

## Interview with: R. E. McDONALD

**President  
Sperry Rand Corporation  
New York City**

**By: HERBERT  
HALBRECHT**

**President  
The Society  
for Management  
Information Systems**

*MIS Quarterly: What do you believe top executives in general expect from their information function, compared to what they get, and what do you see for the future?*

MR. McDONALD: I think it's necessary for you to know something about our organizational structure and how we operate as a corporation in order to interpret some of my comments on the information function. This, of course, affects how we look for information, what we're now looking for in information, and what we may look for in the future.

There are three basic points about Sperry that have influenced our information function. First, we're a very large, multi-division, multinational corporation with a little over three billion dollars in annual operating revenue. We operate six divisions in six different businesses around the world. Second, as a philosophy of our corporate management, we want to continuously increase earnings per share on a quarter by quarter basis. We emphasize this primarily because, years ago, our corporation would be going well during the first three quarters of the fiscal year and then in the fourth quarter we'd have some financial surprises. Third, we are primarily a high technology company in our major businesses. This involves fairly large risk-taking and large investments. It's

inevitable that there will be disappointments and there will be some surprises.

To successfully manage a company that is large, complex, committed to consistent earnings growth, and in high technology businesses involving risk-taking, we decided we had to know what was going on in the corporation on almost a realtime basis. We particularly wanted to know if we got into difficulties in various divisions or different projects where there might be disappointments. This might involve a product which was not going to materialize or was going to have big cost overruns which would have a negative profit impact.

When I say we, I mean we in the senior corporate management. We expected our division presidents and their staffs to be aware of these developments. But we did not want to have a situation where they might not be keeping the corporate management advised in realtime. We wanted to be able, early on, to offer suggestions or go in and help the division. We might call on another division's resources to be put behind the problem. In some cases, we might want to insure that action was taken to kill a project.

*MIS Quarterly: Do you expect a better quality of information in the future than you may have been able to depend upon in the past?*

MR. McDONALD: Very definitely. We are examining whether facts which are pretty much history are really facts or are they "guesstimates?" Are the estimates of what may happen in the future very carefully thought through? These issues, I think, relate to quality of information. With information of poor quality, decisions are bound to be inadequate and sometimes wrong.

*MIS Quarterly: Many presidents and CEO's use information that is not necessarily computer-based. What is your most useful source of information?*

MR. McDONALD: I depend heavily on my face-to-face contacts and discussions with the people on the firing line. That has to be backed up by a lot of factual data. Reading reports which may be numbers or tabulations without that face-to-face, eyeball-to-eyeball conversational mode of communication, we feel, is very unsatisfactory and quite inadequate.

*MIS Quarterly: Do you use a combination of factual data plus your face-to-face meetings as your principal source of useful information?*

MR. McDONALD: Yes, and we do this on a quarterly basis. We have our division presidents and their staffs review how they stand on all their programs. We look at balance sheets, profit and loss statements, estimates for the fiscal year, and forecasts on a quarterly basis. Generally we alternate having the division come into the corporate headquarters and the corporate officers and staff going to a location. We think that going out and working with our people at their division locations gives us additional appreciation of what's going on.

*MIS Quarterly: Since the information services function impacts upon, and is impacted by, all parts of a company, are they represented in the planning process at the beginning or are they primarily the recipients at the end?*

MR. McDONALD: We have an information services function — a management information services function (MIS) — which varies somewhat from division to division. It represents a relatively small percentage of the total information that comes to our attention. In general, MIS computer information is highly number-oriented. In each of our divisions we have planning groups to deal with new plans and new programs. Those planning groups reduce to writing and financial projections the details of any new project or product that we may consider implementing or the details of going after a new market segment. The MIS people, as such, are not involved in the planning of new products because of the very nature of their function.

*MIS Quarterly: They're like a staff to the planners?*

MR. McDONALD: Yes, and they're also part of the implementation organization. This is because the MIS function in some of our divisions is involved in production planning and scheduling as well as in financial planning and control.

*MIS Quarterly: Do you have a corporate MIS function?*

MR. McDONALD: Yes. It's small and its responsibility is to coordinate the procurement of computer equipment by the various divisions and to provide the divisions with information on the latest Sperry Univac products and on products

that may be in gestation. Here we may be a bit unique as an industrial corporation. This group is also expected to lead in the cross-fertilization of information. For example, one division might develop certain new computer programs or MIS techniques. One of the functions of our corporate MIS group is to see that information on these techniques is available to other divisions so they don't have to reinvent the wheel.

*MIS Quarterly: To whom does the corporate MIS person report, functionally?*

MR. McDONALD: He reports to a function called Financial Analysis that reports to me as president; therefore, he reports one step below the corporate president.

*MIS Quarterly: Does this person participate in some of your planning meetings in such a way that he might be responsible for indicating the system implications of some of your business plans?*

MR. McDONALD: Yes, in our more complex divisions he would. In other divisions this individual would be more involved in knowing the type of activity going on in the MIS function of a division, to what degree it is going on, and in providing technical help and assistance there. Also, he performs that cross-communication function of showing one division how another division is doing something.

*MIS Quarterly: Do the divisional MIS managers participate in the strategic planning process at the divisional levels and in discussing what the systems implications of the plan would be?*

MR. McDONALD: Yes, in our more complex divisions, such as Sperry Univac, they do.

*MIS Quarterly: What are the criteria or methods that you would employ in selecting the information services lead executive and in evaluating performance?*

MR. McDONALD: I would look for a person who understands computer systems — what they can do and their weaknesses. When I say computer systems, I mean software as well as hardware. Further, I'd look for a person who can communicate effectively with the people that he has to sway or influence — line management people, primarily. This dotted-line relationship puts a premium on the ability to work with others effectively. It also calls for a high component of pragmatism, or common sense, as contrasted with

a highly theoretical, ivory tower type of approach. There's a place for both characteristics, but the head of MIS, in my book, must have high pragmatism in his capability spectrum.

*MIS Quarterly: What incremental benefits might your organization get from having possibly superior information?*

MR. McDONALD: We know quite well that we could not do the things that we do today, such as changing production schedules and introducing engineering changes in fast reaction to the competitive market place, without the use of computer systems and the MIS systems that we're using. Neither would we be able to react as rapidly to the downswings in the market place. For example, the very tough recessionary situation starting 30 months ago hit us very badly, in particular in one of our divisions — Sperry Vickers — because it reacts quickly to changes in industrial capital goods business. We would not have been able to manage that business as effectively without the modern MIS systems that we have.

*MIS Quarterly: Do you use mathematical modeling within your MIS systems to ask the "what if" kinds of questions?*

MR. McDONALD: Yes, there's quite a bit of that. Our business planning people at the corporate office use it, and I know that these same techniques are used by the divisions in their planning.

*MIS Quarterly: What approach would you recommend that a chief executive take to identify his information needs and provide the resources to meet them?*

MR. McDONALD: The first thing a CEO would have to decide is how he plans to manage his business. Does he have a multi-division, multi-product, multinational organization? Is he going to use a "holding company" approach in running his business? Is he going to want to run his business as Sperry does, where there is a very close coupling between the corporate office and the divisional management structure, but where there is at the same time a great deal of decentralization and delegated authority? My point is that there are many management or executive philosophies.

If the CEO follows the holding company philosophy, I would think that he is primarily interested in straight financial information,

externally-oriented for the financial community. I don't have much further advice for him.

On the other hand, there is a more common corporate office approach to management responsibilities. Without complicating it too much, let's assume it's a multi-product, multi-market corporation. The chief executive is still going to need information to meet the needs of the financial community — his financial sponsors. Based on our experience, there are other information areas in which corporate management is interested. Let me give you an example. If the business has frequent changes in the volume with fairly extreme swings, that's going to put a premium on timely information. I don't want to over-use the term "realtime" information, but information is needed that is very, very current. That kind of information is almost synonymous with computer-provided or computer-generated information.

If this organization is staffed by a fairly young management, as contrasted with older, more experienced people who know their business in great depth, there may be a different informational need. A rapidly growing business generally is staffed by executives who are still learning at a rapid rate. Therefore the CEO will probably put a higher priority on the information that comes to his attention. I mean, by this, that he may want to use that information as a quick check on his rapidly growing managers to whom he has perhaps delegated a lot of authority and responsibility. He may want to stay on top of the situation.

What I've been describing to you indicates the importance of quality and rapidity of information. The more complex the organization, in terms of either product technology or market, the greater the premium on rapid, high quality information.

*MIS Quarterly: How are priorities set within your company for the allocation of the resources of the information function? As an example, how does somebody decide how much to spend?*

MR. McDONALD: There's a great tendency to look at our current going rate of expenditures and staff budgeting. We then look at next year's budget in terms of the need to cover inflationary costs and the need to provide greater service because of the expansion of our organization. We recognize that some of the new computer techniques available today, if implemented, will cut hardware costs or computer costs in the future, and that it may be

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necessary to make a greater investment over a short period.

*MIS Quarterly:* Are there no particular rules imposed from the corporate office as to what divisional presidents should be spending on the MIS function?

MR. McDONALD: No, and you raise a very good point. As we at corporate headquarters travel, we see situations in which we feel there is inadequate control. Control of inventories is an example. This is evidenced by write-offs or write-downs or an inability to meet the delivery schedule. Their production control systems are not up to par. In those cases, if the division management is not aggressively coming up with programs to solve those problems, then I, as a corporation president, go to the division presidents and discuss those situations. Often they haven't sent in their MIS people, or their line managers are not recognizing what MIS can do to get them back into control. At this point they are told to go after it, and they do, sometimes using task forces from other divisions. We've had at least two examples of that type of situation in the last year.

*MIS Quarterly:* Some companies are beginning to go to what they call the "chart room," the "war room," or the "information room." Do you see this as a trend, and if not, how do you think that this information is going to be assimilated in the future?

MR. McDONALD: When I was president of the Sperry Univac Division, I had a scope right next to my desk. This served as a partial replacement for the chart room. I toyed with it and I learned a lot from it. I often have an impulse to have a scope installed here for my use. At the corporate office we don't use chart rooms, as such. The divisions almost uniformly do. In fact, every division president, with one exception, has a chart room. We do use notebooks at the corporate office which contain reductions of these chart room charts which come to us as a result of our quarterly reviews with the divisions. When we go out to the quarterly reviews, they will generally take us into the chart room to show us how things are going.

*MIS Quarterly:* We're intrigued by the use of chart rooms at the division level and not at the corporate level. Some companies don't do it at the division level, but they have a magnificent, ultra-sophisticated one at the corporate office. Do you

*think this is a reflection of the style of the president?*

MR. McDONALD: Surely, I have to go back to our organizational structure and how we operate at Sperry Rand. At the corporate level, we bend over backwards not to manage the divisions. We have a philosophy of delegation of authority and responsibility, with a lot of communication flowing back and forth. I think the operating management needs these charts much more than we do with our surveillance and planning type of corporate management.

*MIS Quarterly:* As you look to the 1980's, what do you see as some of the major problems facing business, and to what extent, if any, do you think information services could help?

MR. McDONALD: I'm convinced that life is going to be much more complex. Certainly the operation of business is going to be much, much more complex. This means that high quality, current information is going to be an absolute must in order to stay on top of business management. Techniques for doing this will undoubtedly include more use of displays for operating management who are hooked up to computer systems. I also see techniques and systems for companies structured like Sperry that will permit corporate management surveillance and communication with the divisions. The latter will result in less dependence on our travel and our face-to-face contact. I can visualize video telephones or that type of information display. Let's say three of us here in the corporation — maybe the chairman, the chief financial officer, and I — could sit down and attend a conference in some location by remote transmission rather than having to actually travel to that location.

*MIS Quarterly:* Do you ever have tele-conferences without the video portion, where there are maybe 8 to 10 people on a single conference call?

MR. McDONALD: In the corporate office, no. I see our division presidents doing some of this. And I see it more frequently down in the project management organizations.

*MIS Quarterly:* Our membership consists of people who are the heads of information functions of companies such as TRW, RCA, Kraft Foods, Cheesboro Ponds, Xerox, and other kinds of companies. If you were addressing a conference of our members, what advice would you give them?

MR. McDONALD: I would ask them to recognize that they play a very important role in developing the type of information that is needed by operating management. I would suggest they spend as much time as possible with operating management and top corporate management discussing the types of information that could be provided by the MIS function. Don't ask the executives to develop the detailed specifications for the information to be provided; you do that as a result of your discussions with the executives. Several iterations may be necessary.

As information packages are developed and considered to be acceptable, don't hesitate to suggest discontinuing reports or packages as they become obsolete. You should take the initiative here.

Learn as much about the business of your company as you can. Develop an understanding of the decision-making processes of the most successful of your company executives. Recognize that there will be variations in approaches and methods used by different executives.

Provide information in hierarchical or pyramid fashion so that the layers of information provide additional degrees of detail.

Be in a position to advise management as to the quality of the information provided — its probable accuracy and validity.

*MIS Quarterly: Do you require standard reports from each division which contain information about performance as related to targets, variances from the previous period, etc.?*

MR. McDONALD: Yes, and that is a basic requirement. And then comes the really important phase — the analysis and interpretations of such basic information.

*MIS Quarterly: We asked the Chairman of the Board of a company we spoke with previously how he measures the effectiveness of the information function. He said he had attended special training schools for CEO's in this area and learned nothing about the problem. He said he really doesn't know how to measure the quality of the information on which he bases major decisions, and his key people don't either. He further said, he wouldn't walk across the street to listen to a lecture on the subject. Is this a unique reaction from someone who is just frustrated? How do you interpret these statements?*

MR. McDONALD: I think it's a rather common reaction, and it's probably the crux of the whole subject we've been talking about. Measuring the effectiveness of the information system is to ask what its value is to me in helping me perform my responsibilities. Does it perform the function that I want it to perform? One measure could be if six months from now, what was predicted came true; if it didn't, are there good reasons that developed in the interim to justify the variation? Six months is probably about as early as I could expect results for measurement, but that's a pretty dangerous method to depend upon because a lot of water can go over the dam in that six-month period.

We face the challenge of calibrating the probable validity of information given us and the credibility of the individuals reporting to us. I know of no way better than studying the information provided and then going out and talking to the people who generated it. I have in the back of my mind certain things that I want to check that originated from the reported information. As I go out, I talk with people in both structured and unstructured situations, up and down the line organization. I don't want to talk only to the top people. I have to get a chance to communicate at all levels of the organization. What I get out of these visits is verification of the judgment I made or the understanding I got from the information provided to me. I want to develop some kind of a credibility check on the regular information flow. I think this is the key.