

Speeches

Technology in Banking: Paradise or Purgatory?

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Good morning. Chairman Francis, President McConnell and Georgia bankers, thank you for inviting me to the Georgia Bankers Association's 1998 Annual Convention.

I am pleased to exchange my economics hat for a banking hat today and to share my outlook for banking and the financial services industry. It's an outlook that like so much of the recent past is driven by technology. And it's an outlook in which the challenges—for small and big banks alike—are equal to the opportunities.

Technology brought me into banking. I remember being struck during my job interview at the Atlanta Fed by how manual the back-office operations were. Each and every dollar bill deposited with the Fed was inspected by hand. Thirty to 40 women sat together in a big room, going through bundles of currency piece by piece to determine if bills were fit to return to circulation. The check processing operation was equally crude. Employees determined a check's issuing bank by visual inspection, keyed in the amount, and then dropped the check into a slot in a "proof machine" that had separate storage compartments for each bank. For a young industrial engineer, the Fed was a challenging and exciting place to work.

In the 1980s I oversaw the bank's supervision and regulation division. Technology has changed it, too. As bankers remember all too well, computer processing power allowed nonbank institutions to compete for deposits by offering a range of banklike products, starting with the Merrill Lynch cash management account in the 1970s. This had a number of long-term repercussions, including the erosion of the practical and legal boundaries between banks and other financial institutions. As you well know, it's a process that continues to this day, and technology played a major role in getting it started.

More recently, innovations in intellectual technology—futures, options, swaps and other derivatives—have begun to change *how* we regulate. In the old days, managing risk meant managing credit risks and the exposure between borrowing short and lending long. These days, derivatives allow institutions to move exposures off the balance sheet and make it much more difficult to identify risks and their sources. The risk focus has also broadened to include interest rate risk, foreign exchange risk, liquidity risk and market risk. Because no single yardstick can adequately measure all these risks, we're increasingly using banks' own yardsticks—their own risk models—to assess risk. This "best practices" approach is a significant change for us, and, again, it was made necessary by intellectual technology.

Finally, technology has begun to play an important role in my thinking as an economic policymaker. As the current economic expansion begins its eighth year, many economists believe that a series of technological innovations and their application in almost every industry have improved productivity growth and contributed to the economy's impressive inflation performance. I agree up to a point. It's clear to me that business restructuring, better fiscal policy and the Fed's own anti-inflationary monetary policy also deserve substantial credit for the economy's performance. But there's no doubt in my mind that technology has played an important role in the current expansion. And there's little doubt that it has had a great impact on the financial industry.

One of my favorite definitions of the term "economist" is an expert who will know tomorrow why the things he predicted yesterday did not happen today. I'm going to venture some educated guesses in a few minutes, but I do think it's helpful to begin this discussion by looking at what we already know. And what we already know is that at the micro level—at the level of individual banks—technology has played a central role in reducing operating costs and in growing revenues.

When you think about it, though, very little of the technology that's so common in banking these days fits neatly into either category. And that, I think, raises a very important point. In the short run, technology cuts costs and grows revenues at the same time. In the long run, it changes the very nature of financial intermediation.

Consider a few examples. Mortgage and credit card-backed securities have broken the loan granting process into component parts, with each capable of being priced and generating revenues. Banks can earn fees for origination, underwriting, servicing and portfolio investment, and securitization allows those assets and their associated risks to move to those best able to accommodate them. For the individual bank, securitization has optimized costs, revenues and risks. For the financial industry, it has changed for good the way a consumer receives a loan. Without the capacity of modern computers to price these issues and transfer cash flows to their owners, none of these securities would be possible.

The use of derivatives for risk management and revenue has also exploded in recent years. While derivatives remain dominated by a few big banks—just eight institutions handled 94 percent of the derivative volume in 1996—their use will certainly become more widespread as more assets become eligible for securitization.

Another example of intellectual and computer technology is credit scoring. Banks with this technology are able to approve or deny loan applications on the spot, lowering substantially the costs of loan application reviews. And banks that combine credit scoring with the sort of direct marketing made possible by data mining are able to substantially increase the size of their potential loan pool. The result is higher revenues and lower operating costs. Again, none of this would be possible without the capabilities of modern computers.

But not every technological innovation has been so high-end. Some of the oldest technologies, such as ATMs and voice-response telephone systems, have much lower per transaction costs than human tellers, and banks have learned that customers will pay added fees for services based on such technologies. I have no doubt that the same potential exists for on-line and PC banking.

These innovations at the individual bank level have had profound implications at the industry level. For one thing, the banking industry has become much more efficient. The consulting firm McKinsey and Company estimates that overall productivity in banking increased at an annual rate of 4 percent since 1980; that's two to three times the average productivity gain of the rest of the economy.

For another thing, the banking industry has become much more profitable. The FDIC reports that commercial banks' return on assets (ROA)—the benchmark for profitability—was 1.23 percent in 1997, the highest rate since the FDIC's founding in 1933. Moreover, more than two-thirds of commercial banks reported an ROA of 1 percent or higher, indicating that profitability in the industry is both deep and wide. Of course, the low inflation, low interest rate economy also deserves some credit for this performance.

But as much as anything else, technology has created *competition*—from inside and from outside the banking industry. Now, I didn't fly to Bermuda to deliver the oldest news since the moon landing. I realize that competition among banks is as fierce as it has ever been and that competition from nonbanks has been a fact of life for most of you for more than a decade. But I do think it's worth reflecting on how this came to be.

The answer, in my opinion, is that most of the technology that has changed the banking industry—the hardware, software and the intellectual technology—is “off-the-shelf” technology. Some of it is *very expensive* off-the-shelf technology, but it nevertheless can be purchased for a price by anyone with the resources—bank or nonbank. And that is exactly what has happened. A bank in Texas, for example, can compete with a bank in Georgia for a small business loan simply by buying the same piece of credit scoring software and the same small business database. But because that technology is also available to a Chicago-based finance company, it might compete for the same loan by offering funds it raised by packaging mortgage-backed securities.

Where is all this technology taking us, then? Well, I suppose I can wager a guess as well as anyone—I'll try in a minute—but the fact is that no one really knows. I'm aware that companies have invested billions in the expectation that customers are looking for financial “one-stop shopping” or that, in the alternative, they'd rather jump on the Internet and shop around. But all of that can change in an instant. There's a reason, after all, that economists refer to certain supply- or demand-side events as “shocks.” You don't see them coming, and you certainly don't always know where they'll take you. Twenty years ago—even two years ago—who would've predicted that banking is what it is today? Technology brought us here and can take us elsewhere just as quickly. So any prediction about the future—by me or anyone else—ought to be taken with a healthy dose of skepticism.

My own outlook for the financial industry includes (1) a handful of all-things-to-all-customers megabanks, (2) electronic and on-line disintermediation, (3) a proliferation of specialized financial boutiques, and (4) small and community banks.

The first two—the megabanks and the on-line companies—have concluded that technological developments are taking them in opposite directions. For the big banks, those innovations include data mining, securitization, credit scoring and other specialized software and intellectual technology. The big development for disintermediation, of course, is the Internet. The boutiques will use all of this technology. And for small and community banks, I think there's a real opportunity to help guide customers through this brave new world. But first let me describe the landscape where all this technology leads.

You'd have to go a lot further than Bermuda to miss what's happening with the big banks. Just consider the names in the news from the last few weeks: First Union and the Money Store; NationsBank and Bank of America; Citicorp and Travelers; Banc One and First Chicago; Household Finance and Beneficial; Green Tree and Conseco.

One-stop shopping, cross-selling or synergies—whatever else you call it, economists call it economies of scale and economies of scope. Economies of scale is the idea that average unit costs decline as production volumes increase; economies of scope is the idea that production synergies make it cheaper to manufacture or distribute several different items instead of just one. It works for Wal-Mart and Ford; it ought to work for financial products, too.

Critics raise a number of counterarguments. For one thing, they say, financial products are fundamentally different from consumer goods; selecting a mortgage or mutual fund is hardly the same thing as selecting cereal, soap or even a car. Moreover, critics argue, some of the most important financial products offered by banks—especially mutual funds—have not exactly been world beaters, and banks don't make nearly as much money retailing someone else's. Finally, critics point out that despite early efforts—by Sears and Dean Witter, Shearson and American Express, and even Citicorp in the late 1980s—the concept of a financial supermarket has not yet been successfully executed.

I believe there is some truth to all these arguments. I also believe the megabank is an idea that won't go away. The technologies that helped spawn it two decades ago will continue to evolve, and the megabank will evolve with it. It is, in short, here to stay.

But so is the Internet. And advocates of disintermediation argue that borrowers and savers and investors and entrepreneurs will find each other directly through the Internet. It is, they argue, the ultimate counterparty matchmaker. You won't need a broker or agent—or megabank—to find the lowest-cost mortgage or life insurance policies; you can do it yourself on the Internet. In a few cases, of course—especially with on-line brokerages—investors are not dealing directly with counterparties. But even there, the result has been a dramatic increase in competition for investor resources and a dramatic decline in prices.

I'm familiar with the arguments against the disintermediaries, too. For one thing, the Federal Reserve Board's own Survey of Consumer Finances continues to show that Internet banking in all its manifestations receives very little use. For another, the Internet remains too slow for many people, and security concerns—some legitimate, some not—persist.

But at this stage, arguing against the Internet is like arguing against gravity. Some of you probably heard about a study of the digital economy issued last month by the Department of Commerce. According to Commerce, the number of Internet users grew from 3 million in 1994 to 100 million by the end of last year. The number of registered domain names—Georgiabankers.org, frbatlanta.org and the like—grew from 26,000 in July 1993 to 1.3 million in July 1997. Over the same period, the number of Internet hosts—those are the computers that contain the actual files you access—increased from under 1.8 million to 19.5 million. And traffic is doubling every 100 days. Maybe the Internet's not turning a profit for anyone yet; but you ignore it at your peril.

Both of these developments—one-stop shopping megabanks and electronic disintermediation—will increase the importance and number of bank and nonbank financial boutiques. If you think about it, this is already happening. Some of the biggest success stories in finance are boutiques: GEICO in insurance, MBNA in credit cards, Vanguard in mutual funds, and Countrywide Credit in mortgages. Much of the technology these boutiques have used is proprietary, but some of it is the same off-the-shelf technology that has changed the banking industry.

And in the era of megabanks, the boutiques will continue to play a vital role. Remember that supermarkets—if I may borrow the metaphor—don't actually manufacture the products they sell, even those that carry their own label. To be sure, many of the financial supermarkets will or already do. But they'll also brand and market as their own financial products that are assembled, managed and sold wholesale by boutiques. In addition, boutiques will retail direct to customers through the Internet.

They may also distribute products and services through banks like yours.

This kind of specialization has led many to conclude that financial products will soon become commodities. That's not completely accurate, of course. Financial products are distinguished by the intellectual capital that produces them, and even those that have some standardization—mortgages and credit cards, for example—vary a lot more than pork bellies and copper. Still, “commoditization” does characterize a major trend in the financial services marketplace. But remember, commodities are highly complex instruments; their markets change by the minute. If you're going to succeed with them, you need a high degree of knowledge and a lot of experience. Or you need professional financial guidance.

And that, I think, is what the small and community banks have to offer. It's a cliché but it's true: small banks *do* know their customers better. And they're personal relationships—not mined from a magnetic vein of bytes and bits. You know that that young couple expecting a baby needs to start investing for college before the baby gets a Social Security number. You know they're caring for a disabled in-law who's not yet old enough for Medicare. The megabanks—although they know a lot—don't know these things. And as for the Internet—well, heaven knows that young couple doesn't have time to shop around.

But you do. You know your customers and the financial marketplace. You're in a position to recommend the financial product that best meets their needs. And because you're not hawkling one that carries your own brand name, your advice will carry extra weight. As I see it, this approach could very well bring you a new set of competitors—namely, personal financial advisors. Still, it leverages your primary comparative advantage—that personal relationship—against your primary competitors.

But the low-tech approach must be accompanied by some high-tech, too. You don't necessarily have to be ahead of the technology curve; you just have to make sure you don't get behind it. Most of you know about the hardware side—the day you buy a Pentium machine, the Pentium II is introduced; we all fight that battle. By the way, let me commend those of you who provide Internet service in the towns you serve. That seems like a natural extension of banking because you're providing a valuable public service and, I hope, making some money in the bargain. On the software side, I remain hopeful that growing competition will drive down prices for credit scoring and database products.

Let me also encourage those of you who aren't involved to participate in technology consortiums or co-ops with other banks. They can provide volume pricing and technical assistance and, just as important, help you know that you're where you need to be on the technology side. The Fed is a source of technology for some payments services. The Fed is also a trusted intermediary that brings together groups of banks.

It may be that small banks and community banks will become, if I may borrow a transportation analogy, the AAA of the financial services industry. You know how that works: you're in Hawkinsville, Georgia, and you want to drive to Staunton, Virginia. There are probably a thousand ways to get there, but only two or three are any good. AAA will send you a map, highlight the best routes and note all the trouble spots along the way: construction in Greenville, traffic in Raleigh and so forth.

The financial system of the 21st century will be as big, as efficient and occasionally as encumbered as our transportation system. It will be a massive, interlocking network of technology and financial resources. And for the average customer, it could be easy to get lost. Small and community banks know their passengers, they know their destination, and they know how to get there. They provide an invaluable service and one that I think will be increasingly in demand.

Now, some of you probably noticed in your conference program that the title of this speech is “Technology in Banking: Paradise or Purgatory?” Titles like this are an old speechmaker's trick: When your host wants a speech title for the program and all you've got is a topic, offer up something that allows you to go either way. I hope “Paradise or Purgatory” characterizes what I've said so far about technology.

But the theologians among you may be asking, What is hell? Well, hell may yet arrive on January 1, 2000, when the millennium bug springs to life. We are, by all accounts, making good progress towards exterminating this pest, but—like termites—it requires constant vigilance. So here is a reminder.

The year 2000 problem is not just an internal operations problem. If you don't address it, you'll need cots, coffee, and No-Doze for a lot more than just your computer department. Your credit department will lose sleep; your accountants and customers, too. Just possibly, your friendly regulator will lose sleep worrying about you. And then—I promise—you'll lose sleep, too. All of which is to say that this is a problem for the officers and directors of your institution.

At the Fed, we will have completed by mid-summer a thorough Year 2000 preparedness examination of every institution under our supervision. Specifically, we are evaluating the sufficiency and implementation of each institution's Year 2000 project management plan, and we are monitoring the involvement of senior management and the board of directors. I have received good reports so far, but, again, this is a problem that requires vigilance by us all.

And that, ladies and gentlemen, is what I see along the technology horizon. It may not be as spectacular as a Bermuda sunrise, but rain or shine, it will be here tomorrow. I suggest we start preparing.

Thank you for your attention.

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