



## CASE: COMBINING OPERATION AND IT FOR PROFITABILITY AT CAPITAL ONE\*

Capital One is a major issuer of credit cards that operates in an extremely competitive industry. It is known for its over 1 billion-dollar investment in IT in just a few years. Much of the company's success is directly linked to a unique partnership between Jim Donehey, the CIO, and Nigel Morris, the chief operating officer (the COO). With these individuals, Capital One executed an important strategy of effectively linking IT to the business.

Donehey and Morris are unanimous in their belief that technology is the heart and soul of their company. They also are unanimous in their belief that technology is no panacea for less-than-solid business strategies.

### A RARE ALLIANCE IN A COMPETITIVE INDUSTRY

Donehey and Morris have forged an unusual partnership between operations and technology. Donehey's presence in the executive inner circle and his liberal access to the company's seven-person board of directors are as rare in corporate America as is the clarity of Morris' vision of technology to grow Capital One's business.

The credit-card industry is a tough business, more vulnerable to economic forces such as short-term interest rates that are beyond its control. With more consumers falling delinquent on their monthly payments and personal bankruptcies skyrocketing, Donehey and Morris face a new challenge: using IT to help Capital One diversify into additional markets and continue its trajectory of growth.

Capital One invested about half of its marketing budget into technology infrastructure, most notably the *3TB data warehouse* from which it plucks the names of consumers it bets will be ideal credit users: those who maintain balances and faithfully make their monthly payments.

The investment in IT has been more than justified. Consumers have eagerly taken the company's offers, ringing up \$12.8 billion worth of goods and services in less than three years on their Capital One credit cards. The company managed over 11 million accounts in 1998, adding more than 1 million net new accounts a year, placing it in the top 10 U.S. credit card issuers.

Capital One's ability to generate revenues from its IT initiatives is well known in its industry. While pleased by the glowing accounts of the IT strategy that he helped conceive, Morris cautions that many observers overlook the business and organizational strategies that made the data warehouse possible. "People talk about Capital One and how it's all in the database," he says. "It's not. It's in the process and technology."

In most organizations, operations and IT operate fairly independently from each other, prowling near each other but rarely crossing carefully placed boundaries. The usual routine has the operations staff—the analytical types who run the day-to-day aspects of a business—assessing their technology needs and then handing off the specs to IT—the holders of technology—for implementation. "That made sense when IT was a small portion of . . . companies' budgets and didn't have the impact it does today," says Erik Brynjolfsson, a professor at MIT's Sloan School of Management. "But in financial companies today, the business is the technology. You can't leave it as an afterthought." The problem, he says, stems from the complexities of the issues facing corporations. Getting two high-powered executives to understand and collaborate on extensive systemic change is a very difficult task.

However, Capital One, not only succeeds at the IT-operations partnership but also backs up its claim of parity at the top. Plenty of companies tout IT officers, but few welcome them into the executive suite as thoroughly as Capital One. Morris, the CIO, for years pursued the database marketing concept and he is regarded as one of the powerful top executives.

### REENGINEERING OPERATIONS AND THE CREATION OF CAPITAL ONE

For years, revolving credit cards were the province of commercial and retail banks. Cardholders fell into two categories: some were willing to pay annual fees in exchange for lowered interest rates; others balked at paying the fees. Banks made a specialty of catering to the first type of consumers. Around 1987, Morris and Richard Fairbank, his partner in a banking consultancy, had a better idea; forget the annual fees. Instead, find a way to anticipate which terms would appeal to which buyers—and make customers of all of them.

\*Condensed from Asbrand, D., "A Profitable Synchronicity," *Datamation*, September 1997.

Dismissing the cumbersome DB2 databases that banks relied on at that time, Morris and Fairbank began meeting with Oracle Corp. to discuss using its distributed relational database as a platform. Their vision was a system into which they would pour all kinds of information—credit-card-bureau data, demographics, purchased lists—and then wring it through modeling and what-if scenarios, eventually generating carefully screened lists of consumers. The system also would respond very quickly to accommodate the constant market testing needed to target particular customers for new products.

Over the next 18 months, the two men pitched the *database marketing* concept to more than 20 banks. The first—and only—taker was Signet Bank, a regional bank in Richmond, VA, with 1 million cardholders. The deal Morris and Fairbank worked out with Signet allowed them to manage the bank's credit card portfolio and invest a percentage of the profits they earned in the database marketing effort. By 1990, Morris and Fairbank, who had hired on with Signet Bank, had in place the IT infrastructure for their business. The next year, the database marketing strategy proved its worth. Working from a list derived from painstakingly tested *mathematical models*, Signet emerged into *target marketing*, offering consumers not just one type of card, as banks were doing, but one of 300 cards with terms and interest rates carefully matched to what Signet hoped would be each recipient's liking. The bank also pioneered the first credit card that offered low introductory interest rates and the option to transfer balances from other cards. Consumers signed up in droves and the company doubled in size the next year.

In 1994, Capital One Financial Corp. was born when Signet Bank spun off the credit card division, regrouping to focus on its core banking business. Fairbank became the chief executive of the new business, and Morris, head of operations. For a time, Morris, who had led the database project, also served as interim technology leader.

## CREATING THE IS ORGANIZATION

Donehey joined Capital One in late 1994. While the company's Oracle databases were its technological crown jewels, the rest of IT was in a rickety state. Donehey was horrified to find that the second-floor data center was sandwiched over the kitchen on the ground floor and beneath the third-floor bathrooms. One leak might drown the Unisys mainframes as well as Capital One's prized customer data. Also, the risk of fire coming from the kitchen was very high. There was no disaster plan in place.

Capital One had also inherited a small IT staff and aging technology from its parent. Four years earlier, Signet Bank had outsourced all of the company's information systems to EDS to raise much-needed capital. Now Morris and Donehey wanted them back. Bringing

back the systems—all of the company's main function, including general ledger, purchasing, payroll, and personnel—was a first step in unifying IT and laying the groundwork for future architectures. The \$49 million expense of breaking the contract was negotiated as part of the spin-off deal's restructuring costs. After reviewing each systems contract, only one application, the deposit system used for Capital One's secured credit card accounts—those that require an initial deposit by the consumer, was left with EDS. It simply was more profitable to do so.

## STRUCTURING CAPITAL ONE

Over the next two years, Capital One took back from EDS and modernized 15 systems, such as the general ledger systems, which it migrated off the MVS mainframe and into an object-oriented UNIX environment. It also began expanding Capital One's organization. As an information-based business, the traditional hierarchy was considered to be inappropriate.

Donehey and Morris created a different kind of organization. Gone was the compartmentalized organization with marketing, sales, human resources, or finance departments determining how they needed to work and then approaching programmers in application development departments for the technology. Capital One scrapped that convention.

## THE TRIANGLE METHOD

New IT endeavors are run by a three-way partnership: one representative each from IT, operations, and marketing (the business strategists). To open the flow of ideas wider, Donehey eliminated the position of head of application development and created a new position: the business information officer or BIO. The BIO would be the equivalent of a systems development manager—but without the authority to do new-product research.

The triangle has enough dynamic tension so no one can run off and do their own thing without cooperating with the others. The BIO layer increases the CIO's span of control considerably since he can handle more BIOs because if they're truly integrated with the business units, they don't take up a lot of the CIO's time.

## COMPUTING THE VALUE OF IT

While most IT departments calculate value based on straightforward return-on-investment (ROI) equations, Capital One uses the formula of net present value or NPV. NPV computes the value today of returns that will be reaped in the future. It involves more variables than ROI but offers more detail on the investment in the long term. A lot of companies have difficulty using NPV because it's hard to get meaningful numbers to plug into the compu-

tation. It's especially hard in IT since the assessment of returns in a few years is based on assumptions—how quick the proposed system will be put in, how much better the process will be, and the additional profits.

Donehey's experience with quantitative methods enabled Capital One to use NPV in IT by developing highly sophisticated formulas.

## IT INFRASTRUCTURE

Capital One uses three mainframes—an IBM 390, a Unisys A series, and a Tandem that interfaces with the computer systems of Visa and MasterCard. Together they service 10 million accounts, each account involves an average of 14 transactions per month.

In addition, more than 100 production and test databases, run primarily on HP T500s, plow through the estimated 7,000 live product tests Capital One launches each year. The 7,000 products it tests annually are the soul of Capital One's information-based business, says Morris. "Our business is about being able to do lots of tests and learn at increasingly exponential rates." That's a good thing, Morris adds, because "what we've done today doesn't apply tomorrow because the world is changing." The company's fiber optic WAN connects its 7,000 PCs in six sites. In Fall 1997, Capital One went live with a new distributed, object-oriented client/server billing system.

## JUSTIFICATION

Donehey on several occasions has been able to persuade skeptical outside directors about the importance of investing more than \$100 million in IT and of new opportunities. The ability of the company to execute from a cost and time point of view was related to its ability to leverage its foundation applications. Donehey's ability to articulate clearly among the options—which ones were easy and not so easy—was part of the decision-making process.

## LIMITATIONS

In such large scale system development projects, there have been trip ups. The project-management triangle, for instance, doesn't always ensure superior results. A plan to outsource collections called for keeping the systems in house and hiring a contractor to manage the process remotely. Somehow overlooked was the contractor's tiny size. Capital One was shocked to find its systems being remotely accessed from a small office behind a garage. "We had huge security risks and we had to go in and shut those things down," says Donehey.

## IT ENABLING THE ENTERING INTO NEW MARKETS

By using its databases as a hedge, Capital One has continued its innovating ways in entering new markets. For instance, it has generated new profits in the usually hard-to-serve markets of students and secured-credit users. It has, however, moved slowly in its efforts to expand beyond credit card products. It toyed with the ideas of licensing its technology and opening a consulting arm, but scrapped them both. Analysts suspect the company, always highly secretive about its plans, may also be exploring insurance products and home-equity loans.

In 1995, Capital One launched a cellular telephone business. To Morris, the venture, called America One, makes perfect sense, "We can buy wholesale cellular air time, brand it, and package it for people looking for different kinds of deals." Whether America One is a success, however, is unclear. Morris says the venture is "now growing at a rapid rate," but declines to discuss financials or the number of customers, adding "the large telecommunications companies haven't taken us very seriously." Capital One also has made recent investments in intelligent call-center routing, computer-telephony integration, and PCs.

## THE FUTURE

In the coming quarters, Donehey and Morris will need to squeeze every advantage they can from technology. Over the last two years, the credit card industry has been stung by several major shifts. For one thing, late payments and charge-offs are rising. The average loss among card issuers is seven percent, double what it was in the late 1980s. Also, consumers are becoming more financially conservative—36 percent now pay off their balances every month, bad news for card issuers that make their profit from interest and late fees.

## CASE QUESTIONS

1. Which business pressures are impacting the operation of the company?
2. Capital One uses about 50 percent of its marketing budget in building IT infrastructure. Why? And how can one justify such a huge investment?
3. The partnership between the CIO and the COO is considered the key to the company's success. Why?
4. How was credit card *customization* initiated at Signet Bank? Why is this considered a reengineering? What was the role of IT in this initiative?

5. Why was it advisable to break up the outsourcing contract and pay \$49 million for the break up? Compare this to Xerox's case (Minicase 1 in chapter 15) where the opposite has been done.
6. Comment on the security situation in 1994.
7. Selective outsourcing has been recommended by many as a most prudent strategy. Why is this so? (Search the literature) What motivated Capital One to outsource the deposit system?
8. Read more on the concept of the BIO in the original paper (available online at [www.datamation.com/plugh/issues/1997/september/ogcap.html](http://www.datamation.com/plugh/issues/1997/september/ogcap.html)). Why is the triangle approach breaking the departmental log-jam and allowing development managers to focus on business rationale?
9. Why is Capital One called an information-based business?
10. Find more information about NVP in general. Why is it more complicated to calculate than ROI?
11. What could be the contribution of the triangle method to systems development?