

payments system research briefing

Payment Services and the Evolution of Internet Banking

by Richard Sullivan, Senior Economist

Internet banking arrived in 1995 when Wells Fargo first allowed its customers to access account balances online and the first Internet-only bank, Security First Network Bank, opened. Since then banks have steadily increased their presence on the Web. In addition, many bank customers have begun to rely heavily on this new channel for delivering banking services. This *Briefing* reviews trends and discusses issues associated with Internet access to banking services. The most significant development is the importance of payments-related services on bank Web sites.

Web sites with transactions capability. This implies that 17 percent of banks had Web sites with simpler capabilities, such as information about bank products and locations.

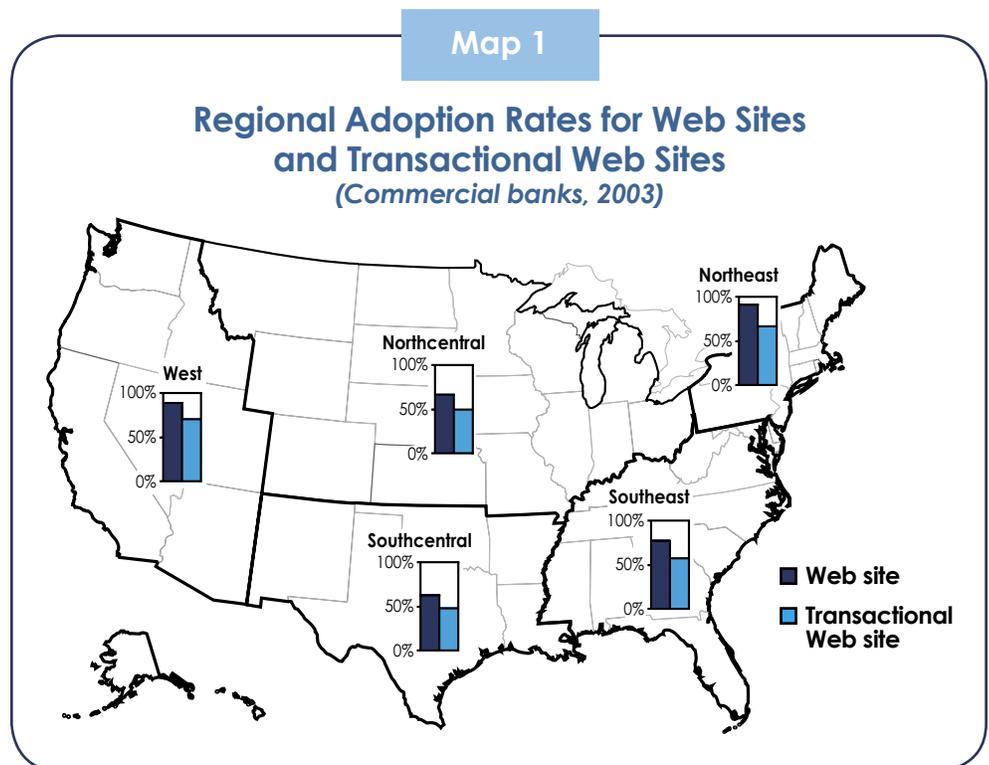
Adoption of Internet technology varies by size and location of the bank. In 2003, 96 percent of banks with assets more than \$300 million reported that they had a Web site, compared with only 51 percent of banks with assets less than \$100 million. Map 1 shows adoption of Internet banking across five regions of the United

National trends in adopting Internet banking

Systematic data on Internet banking became available in 1999 when FDIC-insured depository institutions were asked to report their Web site addresses. Data became more useful in 2003 when depository institutions also were asked to report whether their Web sites allow customers to execute transactions on their accounts. Presumably, such transactions would include the transfer of funds between accounts held at a bank or initiation of a payment to a third party.

The increase in the proportion of depository institutions that report Web addresses reveals the steady adoption of the Internet as a channel for delivering bank services. Thirty-five percent of institutions reported a Web site address in 1999, compared with 70 percent in 2003. Further, in 2003, 53 percent of depository institutions reported

States. The Northeast and the West have the highest adoption rates, while the Central regions of the country have the lowest. Adoption by bank size and region are tied together: Regions with high adoption rates are also those whose depository institutions are largest.



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Although the FDIC information is useful, it only provides data on transaction capability for 2003. Independent data collected by Payments System Research staff on Web site services for banks in Tenth District states, presented in the next section, provide more detail on Internet banking services over a longer period.¹

Tenth District trends in online banking services

As in the entire United States, there has been a steady increase in adoption of Web sites by banks in Tenth District states (Chart 1). Slightly more than 13 percent of banks had Web sites in 1999. By 2004 the number increased to more than 58 percent. Further, adoption of transactional Web sites, which are defined in the Tenth District data as sites where a customer can initiate an inter-account transfer, also has risen steadily. In 1999 fewer than 3 percent of District banks had Web sites that were transactional. Today the number has risen to nearly 46 percent. This surge in transactional Web sites illustrates the increasing importance of the Internet as a channel for payments services.

Chart 1

Adoption Rates for Web Sites among Commercial Banks in Tenth District States (First quarter)

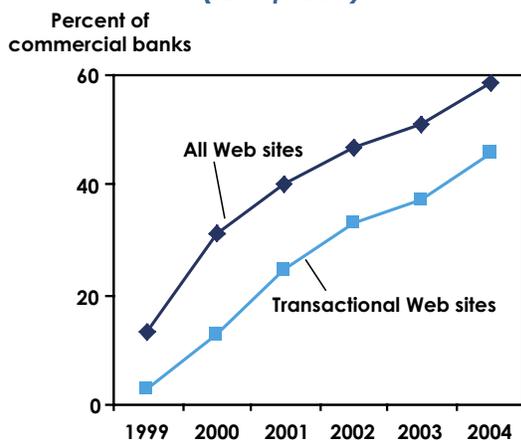


Chart 2 shows more detail on payments-related services offered on Web sites. Eighty-one percent of Web sites now allow access to account balances, up from 20 percent in 1999. Commercial services trail retail but are now available on nearly half of bank

Web sites, allowing customers to initiate payroll and other ACH transactions as well as wire transfers. Interestingly, after increasing steadily from 1999 to 2003, the proportion of Web sites with a bill payment function, where a customer can initiate a payment to a third party, declined to 61 percent in 2004 from 69 percent in 2003. One potential explanation is that this service entails some ongoing costs that banks find difficult to offset with consumer fees. Recently, some banks have eliminated fees for bill payment, which may have put additional pressure on others to eliminate the service.

Other more advanced payments-related services are now more commonly offered on bank Web sites. Of particular interest is the appearance of electronic bill presentment services on Web sites of banks in Tenth District states. This service presents on a bank's Web site the amount due on bills from a variety of billers and allows the customer to initiate payment. Payments System Research staff did not find any bank that offered this service in 2003, while 9 percent of banks do so in 2004. In addition, access to check images increased to 30 percent of Web sites in 2004, up from 11 percent in 2003. This increase may be tied to anticipation of the enactment of the Check Clearing for the 21st Century Act. The act, signed into law in October 2003 and effective in October 2004, allows banks to use check images to clear the associated payments. Finally, delivery of monthly bank account statements by electronic means increased somewhat from 2003 to 2004.

In contrast, growth of nonpayments online services has not kept pace with growth of payments-related services. For example, the proportion of Web sites with online loan, credit card, and deposit applications has been at or below 20 percent since 1999. Banks clearly have an interest in automating as many bank services as possible, including nonpayments-related services. But at this time, the types of online banking services toward which banks have migrated are primarily payments related.

Risks and opportunities of Internet banking

Internet banking exposes banks and the payments system to several risks, including operational risk, compliance/legal risk, strategic risk, and reputational risk. Operational risk is a

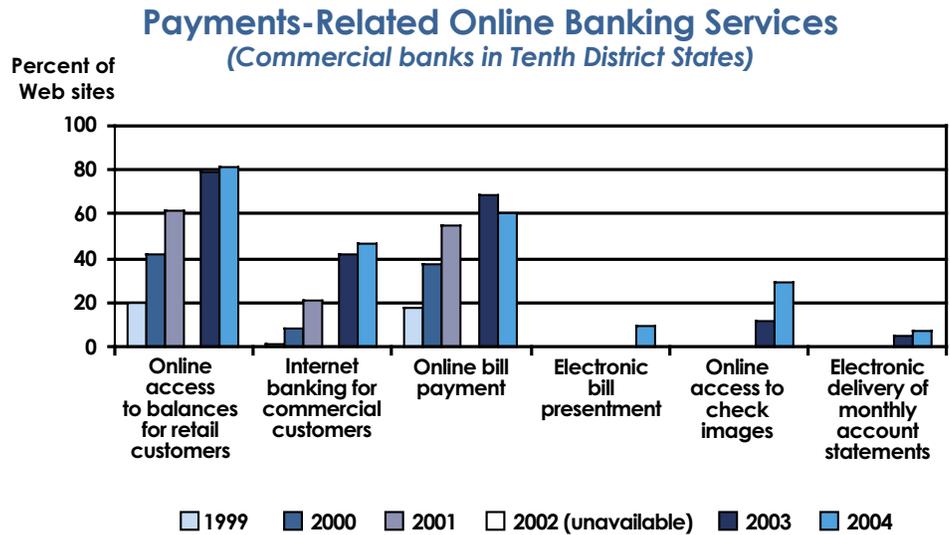
particular concern because online banking entails both technical and procedural changes. An Internet connection requires the bank to have strong control over who can access their computer system in order to protect information and prevent unauthorized transactions. Online banking also necessitates new procedures for handling payments, loan applications, and other services initiated on the Web. For example, a bank may need a new procedure to verify the integrity of an ACH file prepared with an online banking system.

A second concern is the reliance of banks on a small group of Internet banking vendors. In Tenth District states, 75 percent of banks with transactional Web sites use the software of only four vendors, with the top vendor accounting for 20 percent of installations. If this 20 percent were extrapolated to the entire country, then more than 800 banks could rely on the Internet banking software of a single vendor. If this software were compromised, then a large number of the country's banks could be exposed to unauthorized intrusion and potential service disruptions. This is an example of system-wide risk that arises when a technological system has a high degree of reliance on key software or hardware components.² In the case of Internet banking, where payments have become a central focus, discovery of a security hole in a leading vendor's software can expose the payments system to risk.

The risks associated with online banking, however, need to be balanced against advances in security measures and against the benefits of Internet banking. Procedures as simple as avoiding the use of a Social Security number for logon purposes can be highly effective security measures. Control elements built into online banking software, such as transaction limits, also reduce bank exposure to risk. And bank reliance on large software vendors may enhance security of Internet banking systems of individual banks. Because of their wide experience, larger vendors may have software with more

security enhancements. Moreover, many banks cannot duplicate the technological expertise of these software vendors.

Chart 2



Note: Data are based on random samples of 158 and 179 banks chosen from all commercial banks with Web sites in 2003 and 2004, respectively, and on a review of all bank Web sites for 1999 to 2001. Data are unavailable for 2002.

Finally, online banking has clear benefits for banks and their customers. Many banks report that online banking customers are among their most loyal and profitable. And customers like the convenience of Internet banking. It has been recently reported that banking is the most rapidly growing type of online activity.³

Online payments have been particularly popular. Estimates show that 25 percent of U.S. households used the Internet for payments in 2003, up from just 2.6 percent in 1998.⁴ Bank of America, for example, reports that the majority of its transactions are initiated online.⁵ Thus, as the United States continues to migrate from paper to electronic payments, which are more amenable to online banking than paper-based payments, prospects for continued growth of Internet banking in the United States look bright. Indeed, online banking has become an essential element of the payments system.

Endnotes

- ¹Data were collected by visiting bank Web sites. The Tenth District includes Colorado, Kansas, Nebraska, Oklahoma, Wyoming, northern New Mexico, and western Missouri.
- ²For more discussion of system-wide risk, see Terri Bradford, Matt Davies, and Stuart E. Weiner, *Nonbanks in the Payments System* (Federal Reserve Bank of Kansas City, 2003), pp. 9-11.
- ³Mary Madden, *America's Online Pursuits*. (Washington, D.C.: Pew Internet and American Life Project, December 22, 2003).
- ⁴*Online Banking Report*, No. 103, January 21, 2004.
- ⁵Will Wade, "Absence of Fees Trumping Fears in Online Banking," *American Banker*, June 3, 2004.

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Web site: www.kansascityfed.org/frfs/psrhome.htm

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