

STRATEGIC PLANNING AND INFORMATION MANAGEMENT

PROCEEDINGS
OF THE
FOURTEENTH ANNUAL CONFERENCE
OF
The Society For Information Management
(formerly SMIS)

September 20-23, 1982



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**MARRIOTT HOTEL
CHICAGO, ILLINOIS**



THE SOCIETY FOR INFORMATION MANAGEMENT

SIM

The Society for Information Management (formerly SMIS) was formed in 1969 by a group of executives, information systems professionals, and academicians. Any non-member interested in the goals and work of the society or desirous of joining, please write to:

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TABLE OF CONTENTS

Keynote Address: Corporate Planning and the Linkage with Information Management John Diebold	1
Strategic Planning For Information Management	
Strategic Planning for MIS Ephraim R. McLean	9
Current Uses of the Critical Success Factors Process John F. Rockart	17
Strategic Planning for Information Management John A. Zachman	25
Assessing the Economy for Planning Purposes Roy E. Moor	35
Hardware Planning: Accommodating Change and Anticipating the Future Greg Williams	41
Software Planning: The Limits of Programming Productivity Practical Productivity Improvement Through Quality Assurance T. Capers Jones and Wayne Smith	51
Building Telecommunications Strategy William T. Rush, Jr.	69
The Need for Active Systems in the Factory of the Future Mark Fox	81
A Planning Perspective on Data Base Management Systems Edgar H. Sibley	89
Centralization and Decentralization: Key Issues Revisited Robert Laskey	101
Summary Session: Making the Linkage Work . . . Strategic Information Management Planning In The Real World	
Data Processing Planning Within the Corporate Structure Ray Cairns	117
Corporation Strategic Planning for Information Services Edward A. Schefer	123
Strategic Planning for Information Systems Robert I. Benjamin	131
Information Management and the Business Strategic Plan Michael S. Scott Morton	135
Workshop II: Planning To Plan Dennis Thurman	143

CORPORATE PLANNING AND THE LINKAGE WITH INFORMATION MANAGEMENT

John Diebold
Chairman
Diebold Group, Inc.

The introduction reminds me of the only speech I ever heard in my life, having listened to a lot of speeches, that I remember. The Institute for Strategic Studies was meeting in the Northern part of Canada and the opening night there were to be two speeches after dinner by Lester Pearson and another man, and Lester's plane was late. The reception was held, then the dinner and finally, Lester Pearson got up to give the first speech and he said, "According to the program if my speech were to end now, we would be on time. It has and we are."

It is a very great pleasure to be here. When I worked in Chicago thirty years ago, I had a basement apartment a few blocks from here on Cedar Street where I wrote my first book. It was a very productive period, and I feel very much at home here.

During the 70's, inflation affected all of our lives in a lot of different ways. One of the ways in which it affected our lives was in the English language. And one of the words that has been affected by inflation is "strategic," particularly the term strategic planning. I think that it's a grand word and a grand concept, but it's misapplied very extensively and I tend to try to be very careful in doing as little violence as possible to the English language.

It seems to me that there are three aspects of strategic planning in relation to the information systems function and I'll comment a little bit on each of these. The three aspects seem to me to be, first, strategic planning of

the Electronic Data Processing (EDP) activity itself. Secondly, EDP as a support activity, and increasingly as an integral part of corporate and divisional strategic planning. There are many cases where I think the term strategic can be properly applied to divisional planning. Third, EDP as an active agent in corporate change and in changing the parameters of competition. I think that this is an increasingly key element in terms of the business scene, and I think it's the most interesting of the three.

My talking about strategic planning of the EDP activity to a group of managers of EDP activities reminds me of the old story about St. Peter's advice to the new man in heaven, who, when told by St. Peter that all the new people each evening gave a brief account of themselves after dinner to the assembled group in heaven, said he'd have no trouble whatsoever. He then recounted to St. Peter stories about the Johnstown flood through which he had lived. This went on for half-an-hour until finally St. Peter was able to get in his first word edgewise and he said, "That's a perfectly fine anecdote and we do want people to talk about the most interesting and important experience in their lives, but I've one word of advice for you." The man said, "Well, what is that?" He said, "Just remember that Noah will be in the audience." I know there are a lot of Noahs in this audience, and I just want to let you know that I'm aware of that in making these comments on EDP strategic development, which is a powerful driving force of this whole field with the business mission markets, consumer interests, consumer needs and the

entrepreneurial aspects. It's that match—on the one hand, the techno-economic developments and the motive power of the field,—and on the other hand, matching it to the question of the market, the customer, needs. Those have to be the essential elements for strategic planning of the EDP function in a business. I think EDP is still thought of as a support function and in many cases, that's correct. But in an increasing number of cases, EDP has become a line function. It's a prime operating part of the business, and in many businesses today, I think, probably starting with the SABER system of American Airlines, but including certainly airlines, hotels, the financial field, and increasingly publishing and others which I'll get to in the third area of my talk. The EDP activity is not only a support function of general management, it's a key function of the operation of the business and it's inconceivable to think of the business operating competitively other than with EDP really being an essential part of the line operation. I think this is a very important realization, and it's been changing, but it is certainly going in that direction in more and more fields and I'll comment on those in the last category. It materially affects the planning of the EDP activity itself.

Obviously, the largest identifiable phenomena at the present time is this massive decentralization that's going on, driven by the techno-economic aspects of the field. As data processing managers you used to be wholesalers, now you're becoming retailers. That is a substantial difference in how you think about your function. You used to have a small number of customers within the corporation addressing your large multi-divisional corporations. You are beginning to find, I'm sure, that you're starting to have very large numbers of customers within the organization and again, you're going from being wholesalers to being retailers. This is a very big difference in the entire concept, the way of operating, the methods of setting up the controls and the methods of approach to this area. It's a material change in your own function.

I think that you should also think about the fact that at the many hundreds and in many of the cases, thousands of points now within large organizations where people are beginning to operate their own systems, and to buy their own systems and to use them, there are two levels of problems. The one level is the one you're dealing with every day in those cases,

where the standards, the policies that you set up while you had a well controlled corporate EDP function start to get pretty skimpy treatment, for example, in terms of the way in which purchase decisions are made. Whether or not full life-cycle costing is or isn't used, just how skimpy the initial analyses are, all this is compounded as you buy programs from the outside and you begin to have modifications all over the place. You begin to have different concepts of security and of data privacy. These are the obvious problems you're dealing with in that kind of a shift to massive decentralization.

But I think you may also have a longer term problem, and that is that the demand that's being built up in these areas is inevitably going to outgrow the systems and they're going to end up expecting and demanding on a much greater scale, the kind of corporate support and major divisional support that you provided in the past. It's going to develop into a big ground swell toward the end of this decade. And that is an issue that must be faced. From all the studies we've done—when I talk about any of our own studies, they are for Fortune 500 companies, and in the larger part of those—the planning and certainly anything that could be thought of as strategic planning in the EDP function is pretty thin. Several separate studies of the last several years have indicated that today something on the order of two-thirds of the Fortune 500 companies published EDP Plans within the corporation. I'm talking now about things other than obvious budgets. But only really in about a quarter of that two-thirds do the plans exceed the actual backlog. This isn't how it's stated by the managers, but when you correlate the data on their backlog and the plan data and the timing, it more or less comes out that there's only about a quarter of the two-thirds that really have published plans in this area that really are going beyond the backlog. Something like thirty percent of the two-thirds have anything in the area of four to five-year planning. Of course, there's always the problem of time scale, what kind of time perspective you want to apply. I think a lot of people have felt this in going from monthly reports with on-line systems with one crises to daily reports and daily crises—you get very different time perspectives. I was having dinner in Italy not so long ago at the home of the head of a large bank. He lived in a magnificent Renaissance palace with great marble statues and magnificent art. I got carried away and said, "Prince, has your family always lived in this house?" "No, No," he replied, "only since the 16th

century." Well, that's one time scale. There's a story of two men who owned a chemical company. Over the years they had heard the DuPont ads on the power of research, and finally they decided that even though they had a very good monopoly in their particular specialty, they nonetheless would do some basic research, so they scoured the world for the leading scientist in their field. They found him and they built a laboratory and the scientist started to work one Monday morning. At coffee time, one partner went into the other partner's office and said "Don't you think we ought to go down and see what he's doing?" The other partner gave him a very stern lecture and said, "You know, for years we've planned this. It's long-term basic research. We'll see him at lunch." Well, we're between the 16th century and lunch. And in thinking about strategy and using the term strategic planning of EDP, you have to make your own decision as to what a proper time perspective is in your particular industry.

The major forces that seem to me to be at play at the moment, in thinking about strategic plans for the EDP function, include three developments that are increasingly falling into the province of EDP, and that have in each of the three cases, a quite different status of planning. Telecommunications—there the surveys we've done of the very large companies really are surprising in that only thirty percent have written plans concerning the telecommunications function up to five years ahead. Just a little over seven percent have more than five years and in a very large number, it's really been done on a hand-to-mouth basis. And again these are big companies.

The telecommunications function increasingly is your own responsibility and now has a different time horizon and yet it's becoming as you all know inseparable from the EDP function. I think that that is a big development in thinking about a strategy for EDP. Second is the question of manufacturing information and control systems. Here again, that whole development is something I think you know you need to stay close to, and that your aspect of it is going to be a crucial one. It's going to be a key element in any kind of EDP strategy for a manufacturing enterprise. And the third is the obvious one, and that is office automation. We've done a lot of work in this field and generally the activities tend to be terribly understaffed in the large companies, but again there are exceptions. Everything I'm

saying obviously has exceptions, but I think they're understaffed because the whole concept of office automation got off to the start in many companies of being a clerical replacement function with the thought that the economies were in that area. The assignments of responsibility tend to be quite low and the staffing patterns tend to be very junior, but the real payoff in office automation is the support function to middle management, as well as technical engineering and scientific work in the middle. This is where the real value of office automation lies. Just as you can spend a lot of time initially in putting payroll on computers, you can spend a great deal of time trying to put the Chairman's work onto office automation, or trying to put the Clerk's work onto office automation, or the secretary's, and running into a lot of flack for a marginal, discernible gain. When you think about EDP strategy, you can't think about it without thinking about all three of these points if you're in manufacturing. If you're not in manufacturing, the two of them, communications and the office automation.

Other changes seem to me to be going on as far as EDP management is concerned. You're obviously progressing from operating computer factories, to setting policies, setting plans and operating an educational function. I think this is a big transition that is going on and it's at different stages in different companies and requires quite a different approach to planning, depending upon where your own company is in that regard. In those companies where the EDP management actually does strategic planning, it tends to be terribly lightly staffed. Often it is somebody who has that responsibility plus other responsibilities, and there are few companies where there is any kind of sizable staff doing strategy planning for the EDP function reporting to the EDP manager. What I'm saying is that as that builds up as it inevitably will, one of the problems you will face is a big shift in training and education to the user today. Again, our surveys on the expenditures in the training area tend to have only a few percentages, some three or four percent of the EDP budget last year—in large companies, going into the customer training. This is going to shift materially and it becomes a big shift in your own focus of attention in the training of the end users within the company. The problem of getting an understanding within the corporation of information as a resource is a big hurdle to get over, an inevitable one. I think. It is something that is clearly true and depending

if the function has changed to a line function in those businesses, there's much more recognition of it than there is in those businesses where that has not yet happened. It is a major task to get an understanding of information being a resource and then of being able to establish the policies that are needed for handling it.

I think another factor building up is the time bombs from the reprogramming and systems replacement costs in many companies. The perfectly sound business of writing off the cost on the current expense basis which I've always endorsed, nonetheless leads to a situation where there are hundreds-of-millions of dollars in the case of a number of our clients which are invested in obsolete systems. A strategy issue, and the question, is how to go about the accounting function, and whether you should have a separate analytical structure to bring this home to senior management and to finance management. Again, while some companies are very clear on this, for others it's a problem which nobody wants to face, particularly in today's business environment. In some of these cases, you rapidly find yourself back under the conditions that I used to find in the early years of this field, twenty-five or thirty years ago when people first began applying computers. I always used to say that the financial analysis of early computer application was very much like Damon Runyon's character, Harry the Horse. Each day, on his way to the race track, Harry the Horse would say, "I hope I break even today, I need the money!" That characterized a lot of the initial cost analysis in computers and I suspect that at the moment in some of these large-scale systems, these types of proposals are going to end up being increasingly the case.

Another factor is that more and more, there will be a demand on the information system in a company for data dealing with socio-political developments and for data dealing with non-financial, non-operating developments. At the end of this year, we are publishing the results of a several-year, very large-scale project done for twenty of the largest companies in the country concerning the impact of socio-political change on corporate strategy and the question of the myriad demands on corporations, of changes in attitudes toward business and attitudes towards work, attitudes toward governance in regulations and in laws that impact the operations of business in these areas. These developments are increasing materially. They seem to have had a lull

the last two years because of the deregulatory efforts of the Reagan Administration, but in actual statistics they are continuing to increase, and the information support requirements in this area are one place where EDP can play a very useful role in a business. There was a news item recently about a defect in one run of metal produced by one of the reactor suppliers. Nobody knows into whose reactor it has gone and it's causing an absolutely horrendous manual commitment to review plans for every reactor that is in construction in the country today. In each case, a whole team working three to four months just going through the data to try to find which batch happened to be the one that was misrecorded in the steel plant. Those of you from drug companies are probably far along in this. We have done a lot of advanced work on systems for responding in the regulatory process in drugs, and this is a very big demand area which will get larger. It's an important element to think about in terms of non-financial, non-normal operating data in a company, and it is a key EDP factor. It also will have an effect on how you organize your own shops. And last but by no means least, because most important is this engine underneath of the techno-economic developments and the voice systems. We do a great deal of planning work for all the major suppliers in the world; all the key ones in this country, AT&T, IBM, Xerox; all the European and a few of the major Japanese suppliers. The voice system development is something that is, as those of you who are familiar with it know, very far along and is a very important development, as are a whole series of others, in particular, the wide range of new transducers—the ability of adding on line data from a variety of different sources. The first year I was in business I saw a cartoon in *The New Yorker*, and I wrote to Charles Adams and got the original which I have always kept behind my desk, because I felt it was the best statement on the field that I've ever seen then or since. Two caterpillars are talking to one another as a moth is coming out of its cocoon and stretching it's great lovely wings for the first time, and one caterpillar says to the other caterpillar, "You'll never get me up in one of those things," and that's been the whole history of this field because as you talk about any of the real advances in the technology you know all your current problems and we hear you're never going to get me up in one of those things.

I do think the strategic planning function in EDP seems

lightly staffed and underdeveloped. On the other hand, I recently asked my friend, Joseph Luntz, the Chairman of NATO, if things were really as bad in the alliance as I had heard. And he said, "Well, I'll remind you of the comment of your countryman, Mark Twain, when he was asked to comment on the music of Wagner. He said, 'It is better than its sounds.' " So I suspect that EDP strategic planning is better than I may have made it sound, but it still needs a good deal more work. My second comment deals with EDP as a support function to corporate divisional strategic planning. I have the least to say on this principally because it obviously presents great possibilities, but they largely depend on forces that you as EDP managers can only influence and not control directly, and they vary immensely with the culture of the company and with the type of attitude and approach of the management. My shorthand on this is--there's nothing wrong with being reactive. There's an awful lot of talk these days about being proactive. I suspect there's nothing wrong with being reactive in this area. We are a few blocks away from Northwest Industries. The Chairman of Northwest Industries has personally written and has on his system over eight-hundred programs, which are all locked so that he is the only one who has access to them. But any of you who know Ben Heineman know that the computer is playing an absolutely key role in the strategic planning of that company. Their system is not to charge the group executives for any use of the computer at home or any place else. Every attempt is made to encourage executives to make any kind of use they want with the understanding that the people that they're dealing with are concerned with strategy, and are concerned with the running of a large, multi-divisional company.

That's one kind of approach. Others have begun to introduce econometric models and other things into their corporate planning, and obviously there's an immense amount that can be done. My only point is not it really needs to be done and it depends entirely on the company, and what's being done there. There are some reservations that I have in this field. I think that one of the problems is that quantification here as in econometrics leads to ignoring the variable that can't be quantified, and that can lead to some pretty bad decisions. It also leads to some pretty bad economics and can lead to some pretty bad decisions in other places. I remember years ago President Johnson had been very impressed with Bob MacNamara's program planning

budgeting in defense. So the President issued a directive that all agencies of the Federal Government had to submit a programmed plan budget format and all of their data on programmed planned budgeting for the budget. I was the only outside member of a six-man commission with Charlie Hitch, then Controller of Defense Department, who later became President of the University of California, and Elsworth Bunker, as well as a couple of other people. We were dealing with the Foreign Affairs Community, State, AID, CIA, all of the outside U.S. activities and the problem of how you prepare program planning budgeting for these. The very first Agenda told the whole story because the seventh item on it was absolutely the heart of the whole issue being considered. When we got to the seventh item Charlie said, "Well, we're never going to be able to quantify it so let's just leave it out.", and that's what happened. That is an example of one of the real problems in too much quantification in corporate planning, and I think that it would be well for the people in this field to make clear to everybody the limitations in it before you end up being crucified. I still think the quotation that sums up a good deal about this field is "The modern age has a false sense of superiority because of the great mass of data at its disposal, but the valid criterion of success is rather the extent to which man knows how to form and master the material at his command." The fact that it was written by Johann Wolfgang von Goethe in 1810 makes it no less pertinent to this particular question.

My third and last point concerns EDP as an agent of change in business strategy and in the competitive complex in business. A long time ago I set up a construction in which I said that information technology was initially going to change how we do work, which affects costs, and as you'll be hearing from the economist at the luncheon speech, today the costs are a matter of survival, let alone success, and it is no small item to impact the cost structure effectively. But I felt that secondly, information technology would change what we did. It would first change how we did the work. It would then change what the work was of the business, and that's the stage we're now into, not far into, but nevertheless into. And third, I think that in the end, it's going to have a really important impact on changing the society within which the enterprise exists, and therein other major entrepreneurial strategic opportunities. That, I think, is the most interesting and significant aspect. I think we're getting into the midway point. Let

me give some examples. Basically, I am saying that information technology is doing two things—the technoeconomic development is changing the cost structure. It's changing the EDP from a support function and making it also a line function, but its impact is on the cost function. Secondly, it's changing the capability to do things. Let me give some examples about that, because that's where the parameters of competition change, that's where the real P & L impact is, and that's where the real question of strategy lies. In an increasing number of industries, the technology is changing the kind of services offered. I'm on the Board of Prentice Hall, which has a tax section that publishes services, for example, information about tax laws that have been changed. This week, for the first time, they will be holding teleconferences in Holiday Inns all over the country to discuss the tax changes. Holiday Inns had the foresight to build the teleconferencing facilities. This represents a material change in competitive advantage in the hotel business. Dart & Kraft in Chicago has an experiment of some scale going with Safeway Stores whereby the manufacturer of the food is linked directly to the retailer. This is also being done in the hospital supply field. The "Toys R Us" retail operation goes even further. They buy one of everything that comes out and from then on the system takes over and whatever's bought by customers is what gets inventoried and shipped and ordered.

The banks are obvious examples, as is the growth of home computers. The banks that are utilizing the new technology are dramatically changing competitive factors in the retail end of banking. Entertainment, for example, computer games, with the increasing use of graphics, is an industry which is already twice the size of the movie business. And they are having an enormous impact on the record industry as well. So the entertainment industry also has changed what it offers to the consumer as a result of new technology. Publishing is another field which is changing because of technology. There are vast opportunities as a result of all this change, but there are also major policy questions involving genuine strategic issues which must be faced! Does the bank go into retailing? Is the retailer a bank? In Florida a group of supermarkets have gotten together and set up their own funds transfer system. Are they banks? What do they want to be? These are very real strategy questions that have to be faced at a senior level in those companies. I think that MIS will be

a term that ceases to be because we're going to be talking increasingly not of management information systems, but business information systems. There will be a braided, intertwined relationship, from the raw material through the manufacturer, distributed to the customer, with the financial community, and all the transactions throughout, they're all going to be EDP activities, and basically it will be a business system. I think we will see different sectors of society intertwined also in this form.

All of this makes it clear, I think, that there will be a genuine role in corporate strategy for EDP development or information technology, whatever you want to call it. As much as we might wish otherwise, I think there are very few companies today where that kind of planning exists. I was startled recently when we hired the strategy Vice President of one of the largest banks in the country, which has created some of the most advanced systems in the industry. He was *not* EDP management, he was Vice President of Strategy. I told him that the first thing I wanted him to do was to write a case study that we could use in training clients on how the foresight of the bank's Chairman had such a tremendous effect on the developments in communications, home computers, and how all of this intertwined with his strategy. And he said he couldn't do it because during the entire time he was Vice President of Strategy, which was some years ago, EDP was never mentioned in any of the discussions of strategy! And this was a highly organized, highly advanced strategy group dealing in an industry which has been materially impacted by technology. I was once told by a research director that EDP simply isn't involved in strategy. There are, of course, exceptions, but what I am saying is that EDP will become more involved in strategy. You have information technology as an agent and as a resource, and the realization of both of those things is absolutely crucial in more and more businesses. It's a devil of a problem for you as MIS managers because you've got the responsibility, as well as a terrific opportunity. And the problem is how do you get from here to there. There was a young Harvard graduate who was going to drive to Oregon for the summer, but didn't know how to get to Portland, so he asked an old resident of Cambridge who said, "Well, you take the main road to Waltham and then you go left at the fork." Well, getting from here to there, what I've been talking about, is like that story. You can think about the initial steps, but the farther

steps are much more sketchy. I think you need to raise questions of whether or not a system exists that provides both functional and line managers, as well as senior management throughout the company with information on what other people are doing with information technology, and most of all, where the technology and the costs are going, in addition to the capacities and capabilities. What kind of structure does exist, to what extent are these things considered in the marketing, manufacturing and distribution strategies? These seem to me to be some of the questions which should be posed as well as whether there is a mechanism or unit in the business that is providing this information and if not whether there should be one. We are in a period now of major change, and getting people to understand change is hard. One of my favorite stories is of a German farmer, whose field was cut in two by a road. One day he and a helper were going from one field to another with a load of hay, and leading a pair of oxen, and just as they had crossed the road, a Mercedes sports car came over the hill at an absolutely unstoppable speed. The farmer and his assistant froze, and luckily the driver was able to steer into the field from which they'd just come and miraculously get back on the road. As the car disappeared over the next hill, the farmer turned to his helper and said, "We sure got out of that field just in time!" Well, many people view change with just the same reaction.

As a graduate student, I spent many days over at Howard Akin's Computation Laboratory on one side of the Charles River, where he was using Mark I and was just completing Mark II. I then went back to the Harvard Business School side of the river and tried to get anyone on the Faculty interested in the fact that computers were really going to change everything. I got nowhere except for one Professor of Accounting, Charlie Bliss, who was right with it. Then I went back to my teacher, General Doriot, and said what was happening on the other side of the river was absolutely going to change everything we were doing on this side of the river but nobody had the slightest interest in it. And he said, "Yes, that's absolutely correct. They absolutely don't have any understanding that it's going to change everything they're teaching, so you go do what you're doing." That's the problem today. You have to get the entrepreneur, the person who has the business gift. Obviously, it's not a question of the EDP manager doing the strategy of the business, but rather letting the entrepreneur understand what the potential is. And, if he is good, he will quickly begin to dream up completely new ways to serve customers, completely new forms of organization, and completely different methods of going about the business. And that is the real strategic meaning of EDP. Thank you very much.

John Diebold
Chairman
The Diebold Group, Inc.

Mr. Diebold, a pioneer in the field of "automation," coined the word in its present meaning and had much to do with introducing it to general usage. *Automation*, his first book, written at age 26, will shortly be re-issued in its original form by the American Management Association as a "management classic."

The professional management consulting firm he established in 1954 is based on understanding of the

significant changes of our times and in assisting organizations to prepare for opportunities in a practical and cost-effective way. Specific areas include the effective use of advanced technologies; social, economic and political changes and the application of management techniques to the public sector.

He holds a number of advanced and honorary degrees, has recently been awarded the Legion of Honor by the government of France, and has been decorated by the governments of Germany, Italy and Jordan. In addition to his business interests, Mr. Diebold is active in public and private pursuits and serves as director of several major industrial concerns.

STRATEGIC PLANNING FOR INFORMATION MANAGEMENT

STRATEGIC PLANNING FOR MIS

Ephraim R. McLean

Associate Professor

Graduate School of Management, UCLA

Strategic Planning for MIS is the title of a book that John Soden and I wrote and edited a few years ago, and so I have chosen it as the title for my talk today. But it will also be an update on what we have been learning about MIS planning in the half-dozen years since the book was published.

I am frequently asked when a new or updated version of the book will be published, for it came out in 1977 and was based upon a conference that was held earlier still. In the computing field, things move so rapidly that books that are even three or four years old are often felt to be out of date. However, after almost six years, our book continues to sell briskly. In fact, I received a sales report from Wiley, the publisher, a few weeks ago; and it showed that the sales for the last six months—over a thousand copies—were the highest for any six months since the book was published—including the first six months!

This indicates a number of things to me. First, in recent years there has been an increasing interest and concern on the part of MIS professionals on the topic of strategic and long range planning. The theme of this Conference—and your presence here—gives ample evidence of this. Secondly, and perhaps immodestly, I would like to believe that the book was basically well done and perhaps somewhat ahead of its time. But thirdly, and most importantly, I do not believe that the rate of change in planning is nearly as great as the changes that are occurring in other parts of our field. The technology is changing rapidly; the planning approaches and techniques are much more stable. Indeed, as I reread parts of the book in preparation for

this talk, I was struck by how many things that are now quite popular were discussed there.

I am not saying that a new book is not needed, just that the present one still seems to be surprisingly up to date. However, there have been some changes; and today I would like to first benchmark what we found and reported in our book in 1977 and then indicate what changes have occurred in the five and a half years since then.

The original work was based upon an invitational conference held in the mid-1970's in Los Angeles and sponsored by the UCLA Graduate School of Management and the consulting firm of McKinsey and Company. Representatives from twenty leading firms attended the two-day conference; and their inputs, coupled with the follow-up investigations of John Soden and myself, led to the publication of *Strategic Planning for MIS* in 1977. The book is over 400 pages long, so I will not attempt to summarize it here; but there were a half-a-dozen key findings that are relevant to our discussion today.

First, we found that there were great variations among the organizations in terms of their planning sophistication. Some were quite advanced, but many—much to our surprise—were not; and this was true even in some

*Ephraim R. McLean and John V. Soden, *Strategic Planning for MIS*, Wiley Interscience, 1977.

organizations that were otherwise quite sophisticated in their other management processes.

Second, most of the MIS planning was *tactical*, not *strategic*. The development plans may have had long term timeframes, but they were not really strategic in nature.

Third, in those few cases where the plans did have a strategic focus, they were *reactive* rather than *proactive*. In other words, the MIS plans merely supported or reacted to the already existing corporate strategic plan. We found no evidence of MIS plans making a proactive contribution to the competitive posture of the organization.

Fourth, there was more concern for the planning process than with the resultant plan. Oftentimes, plans were prepared but then never followed or used. For many companies, they were simply not guides for action. But if you are not going to use plans, then why prepare them? The answer is found in the next point.

Fifth, the main reason most people gave for undertaking MIS planning was to improve communication with, and understanding by, top management and users. In other words, by going through the planning process, and thereby involving corporate and user management, MIS was able to "tell its story." Planning was a means whereby MIS management could get top management's attention—whether or not the resultant plan was ever used. It had already served its purpose as a communication vehicle. But if you don't care where you are going, any road will take you there, which leads to my final point.

Sixth, no one planning approach, technique, or methodology dominated. There were many different approaches being tried, many of a home-grown nature. Most were bottom-up, being mainly collections of individual projects without an overriding strategic direction. A few firms were beginning to use IBM's Business Systems Planning and others were attempting top-down planning using business needs analysis and approaches that resembled critical success factor identification—although, of course, they did not refer to it by this name.

There were a number of other findings, but these are the major ones that we were able to identify in the mid-1970's with regards to MIS planning.

I would now like to look at what has happened in the last half decade in the information systems field and how these changes have affected MIS planning. In particular, there are at least three dimensions to this: the technical environment in which we live, the mission we have as MIS professionals, and the focus of our efforts.

I do not have to tell you in this audience of the rapidly accelerating rate of change in the technology we use. The following are just some of the changes we are experiencing in our environment:

- Cheaper and more powerful mainframes
- The explosive growth of mini- and microcomputers
- New developments in telecommunications, both technical, e.g., digitized voice, packet switching, and political, e.g., deregulation
- Distributed and departmental computing
- Word and text processing, records management, and other aspects of office automation
- Laser printing, micrographics
- Computer-Aided Design/Computer-Aided Manufacturing (CAD/CAM)
- Many others

In each of these developments, there are both technical and managerial challenges. What is the role of the data processing department vis-a-vis end users when computing power that cost several hundred thousand dollars just a few years ago can now be had for a few thousand dollars? Who will control the emerging departmental computers? This leads to the second dimension: the mission or charter of the MIS function.

A couple of years ago, I got a call from one of the editors of *Computer Decisions* who was preparing an article on MIS planning. He told me that he had read my book and had planned to use the steps that John and I had used in outlining the planning process as a guide for his interviewing.

Unlike many planning approaches that start with an assessment of the environment, an evaluation of the organizational strengths and weaknesses, and so forth,

our first step in MIS planning begins even earlier: what is the mission or charter of the MIS department? When the *Computer Decisions* editor began asking managers about their MIS mission statement, his questions were usually met by an embarrassed silence. Very few had a clear statement of what it was they were responsible for and even fewer had a formal, written MIS charter. He was so taken by this that he changed the focus of his article and entitled it "MIS/DP Needs a Charter." It was published in the November 1980 issue of *Computer Decisions*.*

Since then, I too have begun asking MIS managers about their charters. At first, not one in ten had one. Now, a significant number do; and I have had to ask myself why this has changed. Why are so many more people wrestling with this issue now than were a half a decade ago? I believe that it links to the changing environment that I talked about a moment ago.

If you asked a manager in the early 1970's, "What is the mission of data processing?", you would have probably received a puzzled reaction. "That's a dumb question," they might have said (or thought), "it is to do data processing." Now, however, the question is much harder to answer. In addition to data processing, does the information services function have responsibility for word processing and office automation? For telecommunications—voice as well as data? For reproduction and the corporate "print shop"? What control—if any—does the data processing department have over departmental computers and microprocessors? What are the respective roles of the data processing professional and the end user? All these new areas mean that a well defined charter or mission statement has now become a vitally important document.

The last change has to do with a shift in focus on the part of MIS professionals. I will use the words "data processing" to illustrate this change. In the 1970's, DP management focused on the second word, "processing." The concern was with the computers themselves and how they could be used more efficiently. It was a technical orientation or perspective. In the 1980's, the focus has begun to shift to the first word, "data." Attention is now being focused on the data and information needs of the organization. It is a business perspective rather than a technical one. This data orientation is at the heart of the BSP approach that John Zachman will be describing shortly.

What have been the results of these changes? First of all, the role of the central MIS organization is being re-evaluated. In many companies, the central DP department no longer performs all of the data processing functions of the firm, they do not own or control all of the company's computers. User departments are acquiring their own hardware, resulting in many "MIS departments" in a company, not just one. Planning in such a diverse environment is certainly difficult, and the control problems are even worse. Some companies are not even trying, letting each division or department go their own way.

Because of this diversity, different planning and control approaches may be appropriate for different parts of the business. Dick Nolan's Stage Theory suggests that different management techniques are appropriate at different stages of a firm's EDP growth. So when you have different parts of the organization on different parts of their growth curve, different planning approaches should be used. Similarly, the Boston Consulting Group's matrix of organization types—"cash cows," "stars," "dogs," and the like—suggests that each of these organizational entities requires planning approaches that are specially tailored to their own unique circumstances. The result of all this is that there is no one "best approach" to MIS planning. What is "best" is a relative concept, not an absolute one.

In light of this, how has MIS planning changed? In the years since our book was published, I have talked with a number of managers and I have found changes in at least four areas:

- The use of technology
- The dynamic nature of planning
- Plans as guides for action, and
- The competitive impact of MIS.

In some ways, DP professionals are a little like the cobbler's barefoot children. The very technology that we urge others to use, we make little use of ourselves. We promote computer-based corporate planning and

*David Whieldon, "MIS/DP Needs a Charter," *Computer Decisions*, November 1980, pp. 94ff

yet we do not use the computer to help us with our own planning. However, this is beginning to change. With easy-to-use packages like VisiCalc, IFPS (Interactive Financial Planning System), and others, managers are beginning to use computer-based aids rather than using the "back-of-the-envelope" approach. This is not a major finding, but, I think, an interesting one.

The second change is a recognition of the dynamic nature of planning. The future is dynamic; therefore, so must planning be. It has been said, correctly I believe, that the future is unknowable. Therefore, forecasts can be nothing more than educated guesses. Plans cannot be based upon a knowledge of the future because, as I said, the future is unknowable. But plans are not forecasts; they are not a prediction of the future, but a way of being better prepared for the future. So, as events unfold, and the future "changes," plans must also change. In other words, plans must be dynamic, not static. Carefully bound, multi-volume sets of "THE PLAN" are likely to gather dust on the shelf. In fact, such static documents are counterproductive, giving a false sense of security and not providing any real guidance for dealing with a rapidly changing world. Monitoring of the environment, and feeding this back into the plan, is essential. The plan must be linked to the current situation—and to the current budget.

If the preceding is accomplished, another change occurs. Plans can now become guides for action. Earlier in my talk, I mentioned that, for some managers, the planning process was more important to them than the resultant plan. They felt that enhanced communication with top management was an important benefit even if the plans were never implemented. This thinking is changing and implementation is now receiving much more attention. Plans, without proper implementation, are sterile. In a very real sense, MIS plans are now becoming guides for action, not mere exercises.

A result of all this is that MIS is now beginning to affect the competitive strategies of the organization of which they are a part. MIS plans are shifting from a reactive role to a proactive one. Rather than merely supporting and being congruent with the overall corporate plan, there isn't a corporate plan until the MIS component has been included. Companies are beginning to recognize that information systems can make a strategic contribution to the business. In addition to supporting other functional areas of the business, sophisticated informa-

tion systems can make their own contribution to the organization.

For example, American Airlines has long used computers to maintain a marketing advantage over their competition. Their pioneering work with their SABRE system is well known; but I recently read a *Business Week* article about how American is putting its terminals into travel agents' offices, showing all the flight schedules but making sure that American's flights are displayed first.

Similarly, American Hospital Supply Corporation used its extensive reordering, distribution, and inventory control system to gain a major share of the hospital supply business in the U.S., systems that their competitors are just now beginning to develop.

When Merrill Lynch decided to offer their Cash Management Account, they turned, not to any of the major New York banks for their computer processing, but to BankOne of Ohio. The management of BankOne recognized, in the computer, a way to gain a competitive advantage over their much larger New York brethren. They developed a processing capability that was far beyond their own internal processing needs, and then proceeded to market this capability aggressively—and highly successfully. Indeed, I might suggest that BankOne is as much in the data processing business as it is in the banking business.

In these examples, and in many others I could mention, the information services function has become a central part of the business, not a mere appendage like accounting and legal services. It is creating new business opportunities as well as supporting existing ones—and the planning process reflects this change.

This brings me to the end of the first part of my talk, where I have tried to outline some of the general changes that have occurred in MIS planning in the last half decade. For the last few minutes I would like to focus on two of the major planning techniques or methodologies that have emerged in recent years—Business Systems Planning and Critical Success Factors analysis—and on their respective strengths and weaknesses. Each of these will then be discussed in more detail by the speakers who follow me.

Business Systems Planning is a systematic way of analyzing an organization in terms of its *data classes* and elements and its *business processes* and functions and relating them to the information needs of the organization. It was developed by IBM; but, as you can see from the definition, it has nothing to do with hardware or technology. It is a generic approach, usable by any organization, and quite independent of the type of computer—if any—that a company is using. It has a number of strengths, with some corresponding weaknesses.

For one, it is very comprehensive and thorough. Because it seeks to identify all of the major data classes and the business processes that use these data, it generates a complete picture of the information structure of the organization. This dual concern leads to two other advantages. The data orientation allows a close link to a data base development approach and the business processes focus keeps the perspective on the needs of the business and not on technical considerations.

As a formal technique, BSP is quite learnable and transferable. Unlike some approaches that only work well in the hands of the originator and maybe a few carefully trained followers, BSP has been taught to thousands of analysts and managers. Over a thousand different organizations have undertaken, in varying degrees of detail, business systems plans.

Finally, the information architecture which is produced by a well-done BSP is reasonably stable and robust. Whereas the specific information needs of a particular manager may vary widely over time, the underlying information or data structure is much more stable. The organizational structure may change, but the information that the organization needs in order to do business does not.

I had occasion to become familiar with a BSP effort that was undertaken at the Feature Film Division of Twentieth Century Fox Corporation. Certainly, in most people's minds, the film business is highly volatile and changing. Turnover in top management is much more the rule than the exception. The public's taste for movies is notoriously fickle. And yet, the way films are made and distributed has been relatively unchanged for decades. In fact, Charles Tucker, who directed Fox's information systems planning effort, claims that the only

real change in film making in fifty years has been the replacing of the hand crank on the camera with a motor!

Fox completed its first BSP a few years ago. Since then, a number of changes have occurred. Alan Ladd, Junior, left the presidency of the Film Division to form his own company. The corporation was acquired by Marvin Davis, an oil wildcatter from Denver. Dennis Stanfill, the CEO, was eased out. Fox was converted from a publicly held corporation to a privately held one. At each change, the new management reviewed the business system plan to see if it was still appropriate; for, after all, it was their predecessors' plan, not theirs. However, because it focused on the underlying data and business needs rather than on the personalities of the individuals currently running the business, the plan has remained viable and is still guiding Fox's information systems development efforts.

These advantages sound impressive. What are BSP's disadvantages? First, the price of its comprehensiveness is high. It is expensive and time consuming to do a complete BSP. It is exhaustive—and exhausting. In fact, for some organizations the effort is so great that when they are finally finished with the planning, they say "phew" and go no further. The plan becomes an end in itself rather than the starting point for subsequent development activity.

I have a consultant friend who is a big fan of BSP. But not because he admires its thoroughness or its structure—which he does—but because it is a good source of consulting business for him. He seeks out companies that have undertaken a BSP a few years earlier; and, in those cases where the company is unhappy with the results, he functions as a "BSP repairman." However, in almost every case, the fault lies not in the planning process but in the failure to follow through. The companies have invested so much time and effort in producing the plan, they say "phew, I'm glad that's over with," not realizing that the plan is not the end but just the beginning. Perhaps this is not a weakness of BSP *per se*, but it is a trap that many organizations fall into if they are not careful.

There are a couple of final problems with BSP. For one, in spite of its dual top-down and bottom-up orientation, it tends in practice to be primarily bottom up. The price of its completeness is often a lack of focus. It describes what is — not what is *important*. Having constructed an