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To Stream the Impossible Stream

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Columbia Project: Using Software to Achieve Competitive Advantage

NATIONWIDE FINANCIAL SERVICES

**Gaining and Sustaining Long-term Advantage Through Information
Technology**

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GAINING AND SUSTAINING LONG-TERM ADVANTAGE THROUGH INFORMATION TECHNOLOGY

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Gaining and Sustaining Long-term Advantage Through Information Technology

How have U.S. and Japanese firms organized and managed the process of becoming recognized leaders in using information technology (IT) to achieve long-term sustainable advantage? Answering this question is the overall purpose of this project, which has been underwritten by a multi-year grant from the Sloan Foundation. The project has used case specific studies, each of which is complete in itself. This and the other studies are listed in Box 1.

The cases support an initial research hypothesis: leading U.S. and Japanese software users are very sophisticated in the ways they have integrated software into their business strategies. They use IT to institutionalize organizational strengths and to continually capture the knowledge generated by their business operations. As an introduction to the specifics of the case presented in this paper for Nationwide Financial Services, an outline of the focus of the project and the general methodology used is presented here.

Focus of the Cases

All the cases are written with a strategic focus. That is, each study examines a firm's strategy for using IT, rather than looking at the specific software or IT systems used. The latter generally is noted only to illustrate and explain the former. This emphasis was not specified when the project began, but evolved as research progressed.

Business strategies are important in understanding IT strategies because the implementation and design of each company's IT systems and software strategy is unique to its competitive situation, industry, and strategic objectives. These factors influence how a firm chooses between IT options for achieving specific goals and measures its

success. Indeed, the leading software users examined in this Sloan study link IT strategies with business goals through mission statements that explicitly note the importance of information technology to competitive success. In addition, because IT is seen as important to competitive success, information technology is specifically linked via organization, products, and services to related corporate objectives.

Box 1 - The Sloan Studies and How to Obtain Copies

The studies are on food retailing (Ito-Yokado), semiconductors (NEC and AMD), pharmaceuticals (Takeda and Merck), retail banking (Sanwa and Citibank), life insurance (Meiji and Nationwide (which replaced USAA, as the latter was unable to participate)), investment banking (Nomura-NRI and Credit Suisse First Boston), autos (Toyota), steel (integrated mills and mini-mills), (Nippon Steel, Tokyo Steel and Nucor), and apparel retailing (Isetan and Federated).

The industries and cases generally were selected based on the advice and research of specific industry centers funded by the Sloan Foundation. These are the computer and software center at Stanford, the semiconductor and software centers at the University of California, Berkeley, the financial services center at Wharton, the pharmaceutical and auto centers at MIT, the steel project at Carnegie-Mellon, the food services project at the University of Minnesota, and the apparel center at Harvard.

Completed papers are available under "Programs" at the Center on Japanese Economy and Business' website: gsb.columbia.edu/japan.

Beyond this general observation, there are four (related) reasons the cases became focused this way. First, in the interviews and conversations with management, responses were primarily in terms of strategic principles. This indicates that the firms manage IT decision-making by following a set of strategic principles that has been integrated with each firm's view of its competitive environment and core competencies. This is similar to the Nelson and Winter (1982) rules and routines for other kinds of management decisions and innovations, and illustrates these firms' evolutionary approach to IT use and development.

Second, information technology changes very rapidly and thus each firm is constantly upgrading and evolving its systems. Detailed descriptions therefore would rapidly become obsolete. Third, at a general level, differences in firm IT systems can be almost trivial, as there are only a limited number of operating system options. Finally, at

a detailed level, all the firms have unique software and IT systems because of the way each weaves organization with packaged and custom software. There is thus little others could learn if a study just explained the detailed IT systems used. The cases would be very long and would drown the reader in data. This was apparent when the project team tried to develop IT organization charts for Takeda, Merck, and NEC.

General Methodology

All the cases initially were developed using a common methodology to examine cross-national pairs of firms in key industries. In principle, each pair focuses on a Japanese and U.S. firm in an industry where IT is a significant and successful aspect of competitive performance. The initial set of firms was recommended by the related Sloan industry centers. To develop these "best-practice" studies the research team combined analysis of current research results with questionnaires and direct interviews. The team talked with personnel at the industry centers in order to relate these materials to previous work, as well as to utilize their expertise.

In this way a set of questions that specifically relates to a firm's business strategy and IT's role within that were developed. New questions were coupled with materials used in a 1993-95 study (Rapp 1995), thereby relating each candidate and industry to earlier results. Some questions address issues that appear relatively general across industries, such as inventory control. Others, such as managing the integrated circuit (IC) manufacturing process, are more industry-specific. The focus has been to establish the firm's perception of its industry and its competitive position, as well as its advantage in developing and using a particular IT strategy.

Customers, competitors, and industry analysts were contacted to determine whether competitive benefits or impacts perceived by the firm were recognized outside the organization. Further data were gathered from firms and organizations that had helped in the earlier project. The key questions and issues are summarized in Box 2.

Customized Software

Although Japanese users historically have relied heavily on customized and semi-customized software (Rapp 1995, 1998, and 1999), this gradually is changing toward a more selective use of packaged software managed via customized systems, including proprietary middleware. (Box 3 discusses the reasons for the importance of customized software in Japan.)

Box 2 - Key Questions and Issues

The project team sought to answer key questions while recognizing firm, industry, and country differences. The questions are broken into the following categories.

General Management and Corporate Strategy

Industry Related Issues

Competition

Country Related Issues

IT Strategy

IT Operations

Human Resources and Organization

Various Measures such as Inventory Control, Cycle Times, and Cost Reduction

A wide range of issues, from direct use of IT to achieve competitive advantage, to corporate strategy, to criteria for IT selection, to industry economics, to success measures, to organizational integration, to beneficial loops, to training and institutional dynamics, and finally to inter-industry comparisons, is thus covered. These issues have been broadly explained and compared in two Sloan-project summary papers (Rapp 1998 Dec; 1999 Jun).

Conversely, US firms, which have often relied more on packaged software, are customizing more as demonstrated in the following case for Nationwide Financial Services (NFS). This is especially true when the company wishes to initiate a new product or service that advances the competitive envelope, but for which no packaged software product exists because demand has not yet developed. Customizing also is more

likely for the systems needed to integrate software packages into something more closely linked to the firm's business strategies, markets, and organizational structure.

Box 3 - Reasons for the Importance of Customized Software in Japan

The origins and gradual development of customization in Japan began in the early 1960s. MITI promoted the development of the Japanese computer industry with subsidies and by sponsoring multiple alliances with overseas producers including RCA, GE, and Honeywell. The resulting operating system fragmentation among Japanese producers led them to provide free software in order to lock users into their hardware. However, it fragmented the software market due to the development over time of multiple and incompatible user systems. As the early development of computer use in Japan was for mainframes, this resulted in large, highly integrated, but unique systems for large users. Toyota and Nippon Steel, for example, have used computers to manage their production systems since the 1960s.

Gradually, though, what was perceived as an expensive legacy was seen to have advantages in promoting consistency and tying the organization and its culture together in ways that could not be emulated. The long-term employment system helped firms to train and retain the personnel needed to manage and upgrade the IT systems. This situation was further promoted by the firms' experience in technology acquisition and in successful management of unique production systems through integrated organizational structures. Thus, their IT strategies, to a degree, are a continuation by other means of their traditional strategic focus on growth, cutting costs, and increasing market share through constant improvement and technological advances.

Customized IT plays a key role in these firms' intra-industry development strategies, including their emergence and competitive impact as multinational enterprises. The use of captive subsidiaries is a direct extension of this strategic approach, and demonstrates the firms' commitment to continuing their current emphasis on unique customized systems. This means the market for vertical application software will continue to be fragmented, industry-oriented, and user based. (For more detail on this market structure see Rapp [1995]).

Thus, on the whole, there appears to be convergence in the strategic approach of the leading software users examined in the Sloan study, whether Japanese or American. More particularly, the cases confirm the intuitively obvious point that a necessary condition for a successful IT strategy is a coherent business strategy (Wold and Shriver 1993). (These and other summary results are presented in Rapp 1998 December and 1999 June.) It is these strategic links between business and technology objectives that are presented for NFS in this study.¹

¹ Acknowledgment: the case writer and research team want to express appreciation to the Alfred P Sloan Foundation for making this work possible, and to the Sloan industry centers for their invaluable assistance. Presentations from Wharton's financial services group at Sloan Industry Center meetings from 1997-99, as well as papers produced by that Center, along with a recommendation by Scudder Kemper International aided selection of NFS as a case study. We especially appreciate the guidance given by the financial center

Nationwide Financial Services Case Study

NFS can be described simply as a big leading American insurance firm providing asset management and retirement products to a variety of customers. But it has made use of those capabilities in very creative ways. Although the detailed strategy described here applies only to NFS and its particular customers and products, lessons can be learned from what it has done both strategically and in terms of using IT to support that strategy. Hence this study. (Box 4 provides a brief overview of NFS and Box 5 offers details on why it became a case for studying the use of IT to improve competitive advantage.)

Box 4 - A Situational Overview of Nationwide Financial Services (NFS)

Nationwide Financial Services (NFS) began as Nationwide Life Insurance and like many other life insurers it benefited in the 1980s from the rapid growth and popularity of universal life insurance. However, the dramatic changes occurring in financial services markets since that time have impacted it along with many other insurers. Today term life insurance is more popular as consumers have become increasingly reluctant to commit large amounts of capital to life insurance. Rather, many customers are interested in unbundling their financial services and diversifying their providers of various financial products. They may have their brokerage with one firm, their life insurance with another, their car insurance with a third, their homeowner's policy with a fourth, their checking account with a fifth, and their mortgage with a sixth. They may also have credit cards from some or all of these providers or with others. In response to this development in financial services, NFS has transformed itself into a focused and leading provider of retirement products of all kinds and especially annuities (Table 1). (NFS 1998 and 1999b).

It is clear from the Sloan studies that to achieve IT benefits that improve productivity and quality these firms uniformly look at their businesses and their strategic needs to drive the IT solutions they have selected. Thus their IT selections are made on the basis of an IT solution's ability to efficiently provide what a firm requires. Due to the perceived competitive benefits of their directly controlling IT's use in supporting their basic businesses and organizations, the companies examined in these studies limit their outsourcing to low technology, low priority tasks such as payroll.

Box 5 - Why a Study of NFS?

at Wharton and the shareholder services group at NFS. However, the views expressed in this case are those of the author and are not necessarily those of NFS, the Wharton Center, or their personnel.

NFS represents an excellent example of how a company can exploit a changing competitive environment by transforming itself from a provider of traditional products and services such as life insurance, to developing and providing products and services strategically tailored to the new environment such as annuities. A major reason for the popularity of universal life in the 1980s was that it combined a mutual fund option with life insurance. But now many clients would rather have those services provided separately, so they are just looking to life insurance for death protection. Term insurance is the simplest and cheapest way to do this, and therefore it is a highly competitive commodity product with no special marketing spin. One reason why U.S. life insurance in-force is going down is that many people no longer see life insurance as a good savings and investment product. In the case of universal life, the excess premium is invested. The increased price competition in traditional life insurance products has been lowering profits, too. NFS though demonstrates how a firm can creatively respond to such commoditization, increased competition, and lower profits in its traditional product and use IT to create competitive barriers to entry that will preserve its profitable advantage in its new areas of opportunity.

Further, because the ultimate impact of such controlled initiatives creates value through competitive barriers and long-term beneficial loops, the effect of this IT usage on company personnel is on balance more “upskilling” than “deskilling” of job functions (Hunter and Lafkas 1998). That is, it improves the quality, expertise, and range of various personnel functions. Indeed, it is by extending the capabilities of the firm and individual personnel that IT can enable and facilitate the production and delivery of customized, even individualized, products and services at mass or lean production costs and prices. This is a powerful strategic theme and a result that runs through the minds of many of the managers interviewed during the Sloan project.

Another important result is better time management through using IT to improve cycle times, time to market, and implementation by speeding the transfer and processing of information. At the same time, the focus on realizable goals and results shows why it is important to judge any IT initiative or system, including greater automation, by actual gains in quality or productivity, as opposed to automating at the cutting edge for its own sake. Thus, in addition to an overall strategic design, the leading IT users examined during the Sloan project maintain an attention to detail so that faster processing speeds do not confound correct implementation and better quality. These firms also illustrate how a

company can use IT to support quality management. This is accomplished by institutionalizing tacit knowledge and tracking detail in order to establish beneficial IT loops, with articulated goals and outcomes as part of a firm's IT utilization process. Nationwide Financial Services is a good example of this approach in action and shows that these principles can be found and equally well applied in leading service sector practitioners.

This is why, as part of understanding NFS' competitive situation, this study examines some of the industry trends, economic factors, and competitive dynamics affecting NFS' major markets, finance, and insurance. More particularly, it is because its major client groups are very diverse that NFS has developed expertise in related IT systems that it has used to solicit and support this business.² The business pressures on NFS emanating from developments in finance and insurance are fairly clear. They reflect the fact that the large client groups for its major product, annuities and other retirement products, account for almost 80% of NFS' group revenues.

Further, the study illustrates how NFS is pushed to develop IT that can extend and deepen its competitive advantage with all potential client channels. This is because growth in its clients' business base expand NFS' own profits. Thus, even though this task is complicated, in order to appreciate NFS' strategic purpose and its execution, we need to examine the main economic characteristics and competitive pressures of the U.S. financial services markets in terms of the expanded demand for retirement products. To keep this task in bounds, emphasis is placed on situations that, from NFS' perspective,

² Here and in the other parts of the Sloan study, "software", "information technology (IT)" and "systems" are used interchangeably. In addition, when referring to a firm as a whole, the text uses "it", but when referring to its management, "they" is used.

seem to have the most impact on its IT use to improve its competitive advantage and its own business strategies.

NFS Response to United States Life Insurance and Retirement Product Trends

Faced with the dynamic trend of a declining market and lower profits for life insurance due to consumers' demand shift, Nationwide saw the clear need to change and to partially reinvent itself in terms of image and products during the 1990s. This it has done successfully (Table 1). But unlike the road traveled by Meiji Life or Travelers Insurance (Rapp 1999a and 2000), NFS has not diversified and expanded to offer a full range of financial products to its customers throughout their lives. Rather, strategically it decided to specialize in a few selected financial products closely related to life insurance and focused on a particular fast-growing segment of consumers' demand for financial services, i.e. retirement products. These are annuities, variable life insurance, and defined contribution plans.

An important consideration in making this strategic selection was that these products on which NFS decided to concentrate depend on the same core competencies as life insurance in terms of actuarial and long-term investment expertise. There is thus the potential for an integrated and inter-related approach to both marketing and investment management in areas where NFS was already quite proficient.

Annuities are essentially reverse life insurance, with similar tax deferral and estate tax benefits. Variable life, however, allows the customer to shift the insurance coverage and benefits over his or her lifetime, as personal circumstances shift, such as, for example, the need for long-term care. Finally, 401(k) type plans can be rolled into annuities, IRA's, or other retirement vehicles that also depend on actuarial assumptions

and tax deferrals. While life insurance pays the face value of the policy at the time of death, annuities pay an annual income, usually beginning around 65, until death. Thus the investor cannot outlive his or her annuity. Similarly annuities or variable life can cover nursing home care in exchange for reducing the payment at time of death, while defined benefit plans can be borrowed against or converted to annuities to yield similar benefits. Therefore, as clients grow older these three financial vehicles are all good ways to provide for retirement income and potential expenses.

These products have thus captured the rapidly growing interest of baby boomers looking towards retirement. Indeed, annuities, both fixed and variable, along with variable life insurance and defined benefit plans have become the next generation of life insurance and retirement products, as they are riding the demographic trend and the increased interest in retirement and long-term care.

An additional driver for these retirement-related investment vehicles is the fact that many baby boomers do not consider Social Security and Medicare safe during their lifetimes. So they are looking for additional cash flow and retirement care protection at the least out-of-pocket cost. ERISA, related pension scandals, and the reduction in medical benefits for retirees have also had an impact. People now want their own pension and nursing care support that they control. Several tax benefits further encourage this development. Since the earnings these products generate are tax deferred, one does not pay any tax until there is an actual payout under the policy. Further, there are spousal or survivor benefits that escape estate taxes since the income stream and expense coverage stop at the death of the surviving spouse.

These products, thus, have the benefits of normal life insurance in that they provide spousal economic protection and capture tax sheltered investment benefits that build income. In addition, they also have the benefit of flexibility over time since one can mix and shift investment allocations to target a level of variable and fixed income options combined with expense coverage that is directly related to one's health situation.

Finally, at a time when people are expecting to live much longer, the primary beneficiary sees the benefit of these products in his or her lifetime through their regular income and expense support that does not depend on retiree's savings outlasting the retiree's life span. It is no wonder, then, that industry growth for these products has been explosive. Annual sales of annuities have gone from about \$10 billion in 1985 to over \$100 billion, or more than 10% of mutual fund flows, by 1998. Similarly, variable life grew as a percent of U.S. life insurance from 9% in 1992 to 34% in 1998, while whole life and universal life's share declined. And, during the same period, defined contribution plans increasingly replaced defined benefits as, 401(k) assets rose from \$500 billion to \$1.4 trillion, covering 700,000 plans and 50 million participants.

Further, the fastest growing part of the defined contribution market is small employers. In 1998 less than a third had such plans, while NFS expects 72% will have them by 2002. These trends favor Nationwide's ability to track and manage a large number of small accounts with few participants. It has done this successfully for local governments, both directly and through its plan administrator network. That is, it is using brokers and banks as well as its own sales force to market pension sales.

Over the last few years Nationwide Financial Services has actually become the star in marketing annuities and variable life in all U.S. market segments through all

channels. It markets successfully by showing how annuity products and variable life can be used in estate and death planning on a tax deferred basis.³ It has also staked out an important segment in defined benefit plans, and local public employees. NFS sees a future area of opportunity in small employers who can accessed through the same broad, multi-channel distribution approach it is using for annuities and variable life. That is, in the case of annuities and variable life, NFS currently uses a multifaceted, multi-channel marketing approach that employs direct agents, broker dealers, financial planners, banks, and websites, and heavily relies on IT to keep costs low and to provide superior service and returns to customers and intermediaries.

NFS' IT Strategy and Industry Economics

This approach has given NFS a core competency in efficiently and profitably managing the small plans with few participants and low value accounts that have frustrated many providers in approaching the small employer market. (See footnote 3.) At the same time NFS' offerings have filled an important product gap and provided a solution for financial service providers that do not have the scale or expertise to create their own such products. Success with these providers, in turn, provides NFS the scale that facilitates more sales to these high growth market segments. Indeed, it was through this process of becoming a leading provider of these "retirement products", and specializing in such products, and not life insurance, that Nationwide became NFS

³ In 1999 NFS was the 3d largest provider of individual variable annuities in the U.S. and had risen to number 5 in variable life from number 10 just two years before. Further indicating its successful multi-channel approach to variable annuities is the fact that it is the number one supplier through independent financial planning firms and 2d through banks. Yet NFS sees the future market for retirement products as huge and growing quickly. Over the next 5-15 years, it sees pre-retirees as controlling \$9 trillion in pension assets. This is a market it is well equipped to serve as it currently administers over 17,000 pension plans, and ranks 3d among all U.S. 401(k) providers. As part of its service capability through its IT support, NFS can provide daily account valuations and statements. It can also do this on a private label basis, on behalf of its multi-channel outlets such as securities firms and banks.

instead of Nationwide Life Insurance. Yet many important management issues remain the same.

For example, a key issue for firms selling life insurance and related products is controlling the underwriting cycle. The object is to minimize the time span from when an agent or intermediary calls, the policy is issued and the premium is paid. The ultimate goal is to have the agent come and sell the policy, issue it on the spot, and get the check or balance transfer immediately.

The second large strategic issue is policy longevity or how long policies remain in force as this directly impacts the investable cash flows and the stability of the firm's investment portfolio. The third strategic issue is the expense ratio, or how much one has to spend to originate and administer a policy, which is a measure of marketing and office efficiency.

It is in these three areas as well as marketing and sales that Nationwide has been at the forefront in using IT to enhance its core competencies and to achieve specific corporate goals in terms of costs, productivity, and product quality. At the same time, it has benefited competitively from the fact that most life insurers have not pushed as aggressively as it has into annuities, and that competitors have been relatively backward in seeing the multiple strategic advantages of IT to their business. For these reasons NFS has been able to enhance the firm's performance it has reaped the benefits of spread and fee-based earnings in addition to the mortality-based earnings of a life insurer.

Similarly it has benefited from the fact that life insurers have lagged in the aggressive use of IT to deliver products in comparison to other U.S. financial services providers, such as banking and securities firms. The latter have been pushed by various

competitors in areas such as trading, on-line banking, and asset management. This is, perhaps, due to those industries having one national system, versus insurance where there are 50 states and 50 different systems. In any case, compared to banking and securities, the insurance industry is generally behind in using technology. In addition, the number of pieces of paper insurance firms must process and manage is huge, so document inventory has been a large cost.

Putting this data onto computers would thus appear to be a logical management solution. Yet, in the early 1980s many insurers were only using microfiche to store documents more efficiently, and had still not moved to computers. Thus there is continued reliance on paper and moving paper, which is why some firms can take one to three weeks to complete the underwriting cycle for life insurance. Compare this to mortgages applied for on-line, where the application to approval time is less than 24 hours.

Because the underwriting cycle has not made as much progress in terms of efficiency, especially when a physical examination is required, most life insurance companies during the 1990s focused on expenses, squeezing costs and controlling accounts in terms of size. These costs usually breakdown into administration, back office, and selling/marketing, with firms focusing technology mostly on the first two items to build scale in using their computers. The use of marketing techniques that might give agents the technical tools with which they can educate consumers on choices in life insurance, is just starting.

Interestingly, car insurance is more advanced in this regard, and AllState has had a database related to automobiles for some time that all the firms utilize. Further, several

auto insurers are starting to use technology to enhance product offerings. So a customer can now use the phone and the Internet to get a policy with various options with the cost given instantly. But, the application of similar techniques to life insurance, using a multi-channel sales force and mass merchandising techniques, has lagged. This is despite the fact that a multi-channel approach works better and helps achieve the scale firms need when consumers are very price sensitive.

One constraint on this process has been that most retail life insurance in the U.S. is still sold through independent agents and account size is often relatively small. But the agents are the ones that can directly ask the clients questions, explore different options and arrange or do medical exams. The latter is of course a key component in lengthening the life insurance underwriting cycle since the extent of the medical exam is directly related to the size of the policy. On the other hand, larger policies pay larger premiums, are more cost effective, and are more profitable. The agents can also influence choice and consumption trends. However, replacing the independent agent with an agency sales force to gain more control is a heavy expense. Nationwide's strategic insight with respect to marketing annuities and other retirement products such as defined benefit plans, is that such products bypass many of these problems.⁴

Because annuities pay clients benefits until they die, there is no moral hazard or adverse selection problem. People who know they are sick will not apply as disproportionately for annuities as they might for life insurance. Therefore, medical exams are not required. This feature greatly collapses the underwriting cycle. Also, it means the product can be sold through multiple channels, including banks and broker

dealers, in addition to agents because direct contact with an agent is not required. At the same time cost and return then become the critical variables.

It is in this respect that NFS has expertly used IT to reduce costs, increase returns, and improve product quality. That is NFS is highly centered on technology both in terms of running an efficient organization and as a sales and investment tool. It is therefore using IT both to enhance revenue and reduce costs as the way to become a low-cost efficient provider that can give value. This, as explained above, is the key to achieving a competitive advantage. This approach applies equally well to its initiative with 401(k) type plans oriented towards small companies and local governments that can be wholesaled to such employers (footnote 3). All these products are data tracking intensive requiring active management and record keeping for many small accounts, and operating in a complex legal and tax advantaged environment. At the same time the database generated through its defined benefit plans helps NFS to market its closely related retirement products, annuities and variable life insurance, to the same clients.⁵ This situation exactly illustrates the dual strategy theme pursued by many firms examined during the Sloan study; that is, the use of IT to achieve a business advantage through pursuing revenue enhancement and cost containment simultaneously. For NFS this contrasts with the cost containment approach noted earlier for most U.S. life insurers.

Furthermore, by developing a leading edge in a few specialized high growth products and offering them through a wide range of channels, NFS can gain share and

⁴ Defined benefit plans include 401(k) plans for corporations, 457 and 401(a) plans for public employees, and 403(b) plans for education and healthcare employees. With a 20% market share, 7000 plans under management, and 1 million customers, NFS is #1 in providing such plans to local public employees.

⁵ NFS sees the benefits of variable life over other policies as follows: Diversified Investment using multiple money manager approach; tax deferred compounding and fund transfers; fixed account with guaranteed return; no withdrawal penalties before 59.5 years if circumstances change; policy loans; guaranteed minimum death benefit tax free (NFS 1999a).

scale. It does this by getting less diversified providers as well as individual insurance agents and financial planners to offer its products directly or on a private label basis. This is because these providers do not see NFS as a competitor that will steal their clients. Yet, these intermediaries need to offer their clients these products in order to prevent clients from migrating to the large integrated providers, such as resulted from the Travelers-Citibank merger (Rapp 2000). For this strategy to succeed, however, Nationwide's product, delivery, and after-sales service must be low cost, effective, and high quality, even for smaller accounts.

The current CEO, Mr. Gasper, is committed to this approach having had both a product and operations background. He knows that otherwise NFS' products will not be profitable for independent agents, banks and securities firms to promote. The reputations of these intermediaries will suffer if their clients do not feel that their needs are being met. Thus to be a good, non-threatening partner, NFS must be committed to its high quality, low cost outcome. In this way are NFS' interests are aligned with its distribution channels and the final customer.

Having committed itself organizationally and strategically to this orientation, Nationwide sees computers as a support tool for its related sales, operations, and investment policies. Indeed, because NFS is targeting the individual, consumer product flexibility and personal customization are critical marketing concepts for NFS' ultimate commercial success. NFS thus uses IT to provide features that allow customers to tailor their own retirement solutions and to make adjustments as their life circumstances change.

Such customization at mass produced costs is another repeated IT strategy theme throughout the various Sloan cases (Rapp 1999). To really achieve this in a personalized manner, though, NFS provides detailed IT support to its agents and third party intermediaries on how to market this flexibility. NFS also provides them direct access to the NFS website for sales and after-sales support. The objective is to provide agents with factual marketing information on the target enrollment group, such as, for example, potential financial requirements in retirement given life expectancies.

Unlike Meiji Life (Rapp 1999a), over 70 percent of NFS' sales of individual retirement products is through independent broker-dealers, independent property and casualty agents, banks, financial planners, and other financial intermediaries, rather than life insurance specialists that the company either owns or has bought. This situation potentially creates a difficult sales and servicing mix, since, to maximize market share, NFS wants to push its limited product offerings through a broad array of sales channels and, therefore, cannot favor its owned agents over the independents or the latter will migrate to other providers.

At the same time, it wants to tie its support services and marketing tools as closely to NFS as possible so that the independent channels cannot easily substitute other companies' products using Nationwide's marketing concepts. Since it does not want to help competitors, this affects the content of the IT support materials NFS provides. Nationwide therefore supplies IT materials that are closely tailored and fitted to its products. The strategy is not to use IT to reach agents, but rather, to work with the agents to make it easier and more productive for them to sell Nationwide's products in

comparison to those of other providers. This rationale defines the terms of its strategic and IT relationship with the agents.

Since an important part of its strategy is to focus on a narrow, well-defined product range, NFS has also tried to establish a branded recognition for its products. It then supports these as low cost but high return products. These goals are actually interactive objectives since low cost means administration eats up less earnings, and NFS can then allocate more of the premiums it receives to investment, thereby improving returns. NFS has also developed an investment strategy that tends to achieve higher returns and more client flexibility at lower cost, while discouraging unbundling by its clients or emulation by its competitors.

Breaking investments broadly into equities and fixed income, NFS offers a range of equity fund options by 14 leading fund managers, including Janus and Fidelity. (See box 6 for a description of the multi-manager approach.) Janus, in particular, in recent years has had the hottest selling funds in the U.S., and several are now closed to new investment. Since the funds offered by NFS are restricted to Nationwide's annuity and variable life products, this approach discourages client unbundling or competitive emulation.

Box 6 – NFS' Multi-manager Asset Management Approach and its IT Support

“Nationwide was the first insurance company to offer a multiple manager approach to variable annuities nearly 25 years ago.” Building on this existing core competency, at the end of 1999 its equity managers were Janus, Fidelity, JP Morgan, Strong, Salomon Smith Barney, Neuberger-Berman, American Century, Dreyfus, Federated, Morgan Stanley Dean Witter, Oppenheimer, Van Eck, Van Kampen and Warburg Pincus. They manage a range of funds to which Nationwide's clients can allocate and shift contributions. This creates a unique customized account for each client and a set of accounts for each provider. Further, about 40% of its annuities are offered through payroll deduction via employer sponsored plans. To support these multiple channel relationships (2000 producer firms and 50,000 producers) and 3.6 million customers, 24 hours a day - 7 days a week, NFS has nine administrative systems, over 250 supporting systems, over 1100 internal/external interfaces, 2000 service employees, ten service centers, and four sales support centers. It is currently automating new business processing. In the future it expects to extend this interface to include voice recognition and broader electronic transaction capability. It also expects to introduce electronic reporting of customer accounts on an integrated basis that might also include voice interactive training and education. Part of this will require an integrated data warehouse using common formats.

Thus it is a win-win situation for NFS and the outside managers, while NFS is effectively leveraging the investment expertise, name recognition, and software of these managers. However, NFS does use IT to continually track and compare their relative performance to their peers. This is an important aspect of Nationwide's integrated marketing and product strategy since the concept behind the "Best of America" brand is that these managers are in fact the best performers. NFS must, therefore, constantly and continuously measure and confirm this fact.

In fixed income investments, an area where insurance companies such as Nationwide are traditionally strong, NFS is additionally using IT to profile private placement credits and manage mortgage-backed securities (MBS). In its fixed income investment strategy it emphasizes mortgage-backed securities and private placements because they traditionally offer higher yields than a bond portfolio. Investing in such instruments is facilitated by the fact that annuities have a longer and more gradual payout than life insurance. At the same time, credit issues and refinancing of the underlying mortgages can create problems for such a portfolio. To analyze and manage these risks, Nationwide has developed IT models that help it reduce the potential credit risks and cash flow fluctuations from these investments, while still capturing their more attractive yields.⁶ When such higher yields are combined with NFS' low costs (for example, its fees of about 95 basis points for an annuity with a diversified portfolio run about half a normal mutual fund), this increases spreads. This gives NFS' products a total yield boost that appeals to both consumers and its sales channels.

⁶ In mortgage-backed securities (MBS) this is done primarily by investing in the less volatile planned amortization classes.

This happens because relatively small differences in administrative costs and investment returns can mean significant improvements in the final annuity payments when compounded over twenty or thirty years. At the same time, because the clients can mix fixed income options with the equity options provided by the 14 outside fund managers, NFS has avoided the generally negative impact that a hot stock market has had on interest in life insurance as an investment vehicle. Clients, in turn, have investment options. They can shift allocations between fixed and variable and between equities and fixed income over the life of the annuity or their other retirement products, tax-free. This is how NFS appeals to customers that see variable annuities, variable life, and defined contribution plans as ways to combine and mix variable and fixed options to achieve an income later in life, rather than building savings and assets.

So, though its clients are looking for better yields and a better future payout, they are also often risk averse in their product selection since they are targeting a long-term, future income stream. This is particularly true in terms of annuities, where individuals are frequently looking for more income certainty in their retirement years, so that some fixed income assets seem to have an appeal. This is why the firm uses IT to enhance its returns and expertise in this area. In addition, as a further appeal to its client's natural concerns about future uncertainties, the company offers a guaranteed minimum return even if a customer selects an all equity option.

This means the client cannot lose the principle invested, and will get appreciation even if stocks do not perform over a certain period. These various return options that can be individualized are supplied to the agents as part of Nationwide's sales and planning tools. In this way it offers a mixed approach to using IT for marketing and investment

support that enhances its own expertise, when that adds value. However, it uses outside expertise when that is perceived as offering a superior outcome. In all cases the focus is on the customer, and on delivering a quality tailored product at a low cost. This is a common theme for many of the successful IT practitioners examined during the Sloan study.

Nationwide's annuity's brand is "Best of America", a name which it takes seriously, and one can access it on the web for more information or purchase at Best of America.com. While its leadership product is variable annuities, with even its fixed annuities mostly an option under its variable annuity program, it has also revamped its variable life policy and defined contribution plans to make them more attractive. So life insurance in force is about \$28 billion universal and \$23 billion corporate/variable, while they have over \$20 billion under management in defined contribution plans.

IT is used to track the numerous related accounts electronically and to maintain a paperless relationship with the agents, thus keeping costs low and better controlling the intermediary relationship. NFS also uses this channel to transmit product information directly to the agents or corporate plan sponsors as well as to correspond, giving it better control. Paper reduction is a key objective. In this regard, NFS still gives the customer hard copy, but, for itself, it produces this documents electronically. Further, if the agent or company needs to access the document, this is done electronically as well.

Thus, paper is only a record for the customer. In sum, computer access for the agent and the customers is the tool with which NFS can reduce paper, paper-storage, and data access costs. NFS has thus organized itself to scan any paper it receives from a broker, and then put it on-screen. It also scans the electronic signature. NFS then has the

document stored electronically so that it can print it when copies are actually needed. Therefore unlike many life insurance competitors Nationwide has low cost storage and easy access that it can redistribute very efficiently to agents or plan sponsors. Its new business is thus all electronically stored, and it is moving to put all its records on this basis too.

This IT intensive approach has become even more important as NFS has turned more and more to the broker-wholesale distribution channel as a way to broaden and diversify delivery. These firms do not want to be burdened with paper either, but they do need easy document access to respond to customer questions and inquiries. The process is thus a beneficial IT loop that increases distribution and lowers costs. That is, because agents and sponsors find it easy to deal electronically with Nationwide, they promote its plans, increasing scale and spreading systems costs over more users. This lowers costs and increases returns, making Nationwide's products financially more attractive and increasing customer acceptance as well.

To further promote ease-of-use and marketing, NFS also provides wholesalers a continuing education course on its retirement products which is formatted on a CD. If they complete the course, they receive 1/2 a credit towards maintaining their license as insurance brokers. This is another incentive to learn about Nationwide products. NFS also provides the brokers with CDs that contain sales ideas and that can be used for a laptop presentation to clients or intermediaries on the benefits of Nationwide's retirement products. These CDs are product and company specific, even featuring talks by NFS executives. They also provide direct access to Nationwide's website, both to get more information as well as to access or establish an account. This approach helps to address

Nationwide's strategic problem of giving product and idea support to its independent agents and third-party providers, without making it easy to pass along those ideas to a competitor.

These materials, while giving ideas about future retirement requirements under various scenarios, are not part of a comprehensive life plan model, however, such as that promoted by Meiji Life or Citibank (Rapp 1999a and 2000). Yet, in the context of planning for future financial requirements and particularly retirement, these marketing materials do indicate that annuities should be included as part of an individual's asset allocation and the customer can access this perspective on-line or via their own interactive CD. Further, NFS uses this approach to add new, but closely related, products or features, such as its recent promotion on-line of a retirement product sales idea on how to use the charitable remainder trust that many charities and universities are promoting for individual retirement planning.

NFS tries to keep its ideas and presentations simple. Its experience has been that marketing complex financial products is usually not successful. It requires a lot of expensive hand holding, an outcome which runs against Nationwide's tailored but low cost product strategy. Perhaps firms such as Meiji, with a large captive sales force, can provide this (Rapp 1999a). However, it does not work well in the multi-channel market via third party intermediaries that supports the NFS strategy. Therefore, Nationwide's approach to using IT has been to reduce costs by having the agents use their laptops and other PCs for product marketing, policy issuance, and account maintenance

Summary – Using IT to Create Unique Firm Advantages

In sum, the NFS approach has not been to produce an integrated financial planning model, but rather to leverage its products by creating flexible products that can fit the models and plans of its clients or their advisors, thus directly linking its systems and strategy with theirs. In this manner Nationwide illustrates a fundamental IT management touchstone of how to *use IT to create a competitive barrier that adds real net value* by recognizing this strategic principle as an important company goal. Given this view, it has been easy for Nationwide to reject the idea followed by many other large life insurance companies. Other companies believe that IT systems are generic products, best developed by outside vendors because they can achieve low cost through scale or can afford to invest in the latest technologies. Once this fact is recognized it is then possible to move in a direction where IT will help the firm to achieve solutions that are not possible otherwise. These include using large data bases to manage marketing and product support or embedding software that adds product functions such as easily switching asset allocations within an account.

Because these strategies are operationally and strategically user-driven, Nationwide has also avoided EDP heritages, where the IT-purchase decisions are made for the convenience of EDP specialists. Instead, Nationwide selects its IT systems because they are the most suitable for the business, based on the requests from corporate users whose orders and budget drive IT development and its application. This requires the firm's IT groups to make sure that the IT ultimately selected for a given task is compatible with and works within the company's and its clients overall systems. This is how Nationwide is successfully employing complex IT systems to achieve its wider corporate objectives.

APPENDIX I - SOME FIRM DATA

Table 1: Nationwide Financial Services' Business Activity 1998

	(\$ billions)	Change
Premiums & Deposits	12.8	24%
Revenues	2.5	12%
Net Income	0.3	25%
Total Assets (Annuities)	74.7 (62.8)	25%
Return on Equity	15.8%	

Source: Nationwide

BIBLIOGRAPHY AND REFERENCES

- Abegglen, James and Richard Stalk, Kaisha, Basic Books, NY, 1985.
- Cusumano, Michael A., Japan's Software Factories: A Challenge to U.S. Management, Oxford University Press, NY, 1991.
- Easton, George S. and Sherry L. Jarrell, "Using Strategic Quality Planning More Effectively: Lessons Learned from NSF Project Research," presentation at Columbia Business School Conference on Quality, NY, September 1997.
- Evans, Philip and Thomas Wurster, Blown to Bits: How the New Economics of Information Transforms Strategy, Harvard Business School Press, Boston, 1999.
- Gurley, J. William, "Creating a Great E-Commerce Business," Fortune, NY, March 1998.
- Harker, Patrick T., "High-Performance Workplaces in Services: The Case of Retail Banking," presentation, Wharton, 1997.
- Hunter, Larry W. and John J. Lafkas, "Information Technology, Work Practices, and Wages," Working Paper 98-02, Wharton, Financial Institutions Center, 1998.
- Imai, M., Kaizen: The Key to Japanese Competitiveness Success, Random House Business Division, NY, 1986.
- Krawcheck, Sallie, and Mary Medler, "Cross-Currents in the Global Securities and Asset Management Business," Bernstein Research, New York, 1998.
- Marano, Rick and Matthew Coyle, "Nationwide Life Insurance Company/Nationwide Life & Annuity Insurance Company," Standard & Poor's Insurance Rating Analysis, New York, 1998.
- Nationwide Financial Services, "Form 10-K," Securities and Exchange Commission, Washington, D.C., 1998.
- Nationwide Financial Services, "Form 10-Q," Securities and Exchange Commission, Washington, D.C., 1999.

Nationwide Financial Services, “Product Highlights America’s Future Annuity,” Columbus, Ohio, 1999a.

Nationwide Financial Services, 1998 Annual Report, Columbus, Ohio, 1999b.

Nationwide Financial, “1999 Investor Conference,” NFS, New York, 1999c.

Nelson, Richard and Sidney Winter, An Evolutionary Theory of Economic Change, Cambridge, MA, Harvard University Press, 1982.

Rapp, William, The Future Evolution of Japanese-US Competition in Software: Policy Challenges and Strategic Prospects, Final Report Japan-US Friendship Commission, Columbia University, NY, 1995.

Rapp, William V., “Gaining and Sustaining Long-term Advantage Through Information Technology: The Emergence of Controlled Production,” Center on Japanese Economy and Business Working Paper, Columbia, NY, 1998.

Rapp, William V., “Gaining and Sustaining Long-term Advantage Using Information Technology: Emergence of Controlled Production,” Best Papers Proceedings, Association of Japanese Business Studies, Salt Lake City, UT, 1999.

Rapp, William V., “International Retail Banking: The Citibank Group - Gaining and Sustaining Long-term Advantage Through Information Technology,” Working Paper Center on Japanese Economy and Business for Columbia Sloan Foundation Project, NY, 2000.

Rapp, William V., “Life Insurance: Meiji Life – Gaining and Sustaining Long-term Advantage Through Information Technology,” Working Paper, Center on Japanese Economy and Business for Columbia Sloan Foundation Project, NY, 1999a.

Rosenberg, N., Exploring the Black Box, Cambridge, NY, 1994.

Wold and Shriver, Strategic Systems Planning for Financial Institutions, Probus, Chicago, 1993.