrix, June 2014		Internet users**	Used online banking in the past month	April 2014

Note: *ages 16-64; **ages 15+; home and work locations Source: various, as noted, 2013 & 2014

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Additionally, comScore Media Metrix found the highest number of online bankers in Indonesia to be within the 25-to-34-year-old age group. Just over 13% of the sample in each age group used online banking except for 15- to 24-year-olds, which brought down the average.

Online Banking Users in Indonesia, by Age, April 2014 thousands and % of internet users

	Online banking users	% of internet users
15-24	379	6.0%
25-34	501	13.1%
35-44	269	13.6%
45-54	145	13.1%
55+	51	13.5%
Total	1,345	9.9%

Note: home and work locations via desktop Source: comScore Media Metrix, June 6, 2014

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Some banks report strong uptake of online banking services by customers. State-owned Bank Tabungan Negara (BTN) reported that online transactions have been growing an average of over 40% each year for the past several years. BRI, another state-owned bank, reported that it was serving 1.38 million online banking users at the end of Q1 2014, up from 430,000 last year during the same period.

Mobile

Online banking is still ramping up in Indonesia. Meanwhile, mobile operators in the country have found success providing financial services to the country's burgeoning mobile phone users. eMarketer estimates that 71.0% of the population will use a mobile phone by the end of 2014.

According to GSMA, there are seven different mobile money services currently available in Indonesia—the most of any country in the region. They offer services such as peer-to-peer, bill and merchant payments. In fact, most estimates peg mobile banking usage in Indonesia to be on par or greater than that of online banking—unsuprising considering that mobile phone adoption in general is much greater than internet adoption.

Comparative Estimates: Mobile Banking Users in Indonesia, 2013

% of each group

		Survey base	Usage	Survey date
Bain & Company, Nov 2013	52 %	Online adults who are bank customers	Used mobile device to access banking app or website in the past quarter	Aug 2013
Ipsos OTX, Nov 2013	45%	Internet users*	Used mobile banking/financial app	June 2013
MasterCard Worldwide, Feb 2014	34%	Internet users**	Used mobile banking apps	Dec 2013

Note: *ages 16-64; **ages 18-64 Source: various, as noted, 2013 & 2014

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The most popular mobile money services come from the country's major MNOs, including Indosat, Telkomsel and XL Axiata. In May 2013, these three players announced interoperability among their individually developed mobile money services, enabling users to easily conduct transactions across networks.

MNOs are also forging partnerships with banks to further extend access, and as of October 2013, more than 8,000 ATMs in the country could support transactions with the various mobile money schemes. Traditional banks are also entering the space: Bank Mandiri and Bank BTPN launched their own mobile money initiatives within the past year.

More collaboration between banks and MNOs can be expected as the government and Bank Indonesia, the country's central bank, continue to pursue their financial inclusion strategy, which has recently been focused on "branchless" banking via mobile phones and even floating ATMs designed to serve more inhabitants of the country's 17,500 islands.

JAPAN

Japan is thought of as being an early digital technology adopter, but one area in which it lags many other developed countries is digital banking. Japan ranked seventh in the World Economic Forum study, although when it comes to customer experience, it does not perform nearly as well.

Japan ranked 28th out of 32 countries in the Capgemini banking experience index. The report stated that "the more staid banking industry has struggled to keep up with the increasingly digital lifestyle" of Japan's population; just 23.4% of respondents said they had a positive customer experience with banks in the country.

Compared to other countries with similarly high internet and broadband penetration rates, online banking adoption is relatively low in Japan, with some evidence that usage has actually declined over the past five years. For example, MyVoice's January 2013 survey found that about 70% of internet users in Japan were using digital banking, down from around 80% in January 2008.

Comparative Estimates: Online Banking Users in Japan, 2013

% of each group

Usage Survey date **Survey base** MyVoice, 69.7% Internet users Currently use digital Jan 2013 Feb 2013 banking Ipsos OTX, 44.0% Internet users* Used online banking March 2013 June 2013 in the past month

Note: *ages 16-64

Source: Ipsos OTX and Ipsos Global @dvisor, "Socialogue," June 18, 2013; MyVoice survey as cited in company blog, Feb 15, 2013

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In addition, a July 2013 study from IBOPE Media found that internet users in Japan spent around 21 minutes per month banking online—the lowest among the seven countries surveyed. By comparison, users in the US spent around 30 minutes per month doing the same activity, while UK users spent more than 45 minutes and users in Brazil spent well over an hour.

Mobile

Mobile banking adoption in Japan is also relatively low, especially for a country where more than half its population will become smartphone users by the end of 2014, and consumers have been using mobile payments since the first decade of the 21st century. Even Bain & Company's study, which specifically surveyed bank customers, found just around one in five used a mobile device for banking; studies of broader populations showed even lower adoption.

Comparative Estimates: Mobile Banking Users in Japan, 2013

% of each group

		Survey base	Usage	Survey date
Bain & Company, Nov 2013	22.0%	Online adults who are bank customers	Used mobile device to access banking app or website in the past quarter	Aug 2013
Ipsos OTX, Nov 2013	10.0%	Internet users*	Used mobile banking/ financial app	June 2013
MasterCard Worldwide, Feb 2014	8.6%	Internet users**	Used mobile banking apps	Dec 2013

Note: *ages 16-64; **ages 18-64 Source: various, as noted, 2013 & 2014

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Aside from a conservative banking industry, Japan's consumers may be avoiding digital banking due to security concerns. According to a January 2014 report from the country's National Police Agency, there were more than 1,300 cases of illegal online banking transactions in 2013, resulting in \$13.7 million in damages. A Q3 2013 report from security firm Trend Micro noted that Japan was the third most-affected country by malware targeted at online banking users, rising from the fifth-place spot it held just one quarter prior.

SOUTH KOREA

South Korea has a mature banking system with a large retail footprint that is being challenged by growing digital banking adoption among consumers. The World Economic Forum ranked South Korea 13th in its study, due to the country's strong retail access, including holding the top spot for ATM availability.

High internet and mobile phone penetration in South Korea lends itself well to digital banking adoption. Although there are clear trends of growing usage of online and mobile banking, current estimates vary.

The Korea Internet & Security Agency's (KISA's) July 2013 study found that 45.3% of internet users 12 and older had used online banking within the past year, up 2.1 percentage points from 2012. DMC Media found more substantial growth in its October 2013 study: 93.6% of respondents reported using digital banking in 2012, up from 74.4% the year prior.

Comparative Estimates: Online Banking Users in South Korea, 2013

% of each group

		Survey base	Usage	Survey date
DMC Media, Dec 2013	93.6%	Internet users*	Used digital banking	Oct 2013
Ipsos OTX, June 2013	68.0%	Internet users**	Used online banking in the past month	March 2013
KISA, Jan 2014	45.3%	Internet users***	Used internet banking in the past 12 months	July 2013

Note: *ages 19-59; **ages 16-64; ***ages 12+

Source: various, as noted, 2013 & 2014

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Mobile

With close to 70% of the population in South Korea expected to use smartphones by the end of 2014, it is no surprise that mobile banking is catching on.

KISA's study found that while the desktop is the dominant digital banking access device, smartphone usage among online banking users grew a considerable 36.2 percentage points between 2012 and 2013, while desktop usage declined 23.2 percentage points. DMC's research found a similar shift away from desktop access during that same time period.

Mobile banking usage estimates for South Korea range widely, largely due to different sample populations and survey methodologies. Based on current estimates from various research firms, it is likely that 30% to 45% of internet users in the country are mobile bankers.

Comparative Estimates: Mobile Banking Users in South Korea, 2013

% of each group

		Survey base	Usage	Survey date
Bain & Company, Nov 2013	56.0%	Online adults who are bank customers	Used mobile device to access banking app or website in the past quarter	Aug 2013
Ipsos OTX, Nov 2013	46.0%	Internet users*	Used mobile banking/ financial app	June 2013
MasterCard Worldwide, Feb 2014	36.4%	Internet users**	Used mobile banking apps	Dec 2013
KISA, Jan 2014	33.1%	Mobile internet users	Used mobile banking	June 2013
Deloitte, Nov 2013	28.0%	Mobile phone users	Used mobile device to perform online banking activities in the past 7 days	July 2013

Note: *ages 16-64; **ages 18-64 Source: various, as noted, 2013 & 2014

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Those who have adopted mobile banking in South Korea tend to skew younger and female, according DMC's research. The majority of users between ages 20 and 39 said they used a smartphone as their primary device for digital banking, as did 57.1% of females compared with 48.0% of males. Only slightly more in the 40-and-older category used a smartphone compared with a desktop computer, and none reported to use a tablet for digital banking.

Primary Device Used for Digital Banking According to Internet Users in South Korea, by Demographic, Oct 2013

% of respondents

	Smartphone	Desktop PC	Notebook/Netbook	Tablet PC
Gender				
Female	57.1%	28.6%	12.7%	0.8%
Male	48.0%	34.8%	16.1%	1.1%
Age				
20-29	63.9%	21.9%	12.3%	1.3%
30-39	52.0%	31.6%	13.8%	1.5%
40+	42.3%	41.1%	16.6%	0.0%
Total	52.4%	31.8%	14.5%	1.0%

Note: n=525 who conducted digital banking in the past year; numbers may not add up to 100% due to rounding Source: DMC Report, "2013 Digital Consumers Survey," Dec 1, 2013

CENTRAL AND EASTERN EUROPE

Within Central and Eastern Europe, Poland and Turkey continue to experience positive uptake of digital banking, while consumers in Russia face headwinds such as the contraction of bank account ownership and geopolitical entanglements that threaten to inhibit broader adoption.

Despite internet and mobile penetration that lags that of other EU members, banks in Poland have been effective at rolling out state-of-the-art online and mobile banking experiences, shifting existing customers to these channels and also leveraging them for new customer acquisition.

Turkey benefits from having a young, tech-savvy population that has been willing to readily adopt digital services from the country's financial institutions. While this scenario has helped push digital banking adoption, consumer expectations are high, and there are signs that firms are falling behind in meeting them.

Russia, meanwhile, has comparatively weak digital banking usage among consumers. Traditional banking channels like branches and ATMs are still heavily used, and the impending sanctions the country faces due to recent events in neighboring Ukraine could be detrimental to future growth.

POLAND

Poland lags behind many other EU countries in internet penetration and smartphone adoption, but digital banking has nevertheless shown strong growth in the country, with mobile banking gaining momentum.

The World Economic Forum ranked Poland 37th in its financial development study, while Capgemini ranked it 15th in its banking customer experience index. Four in 10 bank customers reported having a positive experience, down 3.8 percentage points from 2013's study—an indicator that these experiences are lagging behind customer expectations.

Over half of customer interactions with banks in Poland occur in digital channels, according to August 2013 research from Bain & Company. In the "Customor Loyalty in Retail Banking" study, about one-quarter of new bank accounts were opened online—higher than many other countries surveyed—and the top factor for choosing a new bank account after fees was online service.

Online banking usage growth in Poland has been faster than internet penetration growth over the past five years, according to research from Eurostat and eMarketer calculations. Internet penetration in Poland reached 63% of the population as of December 2013 and had a 3.0% compound annual growth rate (CAGR) from 2009. Online banking usage hit 51% of internet users as of Q2 2013 and grew at a 7.6% CAGR over the same period.

Other estimates peg online banking usage to be even higher among internet users. These differences are likely attributed to those surveys not including a timeframe when asking about use, whereas Eurostat specified use in the three months prior to its survey.

Comparative Estimates: Online Banking Users in Poland, 2013

% of each group

		Survey base	Usage	Survey date
Amárach Research, Dec 2013	85%	Internet users	Conducted banking transactions online	July 2013
lpsos OTX, June 2013	67 %	Internet users*	Used online banking in the past month	March 2013
Eurostat, Dec 2013	51 %	Internet users**	Used internet banking in the past 3 months	Q2 2013

Note: *ages 16-64; **ages 16-74 Source: various, as noted, 2013

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Mobile

Although 83% of the population in Poland owns a mobile phone, according to January 2013 data from Ipsos OTX and Ipsos Global @dvisor, smartphone use is still relatively low. March 2013 data from IAB Europe, TNS Infratest and Google found that just 35% were smartphone users, which is one factor why mobile banking is still catching on in the country.

Separate estimates from Bain & Company and Polish financial news website Money.pl came to similar conclusions that a little more than one-third of internet users are mobile bankers, while ING research from May 2014 projected that figure to be closer to half of internet users.

Comparative Estimates: Mobile Banking Users in Poland, 2013 & 2014

% of each group

		Survey base	Usage	Survey date
ING, May 2014	48%	Internet users	Used mobile banking	May 2014
Bain & Company, Nov 2013	38%	Online adults who are bank customers	Used mobile device to access banking app or website in the past quarter	Aug 2013
Money.pl, April 2014	35%	Internet users	Used mobile banking	April 2014

Source: various, as noted, 2013 & 2014

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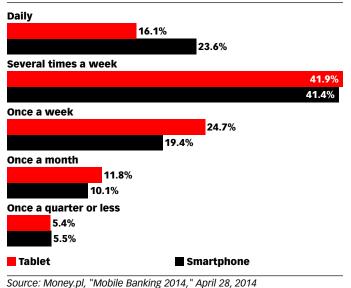
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In addition to low smartphone use, Money.pl's research found that of the 29 banks in Poland it tested, 19 had at least one dedicated smartphone application and just six had a dedicated tablet application. As a result, a growing contingent of mobile banking users were turning to banks' websites on their devices.

Similar to trends in other countries, smartphone banking was often conducted on a daily basis among mobile bankers in Poland, while tablet banking tended to be done on a weekly or monthly basis, the survey found.

Frequency with Which Internet Users in Poland Use Mobile Banking, by Device, April 2014 % of respondents



RUSSIA

Digital banking has been slow to catch on in Russia, in part due to limited internet and smartphone penetration, as well as contracting bank account ownership from eroding trust in banks among consumers. eMarketer estimates that 58.2% of Russia's more than 142 million citizens will be internet users by the end of 2014, and 37.6% will be smartphone users.

An April 2014 survey conducted by the Levada Center found that 37% of consumers in Russia had a bank account, down from 42% in September 2012. While 18% planned to open a bank account, respondents who did not plan to open an account stayed at 45%.

The World Economic Forum ranked Russia 39th in its survey on financial development. Capgemini ranked it 23rd in its index; just 32.2% of customers in the survey reported having a positive experience with banks in the country, although its rank improved from the 2013 study.

Just over 40% of customer interactions with banks in Russia were conducted in digital channels, Bain & Company's August 2013 survey found, with ATM interactions rivaling that of those done online. Furthermore, the availability of ATM locations was the top factor for customers choosing a new bank, which speaks to consumers' reliance on traditional channels.

Estimates of online banking usage in Russia are limited. An April 2014 study from Yandex found that 37.0% of internet users were using online banking for electronic payments. When asked more broadly about online banking in March 2013 polling from Ipsos OTX, 22.0% of internet users said they used it within the month prior to the survey.

Comparative Estimates: Online Banking Users in Russia, 2013 & 2014

% of each group

		Survey base	Usage	Survey date
Yandex, May 2014	37.0%	Internet users*	Used internet banking for electronic payments	April 2014
Ipsos OTX, June 2013	22.0%	Internet users**	Used online banking in the past month	March 2013

Note: *ages 12-55; **ages 16-64 Source: various, as noted, 2013 & 2014

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Mohile

Mobile banking usage estimates in Russia are equally limited, although they indicate that adoption is similar to online banking. eMarketer projects that by 2018, smartphone penetration in Russia will be close to parity with internet penetration, which could propel mobile banking use higher than online banking.

Comparative Estimates: Mobile Banking Users in Russia, 2012 & 2013

% of each group

		Survey base	Usage	Survey date
Bain & Company, Nov 2013	37%	Online adults who are bank customers	Used mobile device to access banking app or website in the past quarter	Aug 2013
Nielsen, Feb 2013	33%	Smartphone users	Used mobile banking	2012

Source: various, as noted, 2013

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Recent geopolitical tension with Ukraine, the EU and the US has also affected banking in Russia, particularly as it relates to the use of bank cards, which 58% of consumers use, according to the Levada Center survey.

In retaliation to financial sanctions imposed by the US following the annexation of Crimea that resulted in Visa and MasterCard stopping the processing of payments from four Russian banks, the country's government passed legislation to create its own national payments system and set new rules for foreign firms that included fines and steep deposit collateral requirements.

While the government subsequently backed down from some of its stricter rules and fines, MasterCard and Visa will still be required to keep all transaction data within the country's borders. As a result, the US-based credit card companies have to seek out domestic payment processors and will eventually have to compete with Russia's own yet-to-be-built payment system.

TURKEY

Digital banking in Turkey has experienced strong growth over the past few years, due to expanded internet and mobile access to a relatively young population. While internet penetration in Turkey is among the lowest in Europe (just below 50% of the population), those who use it are heavily engaged and more than two-thirds of users are 34 years old or younger, according to comScore data.

Turkey has a strong retail banking presence relative to the region, but broader financial instability in the country remains a concern, which is a main reason why the World Economic Forum ranked Turkey 42nd out of 62 countries in its study.

The most recent and comprehensive digital banking estimates come from an April 2014 report from the Banks Association of Turkey. It collected data from 27 institutions that provide online banking services to customers and found that 44.5% of internet users had banked online at least once in the past 12 months. Between March 2013 and March 2014, the number of online banking users in Turkey grew 19.2%.

The association also provided data for the timeframe in the past three months that was in line with Eurostat's Q2 2013 research. Per Eurostat and eMarketer's calculations, online banking usage in Turkey had a 15.6% CAGR from 2009 to 2013—the third-fastest increase in Europe.

Comparative Estimates: Online Banking Users in Turkey, 2013 & 2014

% of each group

		Survey base	Usage	Survey date
Ipsos OTX, June 2013	65.0%	Internet users*	Used online banking in the past month	March 2013
The Banks Association of Turkey, April 2014	44.5%	Internet users	Used online banking at least once in the past 12 months	March 2014
Eurostat, Dec 2013	25.0%	Internet users**	Used internet banking in the past 3 months	Q2 2013
Turkish Statistical Institute, Aug 2013		Internet users**	Used internet banking	April 2013

Note: *ages 16-64; **ages 16-74 Source: various, as noted, 2013 & 2014

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The Banks Association of Turkey also collected data from 16 banks that offer mobile banking services and found that 13.2% of internet users were mobile bankers. The number of mobile banking users more than doubled year over year, growing 142%.

Comparative Estimates: Mobile Banking Users in Turkey, 2014

% of each group

		Survey base	Usage	Survey date
ING, May 2014	56.0%	Internet users	Used mobile banking	May 2014
The Banks Association of Turkey, April 2014	13.2%	Internet users	Used mobile banking at least once in the past 12 months	March 2014

Source: various, as noted, 2014

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Turkey's banks have not shied away from leveraging digital technology to serve users in new ways and attract the country's young citizens. In November 2013, the Turkish Economy Bank (TEB) developed a Google Glass application designed to help customers find ATMs and branches.

Yapi Kredi Bank, one of the largest banks in the country, announced a completely digital banking product in June 2014 designed to remove the need to visit a branch and includes mobile commerce capabilities.

Even with these innovative offerings, Turkey ranked 31st of 32 countries studied in Capgemini's customer experience index. The consultancy noted that positive customer experiences declined 27.8% from its 2013 study, which it attributed to high expectations from the country's young, tech-savvy population not being met.

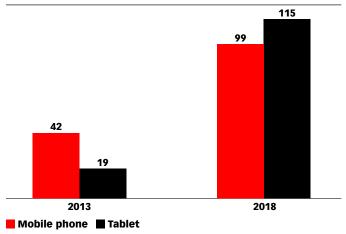
WESTERN EUROPE

Western Europe boasts strong internet and mobile penetration. With most countries finally recovering from the global financial crisis, banks are more comfortable making investments in their digital experiences to catch up with customer expectations.

According to Forrester Research estimates, there were 42 million mobile phone banking users and 19 million tablet banking users in Europe—defined as France, Germany, Italy, Netherlands, Spain, Sweden and the UK—in 2013. Forrester projects that by 2018, the number of tablet banking users will exceed those using their mobile phone as an access point.

Mobile Phone and Tablet Banking Users in Europe, 2013 & 2018

millions



Note: includes France, Germany, Italy, Netherlands, Spain, Sweden and UK Source: Forrester Research as cited in press release, May 15, 2014

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eMarketer believes there will be more smartphone users than tablet users in Europe by 2018. Nevertheless, it is likely that as time spent on desktops and laptops shifts to tablets over the next five years, Forrester's estimates could come to bear.

Within Western Europe, eMarketer's analysis found that digital banking use was particularly robust in France, the Netherlands, Spain and the UK. In Germany, persistent concerns around security and privacy have hampered stronger adoption, while Italy is challenged with an unstable banking sector and low internet and mobile penetration relative to the region.

FRANCE

Outside of the Nordics region, France has among the highest levels of digital banking adoption in Western Europe. The country benefits from strong internet and mobile penetration, as well as being home to the third- and fourth-largest banks in the world—Crédit Agricole and BNP Paribas, respectively—according to January 2014 data from SNL Financial. The World Economic Forum ranked France 14th out of 62 countries in its 2012 study on the development of global financial systems and capital markets.

Banks in France have been proactive in adopting new digital technologies and channels to meet the changing needs of consumers. Despite that, it ranked 22nd of 32 countries in the Cappemini study. Just one-third of customers in France reported having a positive experience with their bank.

Most recent estimates find 60% to 70% of internet users in France use online banking. According to Eurostat, online banking usage in France had a 3.5% CAGR from 2009 to 2013.

Additionally, July 2013 research from IBOPE Media found internet users in France spent over 36 minutes per month banking online—6 minutes more than those in the US but 10 and 11 minutes fewer than in the UK and Germany, respectively.

Comparative Estimates: Online Banking Users in France, 2013 & 2014

% of each group

		Survey base	Usage	Survey date
Elia Consulting, Sep 2013	82.0%	Internet users	Check bank accounts or utilities online very often/often	May 2013
Eurostat, Dec 2013	70.0%	Internet users*	Used internet banking in the past 3 months	Q2 2013
Médiamétrie, March 2014	69.7%	Internet users	Used online banking	Q4 2013
BT, April 2014	63.0%	Internet users	Used internet banking in the past 12 months	Feb 2014
Ipsos OTX, June 2013	52.0%	Internet users**	Used online banking in the past month	March 2013

Note: *ages 16-74; **ages 16-64 Source: various, as noted, 2013 & 2014

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Mohile

Mobile banking is starting to pick up momentum in France, especially as mobile internet penetration reaches close to 50% of the population. Most estimates show that around 20% to 30% of internet users in the country are mobile bankers; estimates that were more conservative specified recent or frequent usage.

Comparative Estimates: Mobile Banking Users in France, 2013 & 2014

% of each group

		Survey base	Usage	Survey date
Bain & Company, Nov 2013	37.0%	Online adults who are bank customers	Used mobile device to access banking app or website in the past quarter	Aug 2013
Ipsos OTX, Nov 2013	25.0%	Internet users*	Used mobile banking/ financial app	June 2013
ING, May 2014	22.0%	Internet users	Used mobile banking	May 2014
BT, April 2014	21.0%	Internet users	Use mobile banking once per week or more	Feb 2014
Deloitte, Nov 2013	21.0%	Mobile phone users	Used mobile device to perform online banking activities in the past 7 days	July 2013
Médiamétrie, March 2014	17.8%	Internet users	Used mobile phone for banking in the past month	Q4 2013

Note: *ages 16-64

Source: various, as noted, 2013 & 2014

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May 2014 research from ING found mobile banking adoption in France highest among 18- to 24-year-olds, with 42.7% of this cohort reporting use. By comparison, 38.0% of 25- to 34-year-olds were mobile bankers, as were slightly more than one-quarter of the 35-to-44 age group. Usage frequency tended to be on a daily basis among younger users, while older users conducted mobile banking on a weekly or even monthly basis.

Mobile Banking Usage Among Internet Users in France, by Frequency and Demographic, March 2014

% of respondents in each group

1 Several times a day

5 Several times a year

2 Daily

6 Less often

3 Several times a week

7 Don't use

4 Several times a month

	1	2	3	4	5	6	7
Gender							
Male	4.9%	6.4%	6.4%	5.1%	2.6%	1.1%	73.6%
Female	1.7%	4.2%	5.2%	4.6%	1.1%	0.5%	82.6%
Age							
18-24	9.6%	10.8%	10.7%	7.6%	3.2%	0.8%	57.3%
25-34	8.0%	10.0%	8.3%	8.0%	2.2%	1.5%	62.0%
35-44	1.8%	6.7%	9.7%	5.7%	1.6%	0.6%	73.9%
45-54	2.3%	4.3%	2.8%	4.4%	2.8%	1.2%	82.3%
55+	0.2%	1.0%	2.5%	2.3%	0.8%	0.5%	92.6%
Total	3.3%	5.3%	5.8%	4.8%	1.8%	0.8%	78.2%

Note: n=1,006 ages 18+; numbers may not add up to 100% due to rounding Source: ING, "Financial Empowerment in the Digital Age 2014" conducted by Ipsos, May 29, 2014

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In addition, a May 2013 study from Infosys found that internet users in France were more willing to receive account and transaction alerts on their mobile phone from their bank, compared with those in the UK and Germany. About seven in 10 wanted mobile alerts from their bank, compared with six in 10 from the UK and just four in 10 from Germany. This level of interest in mobile interactions, combined with existing adoption among younger consumers, bodes well for future mobile banking adoption in France.

Internet Users in France Who Want to Receive Communications from Their Bank/Financial Provider via Mobile Device, by Demographic, May 2013 % of respondents in each group

	Agree strongly	Agree somewhat	Disagree somewhat	Disagree strongly
Gender				
Male	25%	48%	20%	7%
Female	21%	44%	22%	12%
Age				
18-29	25%	44%	23%	7%
30-49	22%	49%	21%	9%
50-69	23%	42%	21%	14%
Total	23%	46%	21%	10%

Note: n=1,000; numbers may not add up to 100% due to rounding Source: Infosys, "Engaging with Digital Consumers: They're Ready, Are You?" conducted by KRC Research and Vanson Bourne, June 25, 2013

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GERMANY

Germany has internet and mobile penetration levels similar to other countries in Western Europe, but digital banking has been slow to catch on among consumers. Sensitivities among the population around data security and privacy are primarily to blame.

As might be expected from the home of the European Central Bank (ECB), Germany has a mature banking system in place. The World Economic Forum ranked Germany 11th in its study.

Estimates from Eurostat and Ipsos OTX found that between 50% and 60% of internet users in Germany bank online. Creditreform Boniversum's April 2013 high estimate of 93.5% is likely attributed to its lack of usage scope and survey design approach.

Comparative Estimates: Online Banking Users in Germany, 2013

% of each group

		Survey base	Usage	Survey date
Creditreform Boniversum, June 2013	93.5%	Internet users*	Used online banking	April 2013
Eurostat, Dec 2013	56.0%	Internet users**	Used internet banking in the past 3 months	Q2 2013
Ipsos OTX, June 2013	51.0%	Internet users***	Used online banking in the past month	March 2013

Note: *ages 18-69; **ages 16-74; ***ages 16-64

Source: various, as noted, 2013

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According to Eurostat, growth in online banking usage in Germany has been modest with a 1.4% CAGR from 2009 to 2013. Bank customers are more or less satisfied with their experience at banks in Germany, as well; more than two in five reported having a positive experience in Cappemini's 2014 survey, which helped the country rank 10th in its customer experience index.

This lends itself to heavy use among current users. July 2013 research from IBOPE Media found that internet users in Germany spent over 47 minutes per month banking online—the second most amount of time among the seven countries surveyed.

Mohile

Mobile banking in Germany is still catching on, and adoption estimates vary by as much as 23 percentage points. Based on these estimates, it is likely that 20% to 30% of internet users are mobile bankers.

Comparative Estimates: Mobile Banking Users in Germany, 2013 & 2014

% of each group

		Survey base	Usage	Survey date
Bain & Company, Nov 2013	35%	Online adults who are bank customers	Used mobile device to access banking app or website in the past quarter	Aug 2013
ING, May 2014	34%	Internet users	Used mobile banking	May 2014
Deloitte, Nov 2013	15%	Mobile phone users	Used mobile device to perform online banking activities in the past 7 days	July 2013
Ipsos OTX, Nov 2013	12%	Internet users*	Used mobile banking/ financial app	June 2013

Note: *ages 16-64

Source: various, as noted, 2013 & 2014

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One of the key reasons why more people in Germany have not adopted digital banking as readily as other countries in Western Europe is concerns around digital security and privacy. Residents are especially sensitive about sharing personal and financial information via digital channels.

In May 2013 research from Infosys, 56% of internet users in Germany said they were comfortable sharing personal information with their bank online—6 and 22 percentage points fewer than respondents in France and the UK, respectively. Even fewer were willing to share the same info via a mobile device; just 40% of respondents were comfortable doing this, compared with 52% from France and 56% from the UK.

Situations in Which Internet Users in Germany Are Comfortable Sharing Personal Information* with Their Bank, by Demographic, May 2013

% of respondents in each group

,								
	Ge	nder	Age			Total		
	Male	Female	18-29	30-49	50-69			
When interacting with your bank in person	77%	74%	81%	74%	70%	75%		
When interacting with your bank online	60%	52%	56%	57%	55%	56%		
When interacting with your bank via a mobile device (such as a smartphone or tablet)	44%	36%	40%	44%	31%	40%		

Note: "somewhat" or "very comfortable"; *e.g., account number, address or phone number

Source: Infosys, "Engaging with Digital Consumers: They're Ready, Are You?" conducted by KRC Research and Vanson Bourne, June 25, 2014

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By the same token, a lack of security was overwhelmingly cited as the top reason why respondents from Germany reported not using mobile banking, according to May 2013 research from ING.

A more recent ING study from May 2014 found that among mobile bankers in Germany, 25- to 34-year-olds had the highest adoption—almost 60% of the cohort reported use—and were the most frequent users; 10.7% of respondents said they used mobile banking several times a day.

Even 18- to 24-year-olds—who are less likely to have a bank account—used mobile banking at about the same level as the 35-to-44 group (36.9% vs. 37.2%, respectively), highlighting the digital savviness of younger consumers in Germany.

Mobile Banking Usage Among Internet Users in Germany, by Frequency and Demographic, March 2014

% of respondents in each group

1 Several times a day

2 Daily

5 Several times a year

3 Several times a week

6 Less often 7 Don't use

4 Several times a month

	1	2	3	4	5	6	7
Gender							
Male	5.4%	6.8%	15.0%	9.8%	1.7%	1.1%	60.1%
Female	2.2%	3.8%	10.5%	8.9%	2.0%	0.5%	72.1%
Age							
18-24	5.7%	3.1%	11.0%	11.0%	4.9%	1.2%	63.1%
25-34	10.7%	9.8%	21.1%	13.1%	4.8%	-	40.5%
35-44	4.0%	9.2%	13.0%	9.9%	0.6%	0.5%	62.9%
45-54	1.8%	4.2%	13.9%	10.0%	1.7%	2.4%	65.9%
55+	1.0%	2.2%	8.7%	6.8%	0.5%	0.5%	80.4%
Total	3.7%	5.2%	12.6%	9.4%	1.9%	0.8%	66.3%

Note: n=1,010 ages 18+; numbers may not add up to 100% due to rounding Source: ING, "Financial Empowerment in the Digital Age 2014" conducted by Ipsos, May 29, 2014

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ITAIY

Italy has been challenged by a troubled economy and banking sector since the global financial crisis in 2008, which, along with relatively low internet and smartphone penetration, has stifled digital banking adoption in the country. eMarketer estimates that just 58.0% of the country's 61.7 million citizens will be internet users by the end of 2014, and it will have the lowest mobile internet penetration among countries in Western Europe through 2018.

The World Economic Forum ranked Italy 30th in its study in part due to instability from the financial crisis, as well as low financial access relative to other countries in Western Europe.

Additionally, the country ranked 24th in Capgemini's index. The consultancy also attributed the low score to the continued challenges faced in the economy and banking sector.

Several estimates peg online banking usage in Italy at around 35% to 40% of internet users. According to Eurostat, online banking usage in Italy grew at a 2.1% CAGR from 2009 to 2013, with flat growth between 2012 and 2013.

Comparative Estimates: Online Banking Users in Italy, 2013 & 2014

% of each group

		Survey base	Usage	Survey base
Ipsos OTX, June 2013	40.0%	Internet users*	Used online banking in the past month	March 2013
Eurostat, Dec 2013	37.0%	Internet users**	Used internet banking in the past 3 months	Q2 2013
comScore Inc., June 2014	36.5%	Internet users	Used online banking	April 2014

Note: *ages 16-64; **16-74

Source: various, as noted, 2013 & 2014

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Mohile

According to July 2013 research from IBOPE Media, internet users in Italy spent over 36 minutes per month banking online—the same as users in France. April 2014 data from comScore MMX found that websites UniCredit Group and Intesa Sanpaolo generated the lion's share of unique visitors from Italy, while a mix of domestic and foreign banks rounded out the top 10 for that month.

Top 10 Banking and Financial Institution Sites Among Internet Users in Italy, Ranked by Unique Visitors, **April 2014**

thousands

1. UniCredit Group	3,437
2. Intesa Sanpaolo	3,196
3. Gruppo MPS	914
4. The Royal Bank of Scotland	880
5. UBI Banca Group	868
6. BNP Paribas	747
7. Gruppo CartaSi	638
8. ING Group	610
9. Banco Popolare	580
10. Sella.it	550

Note: ages 15+; home and work locations Source: comScore MMX, June 5, 2014

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Mobile banking usage estimates for Italy run the gamut, from very small to on par with some online banking estimates. The latter scenario is within the realm of possibility, as overall mobile phone user penetration outpaces internet penetration.

However, May 2013 research from ING found that the top reason respondents did not use mobile banking was due to lack of having a smartphone or tablet, indicating that broader use will be dependent on increased adoption of more advanced mobile devices.

Comparative Estimates: Mobile Banking Users in Italy, 2013 & 2014

% of each group

		Survey base	Usage	Survey date
ING, May 2014	37.0%	Internet users	Used mobile banking	May 2014
Bain & Company, Nov 2013	36.0%	Online adults who are bank customers	Used mobile device to access banking app or website in the past quarter	Aug 2013
comScore Inc., May 2014	21.4%	Smartphone users	Accessed bank accounts on smartphone	Nov 2013
lpsos OTX, Nov 2013	11.0%	Internet users*	Used mobile banking/ financial app	June 2013

Note: *ages 16-64

Source: various, as noted, 2013 & 2014

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A subsequent March 2014 ING study also provides some demographic details on mobile bankers in Italy. Almost half of 35- to 44-year-olds were mobile banking users the group with the highest adoption level. Following close behind were 25- to 34-year-olds, of which 47.1% reported to be mobile bankers. Usage frequency across the entire survey population clustered around several times a week, with the youngest cohorts reporting use at least once per day.

Mobile Banking Usage Among Internet Users in Italy, by Frequency and Demographic, March 2014 % of respondents in each group

- 1 Several times a day
- 5 Several times a vear

2 Daily

- 6 Less often
- 3 Several times a week
- 7 Don't use
- 4 Several times a month

	1	2	3	4	5	6	7
Gender							
Male	5.5%	5.7%	11.9%	9.3%	3.6%	3.8%	60.1%
Female	3.0%	2.9%	10.3%	10.4%	2.6%	5.1%	65.7%
Age							
18-24	6.0%	4.2%	13.2%	9.1%	2.5%	5.0%	60.0%
25-34	8.7%	2.5%	14.5%	12.1%	4.8%	4.5%	52.8%
35-44	3.2%	8.0%	13.4%	15.4%	4.3%	4.9%	50.7%
45-54	3.9%	3.2%	13.2%	7.3%	2.1%	5.7%	64.6%
55+	2.3%	3.7%	6.7%	7.1%	2.2%	3.5%	74.5%
Total	4.2%	4.3%	11.1%	9.9%	3.1%	4.4%	63.0%

Note: n=970 ages 18+; numbers may not add up to 100% due to rounding Source: ING, "Financial Empowerment in the Digital Age 2014" conducted by Ipsos, May 29, 2014

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Despite challenges stemming from the global financial crisis in 2008, digital banking has grown in Spain, with several banks trying to experiment and innovate to more effectively reach a young, tech-savvy population. Four in 10 internet users in Spain are younger than 35, according to March 2014 data from Spain's Asociación para la Investigación de Medios de Comunicación (AIMC). The World Economic Forum ranked Spain 19th in its study.

Online banking usage estimates for Spain vary widely although tend to cluster around 50% to 60% of internet users. According to Eurostat, online banking usage in Spain had a 4.2% CAGR from 2009 to 2013.

Comparative Estimates: Online Banking Users in Spain, 2013 & 2014

% of each group

		Survey base	Usage	Survey date
The Logic Group, March 2014	73.0%	Internet users*	Used internet to check bank account information	Feb 2014
BT, April 2014	63.0%	Internet users	Used internet banking in the past 12 months	Feb 2014
Ipsos OTX, June 2013	54.0%	Internet users**	Used online banking in the past month	March 2013
Eurostat, Dec 2013	46.0%	Internet users***	Used internet banking in the past 3 months	Q2 2013
ONTSI, April 2014	37.2%	Internet users	Used online banking	Q3 2013
AIMC, July 2013	23.7%	Internet users	Used online banking in the past month	May 2013

Note: *ages 18-65; **ages 16-74; ***ages 16-64 Source: various, as noted, 2013 & 2014

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The use of digital channels to interact with banks in Spain has increased substantially over the past few years, according to February 2014 research from telco provider BT (British Telecom) and communications technology company Avaya. The use of smartphone apps grew 24 percentage points between 2012 and 2014, while internet banking rose 11 percentage points. Even the use of Facebook as a channel increased 9 percentage points during the same period, as more banks launched servicing channels and even direct online banking integrations with the social network.

Channels Used by Internet Users in Spain to Communicate with Banks, 2012 & 2014

% of respondents

	2012	2014
ATM/cash machine	88%	90%
Face-to-face in branch	77%	83%
Internet site/internet banking	52%	63%
Phone call to branch	50%	56%
Email	37%	47%
Self-service machine to deposit a check or cash	33%	47%
Phone call to a call center	26%	46%
FAQs on internet site	9%	36%
Smartphone apps	10%	34%
Smartphone web browser	8%	28%
Secure message via bank's website	7%	20%
Facebook	10%	19%
Write a letter/send forms	7%	19%
Send text/SMS message	9%	18%
Twitter	3%	11%
Web chat conversation	4%	10%
Google+ or another social networking site	2%	10%
Phone call to a call center in another country	5%	9%
Phone call to an automated or IVR phone service	8%	8%
Online forum run by customers on the internet	3%	6%
Natarin the most 40 months		

Note: in the past 12 months

Source: BT (British Telecom) and Avaya, "Youbiquity Finance 2014," April 17, 2014

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Mohile

By some estimates, mobile banking is becoming as widely used as online banking in Spain. As smartphone penetration gets closer to parity with internet penetration through 2018, this scenario becomes more likely.

Most current estimates of mobile bankers cluster around 30% of internet users. When it comes to frequent usage of once per week or more, Spain ranked higher than countries like France and the UK, according to BT and Avaya.

Comparative Estimates: Mobile Banking Users in Spain, 2013 & 2014

% of each group

		Survey base	Usage	Survey date
Bain & Company, Nov 2013	49%	Online adults who are bank customers	Used mobile device to access banking app or website in the past quarter	Aug 2013
ING, May 2014	48%	Internet users	Used mobile banking	May 2014
Ipsos OTX, Nov 2013	29%	Internet users*	Used mobile banking/ financial app	June 2013
BT, April 2014	28%	Internet users	Use mobile banking once per week or more	Feb 2014
Deloitte, Nov 2013	24%	Mobile phone users	Used mobile device to perform online banking activities in the past 7 days	July 2013

Note: *ages 16-64

Source: various, as noted, 2013 & 2014

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Spain has the broadest demographic mix of mobile bankers in Western Europe, according to March 2014 research from ING. Adoption was highest among 25- to 34-year-olds (63.2%) and 35- to 44-year-olds (56.3%), although more than one-third of respondents 55 and older also used mobile banking. Additionally, the country had high concentrations of daily and weekly users compared with other Western European countries studied.

Mobile Banking Usage Among Internet Users in Spain, by Frequency and Demographic, March 2014

% of respondents in each group

- 1 Several times a day
- **5** Several times a year

2 Daily

- 6 Less often
- 3 Several times a week
- 7 Don't use
- 4 Several times a month

	1	2	3	4	5	6	7
Gender							
Male	3.6%	10.2%	15.8%	13.1%	3.2%	1.8%	52.3%
Female	4.5%	8.3%	16.8%	12.4%	2.3%	4.2%	51.6%
Age							
18-24	6.0%	1.2%	20.0%	9.5%	6.2%	5.4%	51.8%
25-34	7.9%	14.3%	19.3%	16.7%	1.7%	3.3%	36.7%
35-44	3.9%	11.8%	20.1%	13.7%	3.9%	2.9%	43.7%
45-54	4.0%	10.1%	13.0%	8.1%	2.9%	2.8%	59.1%
55+	1.1%	6.4%	12.6%	13.0%	1.4%	2.3%	63.3%
Total	4.1%	9.2%	16.3%	12.8%	2.7%	3.0%	52.0%

Note: n=997 ages 18+; numbers may not add up to 100% due to rounding Source: ING, "Financial Empowerment in the Digital Age 2014" conducted by Ipsos, May 29, 2014

There are hints that as digital banking adoption grows, Spain's banks are having trouble meeting the evolving customer expectations that digital brings. Spain ranked 26th in Capgemini's index. It registered the lowest level of positive customer experiences among banks in Western Europe, with just 28.5% of bank customers surveyed saying so.

NETHERLANDS

Digital banking use is widespread in the Netherlands. The country has among the highest internet penetration in Western Europe, and many banks have long offered a variety of online and mobile services for customers.

The World Economic Forum ranked the Netherlands ninth in its study, with a large banking system and the highest debit card penetration of all countries included in its research.

The Netherlands ranked seventh in Capgemini's index. The country improved its rankings considerably from the 2013 study, increasing positive customer experiences by 3.6 percentage points and improving its overall index ranking from 23rd to 10th place. The consultancy attributed the increase to banks refocusing on their domestic business after shedding some foreign operations.

Despite strong use of online banking in the Netherlands, estimates are hard to come by. Eurostat's data showed that 87% of internet users were online bankers as of Q2 2013. According to Eurostat, 82% of internet users were already online bankers in 2009, resulting in a modest 1.5% CAGR through 2013.

Ruigrok NetPanel polling from June 2013 specified online banking use with laptops, which helps explain why its estimate came in lower. Its finding of 64% was up 12 percentage points from a prior 2012 survey.

Comparative Estimates: Online Banking Users in the Netherlands, 2013

% of each group

0 ,				
		Survey base	Usage	Survey base
Eurostat, Dec 2013	87%	Internet users*	Used internet banking in the past 3 months	Q2 2013
Ruigrok NetPanel, 6 Sep 2013	64%	Internet users	Used a laptop for digital banking	June 2013

Note: *ages 16-74

Note: ages 10-74 Source: Eurostat, "ICT Usage in Households and by Individuals 2013," Dec 18, 2013; Ruigrok NetPanel, "What's Happening Online? 2013," Sep 4, 2013

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Mohile

While online banking adoption has more or less plateaued in the Netherlands, mobile banking is gaining momentum, as two-thirds of the population will be mobile phone internet users by 2015.

Recent estimates of mobile banking usage vary by as much as 23 percentage points, although there is a clear trend of uptake based on historical information. For instance, ING found that usage increased by 6 percentage points over its 2013 survey; it also stated that the Netherlands was the "most developed" mobile banking market due to high usage combined with strong mobile internet penetration. (Note that ING is headquartered in the Netherlands.)

Comparative Estimates: Mobile Banking Users in the Netherlands, 2013 & 2014

% of each group

		Survey base	Usage	Survey date
ING, May 2014	50%	Internet users	Used mobile banking	May 2014
Ruigrok NetPanel, Sep 2013	44%	Smartphone internet users	Used mobile internet for banking	June 2013
Deloitte, Nov 2013	28%	Mobile phone users	Used mobile device to perform online banking activities in the past 7 days	July 2013
Bain & Company, Nov 2013	27%	Online adults who are bank customers	Used mobile device to access mobile banking app or website in the past quarter	Aug 2013

Source: various, as noted, 2013 & 2014

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Deloitte's July 2013 research found that mobile banking on a smartphone had the highest usage level among 18- to 24-year-olds, as 57% in this group reported use in the seven days prior to the survey, compared with 49% of 25-to-34-year-old respondents and 40% of those 35 to 44.

Mobile Financial Activities Performed on Smartphones vs. Tablets by Mobile Device Users in the Netherlands, by Age, July 2013

% of respondents in each group

	18-24	25-34	35-44	45-54	55+
Smartphones					
Mobile banking	57%	49%	40%	34%	28%
Sending and receiving money	21%	23%	19%	13%	13%
Mobile payments	9%	17%	11%	7%	10%
Tablets					
Mobile banking	28%	29%	28%	28%	24%
Sending and receiving money	13%	17%	20%	19%	11%
Mobile payments	14%	15%	12%	13%	7%

Note: in the past 7 days

Source: Deloitte, "Global Mobile Consumer Survey 2013: Addicted to Connectivity: the Dutch Mobile Consumer Perspective," Nov 20, 2013

Mobile phones are the primary mobile banking access point for consumers in the Netherlands, but tablet banking is also becoming more popular. Ruigrok NetPanel's research found that 33% of respondents had used tablets for banking last year, while Deloitte's study found that 27% of tablet owners used their tablet to perform banking functions. As shown in the above chart, tablet banking use was less dependent on age when compared with smartphone banking.

UNITED KINGDOM

The UK is one of the most advanced countries in Western Europe—and the world—when it comes to the availability of digital banking services and overall consumer adoption. Strong internet and mobile penetration, along with a stable banking market that has opened up to broader experimentation, have helped drive adoption.

The UK scores high marks in terms of financial stability and overall customer experience. The World Economic Forum ranked the UK third in its study, and Capgemini ranked it sixth in its retail banking index, with the highest rating for positive customer experiences among countries in Western Europe.

There are several online banking usage estimates for the UK, most of which cluster around 60% to 70% of internet users. According to Eurostat, online banking usage in the UK had a 2.2% CAGR from 2009 to 2013.

Comparative Estimates: UK Online Banking Users, 2013 & 2014

% of each group

		Survey base	Usage	Survey date
Ipsos OTX, June 2013	73%	Internet users*	Used online banking in the past month	March 2013
BT, April 2014	68%	Internet users	Used internet banking in the past 12 months	Feb 2014
Ofcom, April 2014	61%	Internet users	Used online banking and paid bills online	Nov 2013
Oxford Internet Institute-Oxford University, Oct 20		Internet users	Used online bank services	April 2013
Eurostat, Dec 2013	60%	Internet users**	Used internet banking in the past 3 months	Q2 2013
Deloitte, March 2013	60%	Internet users***	Check bank account and other financial holdings online daily or weekly	Jan 2013
ONS, Aug 2013	50%	Internet users	Used internet banking	March 2013

Note: *ages 16-64; **ages 16-74; ***ages 16-75 Source: various, as noted, 2013 & 2014

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Relative to other digital activities, online banking is used more than downloading or streaming TV, but slightly less than visiting social networks, forums or blogs, according to July 2013 research from Ipsos MediaCT. IBOPE Media found that internet users in the UK spent over 46 minutes per month banking online—the third-most of the select countries surveyed.

In March 2013 research from the Office for National Statistics (ONS) – UK, online banking was the most popular among 25-to-34-year-old internet users. Three-quarters in this cohort reported using online banking, followed by 62% of 35- to 44-year-olds. Additionally, a greater proportion (55%) of 16- to 24-yearolds used online banking than any age group 45 or older, underscoring the digital predilections of younger consumers in the UK.

Mohile

Mobile banking is also gaining popularity among all UK consumers. Although estimates range as much as 20 percentage points, this is largely attributable to differences in each survey's usage scope. Most estimates cluster around 25% to 35% of internet users being mobile bankers. Mobile banking usage increased 3 percentage points from 2013 to 2014, according to ING's research.

Comparative Estimates: UK Mobile Banking Users, 2013 & 2014

% of each group

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		Survey base	Usage	Survey date
ING, May 2014	38%	Internet users	Used mobile banking	May 2014
Bain & Company, Nov 2013	33%	Online adults who are bank customers	Used mobile device to access banking app or website in the past quarter	Aug 2013
Ipsos OTX, Nov 2013	29 %	Internet users*	Used mobile banking/ financial app	June 2013
Ipsos MediaCT, Jan 2014	26 %	Smartphone owners	Used online banking on a smartphone	Nov 2013
Deloitte, Nov 2013	20%	Mobile phone users	Used mobile device to perform online banking activities in the past 7 days	July 2013
BT, April 2014	18%	Internet users	Use mobile banking once per week or more	Feb 2014

Note: *ages 16-64

Source: various, as noted, 2013 & 2014

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Consumers in the UK are open to both sharing and receiving banking-related information, according to May 2013 Infosys research. UK respondents said they were the most comfortable sharing their personal information with their bank via digital channels when compared with consumers in France and Germany, while six in 10 UK consumers expressed wanting their bank to deliver account and transaction info via mobile alerts.

UK Internet Users Who Want to Receive Communications from Their Bank/Financial Provider via Mobile Device, by Demographic, May 2013

% of respondents in each group

	Agree strongly	Agree somewhat	Disagree somewhat	Disagree strongly
Gender				
Male	21%	45%	20%	14%
Female	14%	40%	30%	17%
Age				
18-29	22%	51%	20%	6%
30-49	19%	45%	24%	13%
50-69	10%	32%	30%	28%
Total	17%	43%	25%	16%

Note: n=1,000; numbers may not add up to 100% due to rounding Source: Infosys, "Engaging with Digital Consumers: They're Ready, Are You?" conducted by KRC Research and Vanson Bourne, June 25, 2013

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ING found that the UK had among the youngest mobile banking populations in Western Europe, with more than half of 18- to 24-year-olds and close to two-thirds of those 25 to 34 indicating usage. Respondents across all demographic groups were monthly users at a minimum, with most engaging with mobile banking on a weekly or daily basis.

Mobile Banking Usage Among UK Internet Users, by Frequency and Demographic, March 2014

% of respondents in each group

- 1 Several times a day
- 2 Daily

- 5 Several times a year
- 6 Less often
- 3 Several times a week
- 7 Don't use
- 4 Several times a month

	1	2	3	4	5	6	7
Gender							
Male	5.1%	8.8%	13.0%	11.4%	1.4%	0.8%	59.5%
Female	3.6%	8.5%	14.6%	7.4%	1.3%	0.2%	64.4%
Age							
18-24	6.8%	8.6%	22.7%	13.6%	2.8%	0.9%	44.5%
25-34	9.0%	9.7%	28.0%	14.8%	2.9%	0.7%	34.9%
35-44	7.2%	12.6%	13.2%	9.9%	0.5%	-	56.6%
45-54	0.6%	7.6%	10.7%	8.5%	1.9%	0.6%	70.2%
55+	1.3%	6.3%	5.7%	5.2%	0.3%	0.5%	80.7%
Total	4.3%	8.6%	13.8%	9.3%	1.3%	0.5%	62.1%
Total	4.3%	8.6%	13.8%	9.3%	1.3%	0.5%	62.

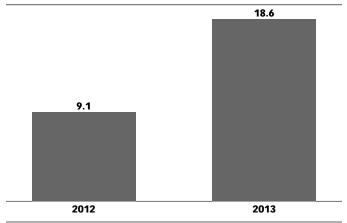
Note: n=990 ages 18+; numbers may not add up to 100% due to rounding Source: ING, "Financial Empowerment in the Digital Age 2014" conducted by Ipsos, May 29, 2014

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As mobile banking becomes a more prevalent activity among UK consumers, habits are shifting. For example, data from the British Bankers' Association (BBA) showed that average weekly banking transactions performed via mobile phone apps more than doubled between 2012 and 2013, from 9.1 million to 18.6 million.

UK Average Weekly Banking Transactions via Mobile Phone App, 2012 & 2013

millions



Note: based on metrics from Barclays, HSBC, RBS, Lloyds Banking Group and Santander except in 2012, which represents four out of the five banks Source: BBA (British Bankers' Association), "The Way We Bank Now: Banking on the move," March 31, 2014

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As mobile internet penetration in the UK approaches two-thirds of the population by the end of 2017, mobile banking adoption growth shows no signs of letting up.

NORDICS

Though technically part of Western Europe, the Nordic region is worth highlighting separately when it comes to digital banking due to its historically high usage compared with the rest of the region.

Internet and mobile uptake is high in the Nordic region, with Norway, Denmark and Sweden leading all of Western Europe in terms of mobile phone internet user penetration. Finland is not far behind; it will cross the threshold of having more than half of its population as mobile internet users by the end of 2014.

Mobile Phone Internet User Penetration in Western Europe, by Country, 2012-2018

% of population

	2012	2013	2014	2015	2016	2017	2018
Norway	50.7%	57.1%	63.5%	72.4%	79.3%	81.9%	83.7%
Denmark	44.9%	53.2%	62.4%	71.3%	78.3%	83.4%	85.8%
Sweden	43.1%	51.6%	57.9%	63.9%	69.2%	74.4%	78.5%
Netherlands	38.6%	47.1%	56.8%	66.3%	73.8%	78.8%	82.6%
UK*	42.6%	49.2%	54.5%	59.0%	62.9%	66.4%	68.3%
Finland	37.5%	44.2%	51.1%	58.1%	64.9%	72.0%	78.1%
Spain	32.0%	42.5%	48.7%	54.8%	58.3%	61.1%	62.9%
France	26.8%	36.7%	46.8%	53.9%	59.5%	64.4%	67.6%
Germany	27.6%	35.5%	43.8%	54.0%	61.6%	68.2%	72.1%
Italy	26.4%	35.7%	43.4%	52.2%	57.4%	59.0%	60.1%
Other	29.6%	37.6%	45.7%	53.3%	58.6%	62.5%	64.9%
Western Europe	31.8%	40.3%	48.1%	55.7%	61.2%	65.4%	68.0%

Note: mobile phone users of any age who access the internet from a mobile browser or an installed application at least once per month; use of SMS/MMS is not considered mobile internet access; *forecast from March 2014

Source: eMarketer, June 2014

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Many banks in this region were early innovators in creating and delivering digital banking services, which partly helps explain the high use among the population. While online banking adoption has more or less plateaued in the Nordics, mobile banking has a lot of runway to grow.

DENMARK

Like other Nordic countries, consumers in Denmark widely use digital banking services, due to high internet and mobile penetration in the country coupled with a stable, concentrated banking sector where virtually all institutions offer a variety of online and mobile services.

The World Economic Forum ranked Denmark 12th, and the country also ranked 17th in the Capgemini study. Denmark's score improved by 2.6 points over the prior year.

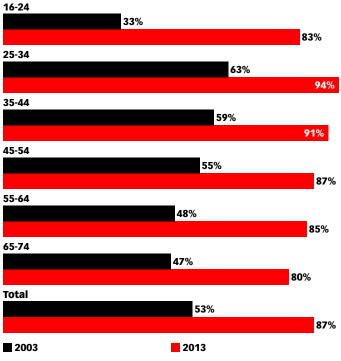
August 2013 research from Bain & Company found that Denmark had the second highest level of customer interactions in digital channels, slightly below Norway and slightly above Sweden.

In 2013 research from Statistics Denmark, 87% of the country's internet users were online bankers, while a more recent estimate from the same agency found that 80% of the total population used online banking.

Click here to view comparative estimates for online banking users (% of internet users) in Denmark.

While online banking usage in Denmark does seem to correlate with age—younger users being more prevalent than older users—adoption is nevertheless high across all demographics. In Statistics Denmark's survey, eight in 10 of 65- to 74-year-olds identified as online bankers in 2013, up from just 47% a decade earlier.

Digital Banking Users in Denmark, by Age, 2003 & 2013 % of internet users in each group

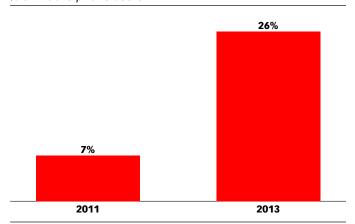


Source: Statistics Denmark, "It-anvendelse i befolkningen 2013," Nov 28, 2013

Mohile

Mobile banking use in Denmark is in line with adoption across the other Nordic countries. Statistics Denmark found that among mobile phone users, 26% said they used mobile banking in 2013—more than triple the proportion of users from 2011.

Mobile Banking Users in Denmark, 2011 & 2013 % of mobile phone users



Note: ages 16-89 Source: Statistics Denmark, "It-anvendelse i befolkningen 2013," Nov 28, 2013

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The data from Statistics Denmark was not far off from Eniro's December 2012 estimate (23.6%) or Bain & Company's August 2013 estimate (27% of internet-using bank customers).

Click here to view comparative estimates for mobile banking users (% of mobile phone users) in Denmark.

eMarketer estimates that by 2018, Denmark will have among the highest penetration of mobile phone internet users in the world, at 85.8% of the population. Mobile internet growth, combined with further development from the banking sector, will likely catalyze greater use of mobile banking.

FINLAND

Finland has a high degree of internet and phone penetration, which lends itself well to strong digital banking adoption. While many consumers in the country use online and mobile services from their financial institutions, Finland has a formidable physical branch network that is still heavily used. As consumer preferences and expectations move in a digital direction, banks in Finland will have to adapt their retail locations to meet changing needs.

Finland ranked 17th in the World Economic Forum study, and 19th in Capgemini's study; its score improved by 0.3 points over the prior year.

Eurostat estimated that as of Q2 2013, 92% of Finland's internet users were online bankers. Statistics Finland conducted a more broad study in 2013, finding that 79% of consumers had banked online in the three months prior to polling. According to Eurostat, online banking usage in Finland had a modest 1.4% CAGR from 2009 to 2013.

Click here to view comparative estimates for online banking users (% of internet users) in Finland.

Online banking in Finland is unique from the perspective that it has been effectively integrated as part of day-to-day ecommerce activities. Q3 2013 research from DIBS Payment Services found that direct payment from a bank—where buyers can log in to their online bank account to pay for their order—was the most popular preferred payment method among digital buyers in Finland. Card payments and invoices were preferred in other Nordic countries.

Preferred Payment Method for Digital Purchases According to Digital Buyers in Select Nordic Countries, Q3 2013

% of respondents

	Denmark	Norway	Sweden	Finland
Card payments	89%	57%	38%	28%
Micropayments	4%	13%	5%	8%
Online bank payments	2%	13%	23%	40%
Invoice	2%	13%	29%	17%
Cash	1%	2%	2%	2%
Installments	0%	1%	1%	2%
Other	0%	1%	0%	1%

Note: ages 15-74; numbers may not add up to 100% due to rounding Source: DIBS Payment Services, "Nordic E-commerce 2013" conducted by YouGov, Dec 2, 2013

Even so, Finland banks have not done as effective a job at turning their digital presence into avenues for customer acquisition. Bain & Company's research found that most new primary bank accounts in Finland were opened at a branch, and just a fraction were opened online. Other Nordic countries had a more diverse mix of sources for new account openings.

Mohile

Mobile banking is starting to catch on in Finland as well, although mobile phone internet penetration lags behind most other Nordic countries, which may be an inhibitor to growth.

Bain & Company found that 32% of internet-using bank customers in Finland had used mobile banking in the three months prior to its survey, while Deloitte found that 16% of mobile phone users had conducted mobile banking during the seven days prior to its polling in July 2013. In addition, the Interactive Advertising Bureau Finland (IAB Finland) found in a 2014 study that 14% of regular mobile internet users were also mobile bankers.

The differences are likely attributed to usage scope variances, as well as Bain specifically interviewing bank customers while Deloitte interviewed general mobile phone users.

Click here to view comparative estimates for mobile banking users (% of mobile phone users) in Finland.

It should be noted that while banks play a central role in online commerce, bank gateways were not as popular as the use of cards for mobile commerce payments among mobile buyers in DIBS Payment's survey. Bank payments nonetheless commanded a respectable 23% share compared with other Nordic countries.

Preferred Payment Method for Mobile Purchases According to Mobile Buyers in Select Nordic Countries, Q3 2013

% of respondents

	Denmark	Norway	Sweden	Finland
Card payments	75%	58%	46%	40%
Micropayments	10%	19%	8%	16%
Online bank payments	4%	6%	10%	23%
Invoice	1%	7%	25%	11%
Cash	1%	5%	3%	1%
Installments	0%	1%	1%	1%
Other	3%	1%	2%	2%

Note: ages 15-74

Source: DIBS Payment Services, "Nordic E-commerce 2013" conducted by YouGov, Dec 2, 2013

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NORWAY

With high internet and mobile penetration, it's no surprise that consumers in Norway readily use digital banking, although there is evidence that broader economic pressures are tainting customers' relationships with their financial institutions.

The World Economic Forum ranked Norway 13th in its study.

According to August 2013 research from Bain & Company, 75% of customers' interactions with banks in Norway occurred in digital channels—the highest of the 27 countries included in the survey. Despite the widespread use of digital banking, Norway ranked 29th in Capgemini's 2014 retail banking customer experience index.

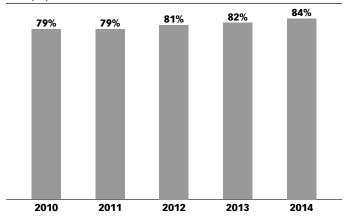
Just three in 10 customers surveyed had a positive experience with banks in the country—a decrease of 28.5% from the prior year and the highest recorded in the survey. Capgemini attributed the fall to broader issues like high real estate prices and growing personal debt.

All estimates put online banking usage in Norway as very high. Eurostat's Q2 2013 data found that 91% of internet users were online bankers, while Norway's statistics office cited usage at 86%. A separate 2014 estimate from Finance Norway (FNO) conducted a representative population survey and found that 84% were online bankers.

Click here to view comparative estimates for online banking users (% of internet users) in Norway.

According to Eurostat, online banking usage among internet users in Norway had a 1.7% CAGR from 2009 to 2013. Research from FNO showed a slightly lower CAGR of 1.5% for online banking use among the population, with modest gains each year considering the already-high penetration.





Note: ages 15+ Source: Finance Norway (FNO), "Dagligbankundersøkelsen 2014" conducted by TNS Gallup Norway, April 7, 2014

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Mobile

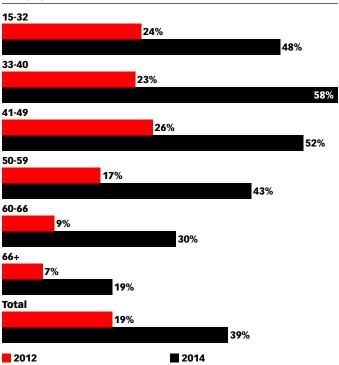
eMarketer estimates that close to two-thirds of the population in Norway will use the mobile internet by the end of 2014—the highest penetration among countries in Western Europe. Mobile banking use in Norway has grown substantially in recent years as a result.

FNO has the highest and most recent estimate of mobile banking use in Norway, at 39% of the population. FNO has historical data back to 2007 on Norway mobile bankers, which shows a 44.3% CAGR from 2010 through 2014.

When looking at comparative estimates, Bain & Company's estimate of internet-using bank customers as mobile bankers is close to FNO's estimate for 2013, at 32% vs. 28%, respectively. Eniro's 22.6% projection of mobile phone users as mobile bankers also lines up with FNO's 2012 estimate of 19%.

While 41- to 49-year-olds slightly led the pack when it came to mobile banking use in 2012, both younger and older age groups have jumped in. In FNO's survey, close to six in 10 of the 33-to-40-year-old respondents said they were mobile banking users—more than double the rate in 2012. In fact, usage across all age groups doubled at a minimum from 2012 to 2014, highlighting just how broadly mobile banking is being adopted in Norway.





Source: Finance Norway (FNO), "Dagligbankundersøkelsen 2014" conducted by TNS Gallup Norway, April 7, 2014

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SWFDFN

Sweden, the Nordic region's most heavily-populated country with an estimated 9.7 million people in 2014, has extensive internet and mobile adoption that has helped spur digital banking usage in the country.

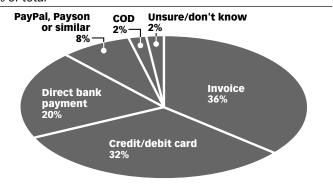
The World Economic Forum ranked Sweden 10th in its study, and Cappemini ranked it 18th; its score improved 0.3 points over the prior year, although positive customer experiences fell 2.6 percentage points.

More than eight in 10 internet users in Sweden are online bankers, according to estimates from .SE, Eurostat and Ipsos OTX. And in Eurostat's findings, online banking usage in Sweden had a 2.1% CAGR from 2009 to 2013.

Click here to view comparative estimates for online banking users (% of internet users) in Sweden.

While direct bank payments for ecommerce transactions aren't as popular in Sweden as they are in Finland, one in five digital buyers preferred to use this method when paying for a digital purchase, January 2014 research from PostNord found. Bank payments ranked behind credit and debit cards (32%) and invoices (36%)—something that is unique in the Nordic region.

Preferred Payment Method for Digital Purchases According to Digital Buyers in Sweden, Jan 2014 % of total



Note: ages 18-79; excludes services such as concert tickets, digital downloads, hotels and travel Source: PostNord, "E-barometern årsrapport 2013" in conjunction with Svensk Digital Handel and HUI Research, March 4, 2014

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Mobile

Estimates for mobile banking use in Sweden vary widely. In a March 2013 study, IAB Sweden found that 64% of internet users had used mobile banking, which was on the high side for the entire region, reflecting a broad definition that asked whether a user had ever used mobile banking.

Bain & Company's August 2013 finding pegged 38% of internet users as mobile bankers, while Eniro identified 31.2% of mobile phone users as mobile bankers at the end of 2012.

Click here to view comparative estimates for mobile banking users (% of mobile phone users) in Sweden.

LATIN AMERICA

Latin America is one region where the near-term likelihood of mobile banking use outpacing online banking is high. In the countries analyzed—Argentina, Brazil, Chile and Mexico—mobile phone users outnumber internet users. While smartphones are not as widespread, banking customers are nevertheless choosing to use mobile banking as much as or more than online banking.

Mobile Phone User Penetration in Latin America, by Country, 2012-2018

% of population in each group

	2012	2013	2014	2015	2016	2017	2018
Argentina	79.0%	81.0%	82.0%	83.0%	84.0%	84.7%	85.3%
Brazil	70.0%	72.5%	75.9%	77.5%	78.8%	80.0%	81.0%
Mexico	57.0%	60.0%	63.0%	65.5%	68.0%	70.2%	72.0%
Other	70.2%	71.2%	72.1%	72.7%	73.4%	74.4%	75.1%
Latin America	68.2%	70.1%	72.3%	73.6%	74.9 %	76.2%	77.2%

Note: individuals of any age who own at least one mobile phone and use the phone(s) at least once per month Source: eMarketer, June 2014

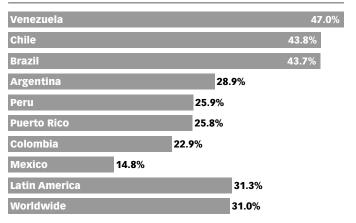
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Chile and Brazil are among the most advanced countries in Latin America when it comes to digital banking. Both nations have relatively modern banking systems compared with other developing and even many developed countries—an attribute that lends itself well to digital banking innovation.

Argentina benefits from the highest internet penetration in the region. By contrast, Mexico has struggled to promote greater digital banking usage due to a low population of consumers with bank accounts and lingering preferences for traditional channels among those who do have formal accounts. Online banking usage estimates from comScore Media Metrix reflect these different scenarios well.

Online Banking Users in Select Countries in Latin America and Worldwide, March 2013

% of internet users



Note: ages 15+; home and work locations; excludes traffic from public computers such as internet cafes and access from mobile phones and PDAs

Source: comScore Media Metrix, "Futuro Digital Latinoamerica 2013," May 28, 2013

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ARGENTINA

Argentina has the highest internet penetration in Latin America, at 63.0% of the population in 2014. eMarketer expects close to one-third of the country's 43 million people will be mobile phone internet users by the end of this year. Digital banking has started to catch on among the connected in Argentina, although a weak economy with growing inflation and softening exports threatens to stall growth.

The World Economic Forum ranked Argentina 55th in its study on the development of global financial systems and capital markets. Despite current economic challenges, Argentina ranked ninth in the Capgemini report, with 45.8% of bank customers having reported a positive experience.

According to Bain & Company's August 2013 study, close to half of customer interactions with banks occurred via digital channels.

Nonetheless, it also found that consumers still prioritized traditional channels in choosing a new bank, with the amount of ATM locations and branch staff reported as the top two factors that internet users in Argentina considered. Furthermore, only a small fraction of new accounts were opened online; most were opened in a branch.

According to comScore Media Metrix findings, 28.9% of internet users were online bankers. A separate March 2013 estimate from Ipsos OTX found that 25% of internet users had used online banking within the month prior to taking the survey.

Click here to view comparative estimates for online banking users (% of internet users) in Argentina.

Mobile

Mobile banking use in Argentina rivals that of online banking, according to Bain & Company, which found that 31% of internet-using bank customers were mobile bankers. Ipsos OTX determined a lower 15% of internet users had used a mobile banking or financial app in June 2013. Basic SMS banking is likely to remain popular until smartphone and mobile internet use become more widespread.

Click here to view comparative estimates for mobile banking users (% of internet users) in Argentina.

BRAZIL

Brazil has among the highest digital banking adoption levels in Latin America. Driving factors include relatively high internet penetration, at 53.1% of the country's more than 200 million people in 2014, and the highest penetration of mobile phone internet users in the region. In addition to these factors, Brazil was a relatively early adopter of digital technologies in the financial sector as a means of more efficiently moving money to combat the hyperinflation that plagued the country throughout the 1980s.

The World Economic Forum ranked Brazil 32nd in its financial development index. Brazil also ranked 21st in Cappemini's retail banking index; customers with positive experiences at banks in Brazil grew slightly between 2013 and 2014, from 40% to 41.4%. While the country now has a relatively stable financial system, it faces headwinds from issues with its business environment, such as high costs and issues finding talent.

Estimates show that about 40% of internet users in Brazil are online bankers. comScore's March 2013 estimate was the highest, at 43.7%, while Ipsos OTX data from March 2013 was at 41% and July 2013 IBOPE Media data at 39.3%.

Click here to view comparative estimates for online banking users (% of internet users) in Brazil.

Research from IBOPE Media showed that online banking usage in Brazil increased more than 20% between July 2012 and July 2013. On average, users spent more than 80 minutes interacting with online banking—the highest of the countries surveyed.

Furthermore, 2013 data from Banco Central do Brasil showed that banking transactions were conducted via the internet more than any other method across all applicable categories with the exception of loans and financing. Mobile phones were also used more to access statements and account balances compared with branches and call centers. These findings speak to the prevalence of digital banking among the banked population in Brazil.

Banking Transactions Conducted by Consumers in Brazil, by Access Channel, 2013 thousands

- 1 Correspondent banks
- 4 ATM
- 2 Internet (home and office) 5 Mobile phones and PDAs
- 3 Traditional branches
- 6 Call centers

	1	2	3	4	5	6
Ticket collection and agreements	2,633.0	1,600.6	1,141.5	699.7	53.9	14.2
Withdrawals	448.2	-	641.8	3,377.2	-	-
Deposits	292.5	-	757.6	856.5	-	-
Statements/account balance	250.8	7,182.9	575.7	4,159.1	1,482.2	1,109.2
Loans and financing	15.6	125.7	493.1	127.7	1.0	8.5
Transfer credit orders	3.2	1,333.1	125.5	214.1	23.5	11.7
Other financial action	ns 0.0	971.1	127.4	25.7	0.7	11.8
Other nonfinancial actions	41.5	5,932.7	4,616.0	761.4	718.1	389.3

Source: Banco Central do Brasil, "A indústria de cartões no Brasil," May 7,

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One unfortunate side effect to growing online banking use has been an increase in cybercrime, with online accounts becoming targets for criminals to exploit—something that could inhibit use. According to 2013 research from Trend Micro, threats include malware that specifically tries to steal peoples' online banking credentials, as well as altering tickets for the popular Boleto Bancário online payment system to route payments to a different account.

Mohile

By some estimates, mobile banking use is on par with online banking use in Brazil, which is to be expected in a country where mobile phone users outnumber internet users and the mobile internet will be almost as widely used as landline internet by 2018.

In a survey from telecommunications firm Tecnocom, 32.4% of mobile internet users in Brazil were mobile bankers last year, up from 24.6% in 2012, while Ipsos OTX pegged mobile banking users at 31% of internet users in June 2013.

In addition to mobile banking services provided solely by traditional financial institutions in Brazil, some banks and credit card companies have partnered with major telco providers to bring mobile money services to more than 150 million mobile phone users.

For instance, leading bank Bradesco partnered with MNO Claro to create Meu Dinheiro (translated to "my money"), which enables participants to access many of the same services as traditional banking customers. MasterCard also partnered with Telefonica's Vivo brand to offer Zuum, a service designed specifically to reach the unbanked in Brazil.

CHILE

Chile is one of the most advanced countries in Latin America when it comes to digital banking. With a population of 17.4 million, the country has a growing middle class with strong internet and mobile penetration relative to the region, along with an efficient banking system that enables easy, low-cost secure transactions via the internet.

The World Economic Forum's study ranked Chile 29th, placing it the highest among countries in Latin America. According to the report, Chile has "relatively strong factors, policies and institutions," although financial access is in need of improvement.

In Bain & Company's research, around half of all customer interactions with banks were conducted in digital channels. In addition, a good proportion of new bank accounts were opened online, which helps meet prospective customers' top factor of easy account opening when choosing a new bank.

In March 2013 data from comScore Media Metrix, 43.8% of internet users in Chile said they used online banking from their home or work computers. Additional comScore research found that, on average, internet users in the country spent 38.3 minutes per visit on online banking sites, compared with 22.9 minutes on tax sites and 13.7 minutes on personal finance sites.

Mobile

Mobile banking is also becoming more popular in Chile. Bain & Company estimated in August 2013 that 57% of internet-using bank customers were mobile bankers, while Tecnocom found that number to be closer to 50% of mobile internet users, according to its 2013 survey.

More specifically, Tecnocom's research found that mobile banking had the highest use in Chile when compared with several other countries in Latin America. While it also had the highest use in 2012, Chile nevertheless gained 2.9 percentage points in 2013.

MEXICO

Digital banking has struggled to catch on in Mexico, primarily due to low adoption of formal financial services like bank accounts, especially among the country's large rural population. As a result, mobile money services have stepped up to fill this gap by providing easier ways to hold and transfer money digitally.

The World Economic Forum's study ranked Mexico 43rd out of 62 countries. The country's overall financial and banking systems are relatively stable, but Mexico continues to grapple with issues related to financial access.

Additionally, Mexico ranked 13th in Capgemini's 2014 index. Mexico's overall score improved by 1.1 points over the prior year, and customers with positive experiences grew from 39.6% in 2013 to 42.5% in 2014.

Mexico still heavily relies on traditional channels to conduct banking activities. Bain & Company's survey found that just 38% of all customer interactions with banks occurred in digital channels—the lowest level among the 27 countries the firm studied. In fact, ATM transactions outpaced digital means, and branch transactions matched the amount of online transactions. And branch location was the top factor when choosing a new bank, according to respondents.

Online banking usage estimates for Mexico vary widely. For instance, AMIPCI (Asociación Mexicana de Internet) found 78% of internet users had used digital banking for monetary transactions in 2013, although respondents were required to have a bank account and visit banks' websites, which explains the unusually high estimate.

Other estimates range from 14.8% of internet users being online bankers (March 2013, comScore Media Metrix) to 37% of internet users (November 2013, Garritz Online Media). In addition, March 2013 data from Ipsos OTX pegged online banking use at 22% of internet users.

Click here to view comparative estimates for online banking users (% of internet users) in Mexico.

And according to Garritz, online bankers in Mexico tend to skew older. In its survey, 48.7% of 35- to 44-year-olds said they performed banking activities online, compared with 38.9% of 25- to 34-year-olds. Usage among those 45 and older was actually higher than this younger group, at 44.6%.

In addition, comScore Media Metrix found that while unique visitors to banking websites in Mexico grew 8.0% between June 2012 and June 2013, that rate paled in comparison to Latin America's overall growth of 32.0%. This finding further underscores that Mexico lags behind many other countries in Latin America when it comes to online banking use and growth.

Mohile

Mobile banking in Mexico is faring slightly better. Available estimates show mobile banking usage is similar to online banking usage in the country. Bain & Company's survey found that 38% of internet-using bank customers were mobile bankers, while a June 2013 estimate from Ipsos OTX pegged 25% of internet users as mobile bankers. And according to Tecnocom's findings, mobile banking usage among respondents increased 4.6 percentage points between 2012 and 2013 (20.8% to 25.4%, respectively).

Click here to view comparative estimates for mobile banking users (% of internet users) in Mexico.

According to the GSMA's Mobile Money Tracker, Mexico ties with Colombia in having the most mobile money programs currently in operation in Latin America. These four programs are designed to provide basic financial services like peer-to-peer money transfers and bill payment primarily to people in rural areas who do not have a formal bank account.

Mobile money services come in various permutations in Mexico. Banamex, one of the largest banks in Mexico and owned by Citigroup, partnered with MNO Telcel to develop and distribute its service. Called Tran\$fer, the SMS-based system enables domestic money transfer, mobile airtime top-ups and even cardless cash withdraws at Banamex ATMs.

Banorte, another bank in Mexico, offers its MiFon mobile money service in partnership with the government-operated telecommunications provider (referred to simply as Telecomm). Telecomm already acts as a correspondent bank for a number of institutions in the country and has a substantial footprint in rural areas. MiFon users can conduct transactions in these offices, as well as on their phone and with an account-linked debit card provided upon joining.

EZuza is a relative newcomer to mobile money in Mexico and works on the model of using agents, such as local merchants, to act as an intermediary between depositing and withdrawing account funds while simultaneously enabling mobile payments' acceptance for participating merchants. This model has been effective at increasing financial inclusion in countries like Kenya, although it is still in the early stages in Mexico.

THE MIDDLE EAST AND AFRICA

There are stark differences between key countries in the Middle East and Africa when it comes to digital banking.

- The oil-rich Gulf Cooperation Council (GCC) nations of Saudi Arabia and the United Arab Emirates (UAE), for instance, benefit from internet and mobile penetration that rivals that of developed Western countries, as well as stable, well-capitalized financial institutions that offer an array of digital services.
- Egypt, meanwhile, has been dealing with political unrest for the past several years, in addition to having relatively low internet and mobile use and low adoption of formal banking services. As such, digital banking uptake is low, and mobile money services from MNOs and some banks have emerged to serve unmet financial needs of the population.
- Africa has its own unique set of circumstances. South Africa is the most developed country on the continent, with a high proportion of banked consumers, although digital banking is still catching on. With low internet penetration but high mobile adoption, most consumers are choosing to use mobile banking when they need to use a digital service, although the majority are still tied to traditional means of conducting interactions and transactions.

eMarketer believed it would be worthwhile to also investigate two countries that have received a lot of attention for their efforts in using mobile technology to expand financial access: Kenya and Nigeria. Kenya's mobile money initiative has been very effective at expanding financial access, while Nigeria has hit some bumps in the road in trying to harness mobile to make its population less reliant on cash.

EGYPT

Digital banking services have been available in Egypt since the first decade of the 21st century. A mixture of factors including minimal adoption of formal banking accounts, low internet penetration, a lack of modern mobile banking services and recent political unrest have all contributed to low digital banking usage. The road ahead also remains uncertain.

The World Economic Forum ranked Egypt 53rd out of 62 countries in its study on the development of global financial systems and capital markets. In addition to existing issues with financial access and stability, recent events like protests and political upheavals in the country have had a detrimental effect on the economic and financial climate.

In terms of online banking usage, a May 2013 YouGov survey found that 39% of internet users in Egypt used online banking, although the population of internet users is small. In a February 2013 study from Northwestern University in Qatar, just 22% of consumers in Egypt reported to be internet users—the lowest among the eight countries in the region included in the survey. By the same token, it also found just 3% of respondents were online banking users—far below the regional 39% average.

Click here to view comparative estimates for online banking users (% of internet users) in Egypt.

Mohile

While several estimates put mobile phone usage at 77% to 88% of Egypt's population, mobile banking is still in its infancy. Limited mobile banking use is primarily attributable to a lack of available mobile banking offerings, although more banks are planning to launch mobile services in the future.

YouGov's May 2013 study found 15% of internet users used mobile phone banking, which included banking via SMS—a prominent delivery channel for mobile banking in Egypt. When YouGov specifically asked about a bank's smartphone or tablet app, just 5% reported using it.

That estimate is in line with MasterCard's data from December 2013, which found 7.4% of banked internet users in Egypt were mobile bankers. That constitutes low usage for a relatively connected population.

Click here to view comparative estimates for mobile banking users (% of internet users) in Egypt.

Two MNOs in Egypt have stepped in to provide mobile money services to Egypt's citizens, and the National Bank of Egypt has launched a competing service to reach a broader audience.

Mobile operator Etisalat offers Flous, which enables domestic peer-to-peer transfers via SMS, as well as deposits or withdraws at any Etisalat retail location or National Bank of Egypt branch. Vodafone offers Vodafone Cash to its customers, which supports money transfer, bill payment and airtime top-ups and has 7,000 locations in the country where users can deposit cash.

In September 2013, the National Bank of Egypt launched Phone Cash in partnership with MasterCard, its own initiative to provide mobile money services to unbanked and banked customers alike. Phone Cash supports features like money transfer, bill payment and airtime top-up and is connected with Fawry—a nationwide payment system available at 20,000 locations like retailers and post offices that enables users to deposit and withdraw cash.

KFNYA

Kenya is often cited as an important test case for how mobile money services can extend financial inclusion in a country with little formal financial or technological infrastructure. The mobile phone is now the primary financial access point for many living in Kenya, especially those in rural areas. As digital banking grows across the country, however, so do issues with security.

The World Economic Forum ranked Kenya 54th in its study. The country continues to deal with key challenges with its business environment and overall financial stability.

Online banking is not as closely studied in Kenya as mobile banking and mobile money, and as a result, no current usage estimates are available. The prevailing wisdom is that usage is fairly low.

According to a January 2014 study by the Kenya Bankers Association, awareness of internet banking was lower than any other type of banking product among the unbanked. Additionally, most users in Kenya primarily access the internet via mobile phone, according to January 2014 research from InMobi, creating a more

favorable environment for mobile banking.

One issue that current online banking users in Kenya have recently been dealing with is cybercrime. In a February 2014 report from TESPOK, only two online banking portals out of 33 tested had adequate online security.

Further, the report cited a statistic from the country's Banking Fraud Investigations Department that Ksh1.49 billion (\$17.5 million) was stolen from online bank accounts between April 2012 and April 2013—of which some incidents were traced to internal employees at banks and MNOs. Security issues have also recently deterred the use of debit and prepaid cards in the country.

Mobile

More than eight in 10 people living in urban areas of Kenya owned a mobile phone in 2013 (up from 53.0% in 2006), as did 61.5% living in rural areas (up from 19.2% in 2006), according to an October 2013 study by Financial Sector Deepening (FSD) Kenya. As such, mobile phones are the primary access point for financial services in the country, although estimates vary in terms of actual adoption.

Research from the Kenya Bankers Association found that 59% of mobile phone owners had used their mobile phones for banking and other financial transactions last year. A higher percentage of respondents in rural areas tended to use mobile for transactions than those in urban areas, at 71% vs. 57%, respectively.

In addition, MasterCard's December 2013 research found that 19.4% of internet users had used mobile banking apps, while 9% of the adult population in FSD Kenya's survey used a mobile to access a bank account.

Click here to view comparative estimates for mobile banking users (% of internet users) in Kenya.

More specifically, close to two-thirds of adults in Kenya, or approximately 11.5 million people, reported using mobile phone financial services providers (MFSPs), according to FSD Kenya. The number of MFSP users in the country has doubled since 2009, and twice the number of adults use these services compared with traditional banks.

According to GSMA's Mobile Money Tracker, there are currently six different mobile money services in operation in Kenya. The best known is MNO Safaricom's M-PESA service, the first mobile money service in the world, launched in March 2007.

M-PESA has found success in part due to its network of more than 40,000 agents spread out across the country—typically small merchants—that allow people to deposit and withdraw cash, as well as perform other financial functions. Safaricom also had strong market share when it introduced the service and ran a marketing campaign regarded as effective in raising awareness of the service.

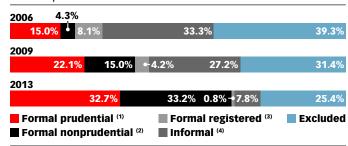
Several other services have popped up since then, primarily offered through other MNOs in Kenya with models and functionality similar to that of M-PESA. Because MNOs now play such a critical role in Kenya as the interface between people and their money, traditional banks like Equity Bank have taken steps to become mobile operators themselves to gain more control over the mobile banking experience and offer greater security for their own transactions.

These services have helped expand financial access to a significant number of Kenya's citizens. According to FSD Kenya, users of "formal prudential" financial services—offered by providers that are monitored by a central regulatory agency—doubled from 2006 to 2013.

Most notably though was the dramatic increase of "formal nonprudential" financial services, which includes mobile financial services offered by MNOs. Use of these services grew from 4.3% to 33.2% between 2006 and 2013, which underscores the important role these providers have played in bringing greater access to financial services.

Financial Services Used by Adults in Kenya, by Category, 2006, 2009 & 2013

% of respondents



Note: numbers may not add up to 100% due to rounding; (1) prudentially regulated and supervised financial services including capital markets, commercial banks, DTMs, DTSs and insurance providers; (2) financial service providers subject to nonprudential oversight including MFSP, NHIF, NSSF and Postbank; (3) financial service providers that are registered under law/government direct interventions including credit-only SACCOs, the Government of Kenya, hire purchase companies and MFIs; (4) financial services through unregulated forms of structured provision including employers, informal groups, moneylenders and shopkeepers/merchants Source: Kenya Financial Sector Deepening (FSD), "FinAccess National Survey 2013," Oct 31, 2013

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NIGERIA

Nigeria is Africa's most-populated country with more than 177 million citizens, but just one-third of adults have bank accounts. The Central Bank of Nigeria (CBN) announced a "cash-lite" policy in 2012 to widen financial access in the country, which included mobile money services at its core. While this policy helped create the highest concentration of mobile money operators in the world, mobile money has struggled to gain traction in Nigeria, especially in rural areas that would benefit from it the most.

The World Economic Forum ranked Nigeria 61st out of 62 countries in its 2012 study on the development of global financial systems and capital markets, just below Tanzania and above Venezuela. Specifically, a number of commercial and microfinance banks have failed in the past few years in Nigeria, which has created distrust of these institutions among the population.

About one-third of Nigeria's population uses the internet, according to a 2012 estimate from the World Bank—slightly above penetration in Kenya but below Ukraine. Between low internet penetration and a high proportion of unbanked adults, online banking usage in Nigeria is low.

Among adults in Nigeria who use banking products, the majority of them use a mix of bank branches and ATMs to conduct transactions, according to research from Enhancing Financial Innovation & Access (EFInA). In fact, just 0.9% of banked respondents in EFInA's September 2012 study said they used the internet to conduct banking transactions, while slightly more—2.4%—used a mobile phone.

Mohile

MasterCard's research found that around 4.8% of internet users had accessed mobile banking apps, which was low but not surprising considering most mobile phone users in Nigeria do not use smartphones.

Click here to view comparative estimates for mobile banking users (% of internet users) in Nigeria.

While smartphone usage in Nigeria may be low, overall mobile phone penetration is high: According to Gallup, 78% of households used mobile phones in 2013, up 4% from 2008. As such, mobile money services in the country primarily rely on SMS as the mechanism for effecting transactions.

Although there was initial excitement about mobile money being a driving force of financial inclusion in Nigeria, the various services have struggled to gain adoption due to myriad factors. These include inadequate capital for mobile money operators to build agent networks and market their products, intermittent energy availability, an aging telecommunications network and a lack of consumer awareness.

In an August 2013 study from NOI Polls, 59% of consumers in Nigeria were not aware of what mobile money services were. Of the 41% who were familiar, just 13% had used these services. By age, respondents 45 to 54 had the highest level of use. EFInA's research cited similar results, as two-thirds said they were not familiar with mobile money, and only one in five indicated that they could explain what it was.

One key difference between Nigeria's approach and Kenya's is that the CBN didn't dole out mobile money licenses to mobile operators, instead opting to give licenses to financial institutions like commercial and microfinance banks—a missed opportunity considering Nigeria's high mobile penetration rate. As a result, awareness and distribution have struggled, as most banks and mobile money agents do not have a strong presence in rural areas of the country.

Despite challenges, there are positive signs that mobile money is having an impact. As of May 2014, 25 million mobile money transactions valued at \$1.7 billion had taken place in Nigeria, up substantially from 1.6 million transactions totaling \$61.9 million in August 2013, according to former CBN deputy governor Tunde Lemo.

PayPal also recently entered the market in Nigeria, and Skye Bank launched a direct banking service in June 2014 enabled via SMS, online and mobile app interfaces, which took the bank 18 months to develop. Nigeria still has an uphill road in meeting its goal of reducing the financially excluded to 20% or less of the population, although it has made progress even without finding wild success with mobile money thus far. EFInA found that between 2008 and 2012, the proportion of adults formally included in the financial system grew 19.4 percentage points, or an increase of 17.4 million people. During the same period, the number of financially excluded adults decreased 10.5 million.

Financial Services Used by Adults in Nigeria, by Category, 2008, 2010 & 2012

millions and % of total

	2008	2010	2012
Banked (1)	18.3	25.4	28.6
—% of total	21.1%	30.0%	32.5%
Formal other (2)	2.1	5.3	9.2
—% of total	2.5%	6.3%	10.5%
Informal only (3)	20.7	14.8	15.2
—% of total	23.9%	17.4%	17.3%
Financially excluded (4)	45.4	39.2	34.9
—% of total	52.5%	46.3%	39.7%

Note: ages 18+; (1) have access to or use a deposit money bank in addition to having/using a traditional banking product; (2) have access to or use other formal institutions/products not supplied by deposit money banks including insurance companies, microfinance banks, pension schemes or shares; (3) have access to informal services/products including savings clubs/pools, esusu, ajo or moneylenders; (4) do not fall into other categories but may have access to loans/gifts from friends, family or employers

Source: Enhancing Financial Innovation & Access (EFInA), "Access to Financial Services in Nigeria 2012 Survey," Nov 22, 2012

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SAUDI ARABIA

Digital banking usage is prevalent in Saudi Arabia, supported by high internet and smartphone adoption. The country's banking sector is modern and well-capitalized, offering a variety of digital services. The World Economic Forum ranked Saudi Arabia 31st out of the 62 countries in its study.

Several estimates point to fairly broad online banking usage. In YouGov's May 2013 survey, 71% of internet users had used online banking, while Northwestern University in Qatar's February 2013 research found online banking use among 59% of consumers. Additionally, in a March 2013 survey of internet users by Ipsos OTX, 35% of respondents had used online banking in the past month, hinting at less frequent account checks among these users.

Click here to view comparative estimates for online banking users (% of internet users) in Saudi Arabia.

Mohile

Consumers in Saudi Arabia are spending more of their time on mobile devices, and banks are being challenged to strengthen their mobile offerings to meet new customer demands. In polling from Ipsos MediaCT, 79% of the country's population used smartphones last year, up from 63% in 2012, putting smartphone use on a trajectory to rival and then exceed internet use in the near future.

Although institutions in Saudi Arabia have long offered SMS-based mobile banking, they have been slow to develop and release mobile banking smartphone and tablet apps, which is reflected in the mobile banking estimates.

In YouGov's research, 45% of internet users had used mobile phone banking, which included basic SMS services. Just 23% said they had used a bank's smartphone or tablet app—in line with MasterCard's December 2013 research where 21% of banked internet users had used mobile banking apps.

Click here to view comparative estimates for mobile banking users (% of internet users) in Saudi Arabia.

Additionally, YouGov showed online banking use was most prevalent among respondents ages 40 and older, while both mobile phone banking and app banking were the most popular among 30- to 39-year-olds.

Digital Banking Usage Among Internet Users in Saudi Arabia, by Demographic, May 2013

% of respondents in each group

	Ge	nder	Age			
	Male	Female	18-29	30-39	40+	Total
Internet/online banking	79%	54%	62%	76%	81%	71%
Mobile phone banking	48%	39%	43%	48%	46%	45%
Bank's apps (smartphone/tablet)	27%	14%	20%	27%	22%	23%
None of the above	13%	30%	25%	14%	13%	18%

Note: n=4,277

Source: YouGov, "Financial Oracle," Sep 30, 2013

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Saudi Arabia's ranking of 27th place in Capgemini's index highlights how banks in the country are finding it difficult to adapt to changing habits. Bank customers with a positive experience decreased from 41.6% to 32.3% between 2013 and 2014—the second biggest year-over-year drop found in the study.

SOUTH AFRICA

As the most developed country on the continent, South Africa has a large banked population that has grown in recent years, along with a variety of foreign and domestic banks that provide digital banking services. Mobile phone usage far outpaces internet usage in the country, resulting in more mobile bankers than online bankers.

The World Economic Forum ranked South Africa 28th in its report. While the country has a relatively stable banking and financial system, its business environment remains challenged due to issues with talent and infrastructure.

In Capgemini's report, South Africa ranked fifth when it came to consumers' attitudes, preferences and behaviors related to banking. Close to 48% of bank customers said they had a positive experience in the country, which dropped only slightly from 2013 to 2014.

Financial inclusion policy think tank FinMark Trust, in partnership with TNS, surveyed 3,900 consumers in South Africa about financial access issues. It found ATM cash withdraw was the most prominent activity among banking consumers, with 88% performing this function in 2013.

The use of electronic bank transfers and bill payments via bank accounts both grew between 2012 and 2013. Still, that only amounts to about a quarter of respondents who use these services, and the list goes down from there.

FinMark Trust also estimated that 16% of consumers in South Africa were online bankers in 2013—double what it was the year prior. Additionally, Ipsos OTX found that 80% of internet users had used online banking in the month prior to polling, though it should be noted that less than half the population uses the internet in South Africa.

Click here to view comparative estimates for online banking users (% of internet users) in South Africa.

FinMark Trust's study provided a demographic profile of online banking users in South Africa, and showed a strong correlation between monthly income and usage, as was expected. From another perspective, respondents who lived in urban areas and had formal banking products used online banking more than other groups, with low use in rural areas and tribal lands.

Demographic Profile of Online Banking Users in South Africa, July 2013

% of respondents

Gender	
Male	18%
Female	13%
Monthly income (South African rand)	
None	6%
1-999	1%
1,000-2,999	2%
3,000-7,999	18%
8,000-11,999	37%
12,000-24,999	49%
25,000+	74%
Refuse/uncertain/don't know	22%
Area definition	
Urban formal	22%
Urban informal	10%
Rural formal	7%
Tribal land	3%
Total	16%

Note: n=3,900 ages 16+ Source: FinMark Trust, "FinScope South Africa 2013: Survey Highlights" conducted by TNS, April 17, 2014

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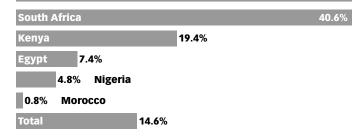
Mohile

Mobile banking in South Africa is indeed more prevalent than online banking. FinMark Trust estimated that 28% of the population used mobile banking in 2013, up from 25% in 2012. MasterCard's findings showed 40.6% of banked internet users had used mobile banking apps—the highest among the African countries surveyed.

Click here to view comparative estimates for mobile banking users (% of internet users) in South Africa.

Mobile Banking App Users in Select Countries in Africa, Dec 2013

% of internet users in each group



Note: total n=1,788 ages 18-64; Egypt n=361; Kenya n=303; Morocco n=387; Nigeria n=279; South Africa n=458 Source: MasterCard Worldwide, "Online Shopping Survey 2013: Africa," March 26, 2014

Despite high mobile penetration, smartphone adoption in South Africa was between 22% and 33% of the population in 2013, according to GroupM and the Pew Research Center Global Attitudes Project, respectively. As such, it may be challenging for institutions to expand their mobile banking user base and build out more robust capabilities. For instance, MasterCard's research also showed that 13.4% of respondents used SMS- or MMS-based payments—more than the other countries surveyed.

UNITED ARAB EMIRATES

The UAE has high internet, mobile and smartphone penetration, as well as a stable banking system—factors that have helped drive digital banking use. In fact, banks are finding it difficult to provide experiences that mesh with the country's increasingly digital lifestyle.

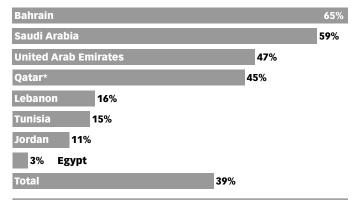
The UAE ranked 30th of 32 countries studied in Capgemini's 2014 retail banking customer experience index. The proportion of bank customers in the country with a positive experience decreased by more than 25% from 2013 to 2014, indicating that UAE banks may not be keeping up with evolving customer preferences. The World Economic Forum ranked UAE 26th out of 62 countries in its study.

According to YouGov, 76% of internet users in the UAE were online bankers last year. The Northwestern University in Qatar study looked more broadly at consumers in the country and found that 47% used online banking—12 percentage points lower than in Saudi Arabia.

Click here to view comparative estimates for online banking users (% of internet users) in UAE.

Online Banking Users in Select Countries in the Middle East & Africa, Feb 2013

% of respondents



Note: ages 18+; *April 2013

Source: Northwestern University in Qatar, "Media Use in the Middle East: An Eight-Nation Survey" conducted by Harris Interactive, April 24, 2013

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Mohile

In terms of mobile banking, YouGov found that 47% of internet users had used mobile phone banking, which included SMS-based services; just 16% reported using a bank's smartphone or tablet app. That finding is similar to data from MasterCard, which showed 18% of banked internet users as mobile bankers—just below Saudi Arabia by 3 percentage points.

Click here to view comparative estimates for mobile banking users (% of internet users) in UAE.

Additional demographic details from YouGov show that, similar to Saudi Arabia, online banking use was highest among respondents 40 and older, while those 30 to 39 were the biggest users of mobile phone and mobile app banking.

Digital Banking Usage Among Internet Users in the United Arab Emirates, by Demographic, May 2013 % of respondents in each group

	Gender		Age				
	Male	Female	18-29	30-39	40+	Total	
Internet/online banking	77%	74%	69%	78%	79%	76%	
Mobile phone banking	49%	43%	47%	50%	43%	47%	
Bank's apps (smartphone/tablet)	18%	11%	16%	17%	13%	16%	
None of the above	14%	15%	18%	12%	14%	14%	

Note: n=5,163

Source: YouGov, "Financial Oracle," Sep 30, 2013

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NORTH AMERICA

Digital banking has long been available to consumers in both the US and Canada. While usage is high in both countries, there are some distinct differences.

In Canada, for instance, online banking is used by a significant percentage of internet users. Most strongly prefer using the online channel, although preferences for ATMs and branches persist. As such, mobile banking adoption has not been as aggressive as it has in the US even with similar mobile internet penetration rates.

Mobile Phone Internet User Penetration in North America, by Country, 2012-2018

% of population

	2012	2013	2014	2015	2016	2017	2018
US*	39.9%	46.7%	52.4%	57.8%	61.7%	65.2%	67.8%
Canada	36.0%	43.4%	50.7%	55.6%	59.6%	63.0%	65.7%
North America	39.5%	46.4%	52.2%	57.6%	61.5%	64.9%	67.6%

Note: mobile phone users of any age who access the internet from a mobile browser or an installed application at least once per month; use of SMS/MMS is not considered mobile internet access; *forecast from March

Source: eMarketer, June 2014

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Online banking is also prevalent in the US, but mobile banking usage has ramped up over the past few years to the point where banks in the country are seriously rethinking their approach to traditional engagement channels—and especially ways to connect all of them together in a more seamless fashion.

CANADA

Digital banking use is widespread in Canada. The country has a highly concentrated and sound banking system that offers an array of digital banking services. Online banking has a strong following, although mobile banking is taking some time to catch on among a wider audience.

The World Economic Forum ranked Canada sixth in its report. In addition, Canada topped the list of 32 countries studied in Capgemini's index. Six in 10 bank customers from the country reported having a positive experience, registering a slight 0.8 percentage-point difference between 2013 and 2014.

According to Bain & Company's data, around 60% of all customer interactions with banks were conducted via digital channels, although respondents still conducted four branch transactions per guarter. Further, most new bank accounts were opened in a branch, with just a small percentage originating online.

Several estimates point to strong online banking use, with minor differences based on each survey's usage scope. In September 2013 data from ING Direct Canada, 86% of internet users were online bankers. Yahoo Canada found that 79% of internet users had used online banking within the six months prior to its Q3 2013 survey. Finally, in a March 2013 survey from Ipsos OTX, 76% of respondents had used online banking within the preceding month.

Comparative Estimates: Online Banking Users in Canada, 2013

% of each group

		Survey base	Usage	Survey date
ING Direct Canada, Oct 2013	86%	Internet users	Used online banking	Sep 2013
Yahoo Canada, Feb 2014	79 %	Internet users	Used bank's website in the past 6 months	Q3 2013
Ipsos OTX, June 2013	76 %	Internet users*	Used online banking in the past month	March 2013

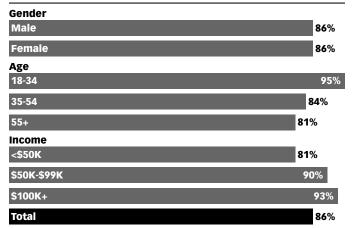
Note: *ages 18-64 Source: various, as noted, 2013 & 2014

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ING's study showed the highest proportion of online banking users were in the 18-to-34 age range. It also detected a correlation between income level and online banking usage.

Demographic Profile of Online Banking Users in Canada, Sep 2013

% of respondents in each group



Note: n=1.005

Source: ING Direct Canada survey as cited in press release, Oct 21, 2013

Mohile

Although mobile banking is widely available in Canada, sources estimate that around one-third or less of internet users actually use it. On the high end, ING found that 33% of internet users were mobile bankers as of September 2013, with the Ipsos estimate in line. Other projections found around one-quarter or less of respondents to be mobile bankers.

Comparative Estimates: Mobile Banking Users in Canada, 2013

% of each group

		Survey base	Usage	Survey date
ING Direct Canada, Oct 2013	33%	Internet users	Used mobile banking	Sep 2013
lpsos OTX, Nov 2013	32 %	Internet users*	Used mobile banking/ financial app	June 2013
Bain & Company, Nov 2013	26%	Online adults who are bank customers	Used mobile device to access banking app or website in the past quarter	Aug 2013
Videology, Jan 2014	26%	Internet users	Used mobile device for online banking	Dec 2013
Yahoo Canada, Feb 2014	23%	Internet users	Used mobile banking app in the past 6 months	Q3 2013

Note: *ages 18-64

Source: various, as noted, 2013 & 2014

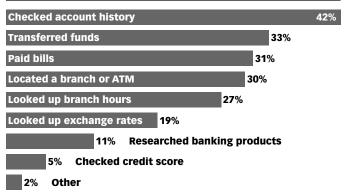
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In terms of functionality, current mobile bankers in Canada are primarily using mobile banking to check their account history. However, fund transfer, bill payment and location finders are also common reasons, according to Yahoo's research.

Mobile Banking Activities Conducted by Smartphone Users in Canada, Q3 2013

% of respondents



Note: n=503 smartphone users

Source: Yahoo Canada, "Money Matters: Understanding Canadians' Banking Needs," Feb 28, 2014

Neeus, Feb 28, 2014

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ING's data showed that younger users between 18 and 34 had adopted mobile banking much more readily than older cohorts, at 54% of respondents, while 35- to 54-year-olds matched the overall average of 33%. Of those 55 and older, just 14% reported using mobile banking.

Yahoo's research corroborated the finding of greater mobile banking prevalence among younger users. It also revealed ATM and branch visits were still widely used among all age groups.

Further, ING found that when it came to channel preference, online banking beat out all other categories across all demographic groups, with branch and ATM favorability higher among older respondents and mobile device preference higher among younger ones. One conclusion: Banks in Canada will have to craft more compelling experiences to achieve mobile banking traction with all consumers.

Preferred Method of Banking According to Internet Users in Canada, by Demographic, Sep 2013 % of respondents

	Online	In person, at a branch	ATM	Mobile device	Telephone
Gender					
Female (n=517)	64%	17%	11%	5%	3%
Male (n=488)	62%	21%	11%	5%	1%
Age					
18-34 (n=287)	76%	10%	5%	8%	1%
35-54 (n=404)	61%	19%	13%	5%	2%
55+ (n=314)	54%	27%	15%	1%	4%
Total (n=1,005)	63%	19%	11%	5%	2%

Note: numbers may not add up to 100% due to rounding Source: ING Direct Canada survey as cited in press release, Oct 21, 2013

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UNITED STATES

The use of digital banking has become prevalent in the US. Online banking among consumers is pervasive, and mobile banking continues to grow rapidly—to the detriment of branch traffic. This evolution has caused banks across the landscape to rethink their approach to retail as well as pursue omnichannel strategies.

The World Economic Forum ranked the US second out of 62 countries in its 2012 study. Additionally, the US came in second in Cappemini's ranking as well. More than half of bank customers reported having a positive experience in 2014, a slight decrease from 2013 and an indication that US consumers are increasing their expectations from their financial institutions.

Bain & Company's research found that close to 70% of customer interactions with banks in the US occurred in digital channels—the sixth highest of the 27 countries studied. Still, respondents had an average of five branch interactions per quarter, and account opening was still a branch-heavy activity. Notably, 18% of respondents younger than 35 opened an account online—double that of those 55 and older.

Estimates for online banking use in the US range from 61% of internet users (Pew Research Internet Project, May 2013) to 79% of consumers with a checking account (TD Bank, July 2013). In general, studies that surveyed the banked population found a higher proportion of use compared to broader surveys of internet users.

Comparative Estimates: US Online Banking Users,

% of each group

		Survey base	Usage	Survey date
TD Bank, Sep 2013	79 %	Consumers with a checking account	Used online banking	July 2013
Yodlee, April 2013	74%	Internet users with a bank account	Accessed banking information via computer	March 2013
COUNTRY Financial, Feb 2013	74%	Adults	Used online banking	Feb 2013
Federal Reserve Board, March 2014	72 %	Internet users with a checking, savings or money market account	Used online banking in the past 12 months	Dec 2013
Mercator Advisory Group, June 2014	69 %	Internet users	Used online banking from a computer	Nov 2013
Ipsos OTX, June 2013	62 %	Internet users*	Used online banking in the past month	March 2013
Pew Research Center's Internet Project, Aug 2013	61%	Internet users	Used online banking	May 2013

Note: *ages 18-64

Source: various, as noted, 2013 & 2014

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In July 2013 research from IBOPE Media, US internet users spent over 30 minutes per month banking online. According to Pew, usage among 18- to 29-year-olds and 30- to 49-year-olds is similar, although a good number of older internet users also bank online. As might be expected, usage also correlated with monthly household income, though rates were generally high for anyone earning \$50,000 or more.

Demographic Profile of US Online Banking Users, May 2013

% of internet users in each group

Gender	
Male	63%
Female	58%
Age	
18-29	67%
30-49	65%
50-64	55%
65+	47%
Race/ethnicity	
White, non-Hispanic	63%
Hispanic	62%
Black, non-Hispanic	48%
Household income	
<\$30K	48%
\$30K-\$50K	57%
\$50K-\$75K	71%
\$75K+	75%
Total	61%

Note: n=1,895 who do any banking online

Source: Pew Internet & American Life Project, "51% of U.S. Adults Bank Online," Aug 7, 2013

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Mobile

Mobile banking has generated significant interest among researchers in the US, garnering 10 usage estimates in 2013. The projections range from 19.0% of internet users (Videology, December 2013) to 45.0% of internet-using bank customers (Bain & Company, August 2013). Most estimates put mobile bankers at 30% to 40% of respondents—typically mobile phone users or internet users with bank accounts.

Comparative Estimates: US Mobile Banking Users, 2013

% of each group

		Survey base	Usage	Survey date
Bain & Company, Nov 2013	45.0%	Online adults who are bank customers	Used mobile device to access banking app or website in the past quarter	Aug 2013
Javelin Strategy & Research, March 2014	42.8%	Mobile phone users	Used mobile banking	Sep 2013
Deloitte, Nov 2013	36.0%	Mobile phone users	Used mobile device to perform online banking activities in the past 7 days	July 2013
Pew Research Center's Internet Project, Aug 2013	35.0%	Mobile phone owners	Checked bank account balance or did any banking via mobile phone	July 2013
Monitise plc, July 2013	33.0%	Internet users	Used mobile banking	April 2013
Yodlee, April 2013	31.0%	Internet users with a bank account	Used mobile banking	March 2013
Federal Reserve Board, March 2014	30.0%	Internet users with a checking, savings or money market account	Used mobile banking in past 12 months	Dec 2013
TD Bank, July 2013	29.0%	Consumers with a checking account	Used mobile banking	July 2013
lpsos OTX, Nov 2013	29.0%	Internet users*	Used mobile banking/ financial app	June 2013
Videology, Jan 2014	19.0%	Internet users	Used mobile device for online banking	Dec 2013

Note: *ages 18-64

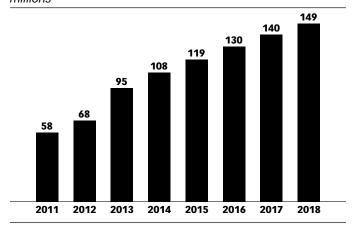
Source: various, as noted, 2013 & 2014

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By Javelin Strategy & Research's estimate, the number of US mobile banking users in 2014 will be almost double what it was in 2011. And come 2018, 149 million people will be using mobile banking.

US Mobile Banking Users, 2011-2018 *millions*



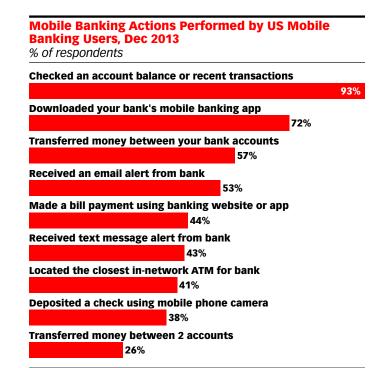
Source: Javelin Strategy & Research, "Mobile Banking, Tablet and Smartphone Forecast 2013-2018" as cited in press release, March 19, 2014

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In its December 2013 study of consumers and mobile financial services in the US, the Federal Reserve Board found that those ages 18 to 29 had the highest proportion of mobile banking use, at 39.1%. Usage decreased as age increased: One-third of 30- to 44-year-olds were mobile bankers, as were one in five of 45- to 59-year-olds and just 6.6% of respondents 60 and older.

The Federal Reserve Board also captured the top mobile banking actions among users. These included checking account balances and transactions, downloading the actual app, transferring money and receiving email alerts from banks on their device.



Note: n=640 ages 18+

Source: Federal Reserve Board, "Consumers and Mobile Financial Services

2014" conducted by GfK, March 25, 2014

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According to Q2 2013 research from AlixPartners, a higher proportion of younger respondents used mobile banking routinely, while older respondents tended to report more occasional use. As these younger consumers become more entrenched in financial products, institutions will have to satisfy their need for more constant, relevant engagement on mobile devices.

Frequency of Mobile Banking Usage Among US Banking Customers, by Age, Q2 2013

% of total

	18-25	26-34	35-44	45-54	55-64	65+
Use routinely (n=321)	26%	37%	20%	12%	3%	3%
Use occasionally (n=374)	19%	32%	24%	14%	7%	5%
Don't use (n=1,609)	6%	16%	18%	20%	17%	23%

Note: numbers may not add up to 100% due to rounding Source: AlixPartners, "Mobile Financial Services Tracking Study" as cited in "Mobile Banking Crossroads - Strategic Moves Banks Must Take to Remain Competitive," Nov 20, 2013

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