In the nineteen-eighties, credit-card companies divided the world into two kinds of people: those they could trust and those they could not. The trustworthy were given credit cards; they all paid a standard interest rate and annual fee. The untrustworthy—half the people in America—got no credit at all. If they wanted to borrow money, their best option was a trip to the local pawnshop.

This was an odd state of affairs. On the one hand, about a hundred million Americans were eliminated as potential customers. On the other, tens of millions of people who were all very different in their tolerance for risk and their ability (or desire) to pay down debt were treated the same. Credit-card companies adhered to the Industrial Age principle that the best way to answer a problem is to mass-produce a single solution. Henry Ford said that his customers could have their cars painted any color they wanted—as long as it was black. Well, virtually all the credit-card companies said that their customers could have any card, as long as it cost twenty dollars a year and came with an interest rate of 19.8 per cent.

Richard Fairbank and Nigel Morris changed that. They are the visionaries behind Capital One, the most innovative credit-card company in the world. (Visa and MasterCard don’t issue cards of their own; they join with financial institutions like Capital One instead.) In the mid-eighties, Fairbank and Morris were management consultants, with no experience in banking or credit cards. But, after studying a big bank’s operations for a single day, they decided that the credit-card industry was ripe for revolution. As they saw it, a credit card is not so much a slice of plastic as a formula made up of variables like interest rate, credit line, and cash-advance line, all of which can be changed with a few keystrokes on a computer. So, instead of offering one kind of credit card, they would offer thousands of credit cards, each slightly different. In this way, they would forever alter the way we pay for things—or put off paying for them. Credit cards now come with interest rates and bonus plans tailored to your appetite for debt and risk. Many also come with customized graphics—like the “life-style cards” that bear the logo of your favorite hockey team or your state flower. But the changes have been more than just cosmetic. By coming up with something for everyone, Capital One has democratized credit; these days, pretty much anybody who wants plastic can get it.

Of course, if you’re going to lend money to lots of different people at lots of different rates—including people previously deemed unreliable—you have to be able to make fine distinctions among them. You need to know how they spend, how they borrow, and how they procrastinate. Credit-card companies already had a lot of this kind of data, but they had no way of interpreting it—they couldn’t turn the data into information. Fairbank and Morris figured out how to do it. First, they adopted new digital technology that separated the useful data from the useless. Second, they started conducting what Fairbank calls “scientific tests on a massive scale,” to help them find customers and design products to suit them.

When Fairbank and Morris finally got the chance to put their ideas into practice, they started fiddling with everything. They pioneered the balance-transfer offer and the teaser rate (where you get a lower rate for the first few months). They started slashing interest rates for the best borrowers, and devising appropriate rates for the worst. They tinkered with credit lines, with mileage awards, with the design of the cards, and with the color of the envelopes of their mailings. They tried different ways of retaining customers and pursuing deadbeats. Essentially, they made Capital One an endless experiment.

Here’s what this means in practice: When someone at Capital One comes up with an idea for a new product—say, a platinum MasterCard for middle-income hikers who drive Saturn automobiles—the company combs its databases to select the ideal sample audience, then sends out the pre-approval come-ons. Most people throw them in the trash; but some don’t. Capital One’s mathematical wizards analyze the responses and determine whether the hiker card has legs. This approach enables the company to target smaller and smaller segments of the market. A lot of companies pay lip service to the idea of market research, but Capital One has made it the engine of its business. This year, the company will run close to forty-five thousand different tests. It will try out thousands of new products, most of which will fail. But, Fairbank says, “failure is information, too.” There are successes, as well, which is why the company now has thirty million credit-card accounts.

Capital One has, in short, mastered the paradoxical art of mass customization—much as Dell and Amazon have. Mind you, this can’t work for everyone. Companies like Procter & Gamble and Levi’s have discovered that consumers would rather not have to design their own hair conditioner or their own pair of jeans. But what’s clear is that Henry Ford’s one-size-fits-all approach was really the product of a time when it just wasn’t worth it for companies to build products that matched consumers’ individual needs. By showing what can be accomplished with a canny application of market research in an information age, the folks at Capital One have put the American financial-services industry, not to mention thirty million cardholders, in their debt.

—James Surowiecki