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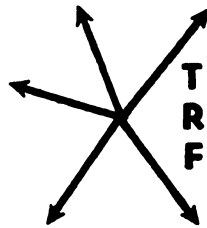
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TRANSPORTATION RESEARCH FORUM

Organizing the Information Resources Function: Transportation Management Challenge for the 80's

by A. L. Dermeyer*

INFORMATION resources management, a rapidly evolving organizational function, stands poised and ready to move in on the transportation industry. A number of other industries are already in the midst of this dynamic change. Transportation, spurred by deregulation and other recent changes in the industry, seems at last beginning to realize the importance of the information input to the decision-making process, and to organize for it.

Such realization is coming barely in time. In looking ahead at the upcoming decade Terrence Cullinam, Group Director for Marketing, SRI International sees the United States in the future as the "information society." He predicts that by the end of the 1980's less than 20% of the labor force will produce all agricultural and manufactured goods. The other 80% will be "pushing around words, symbols, and paper." He acknowledges that technology will kill many jobs but points out that many new jobs and skills will be needed.

Mr. Cullinam sees a new social stratification developing between the knows and the know-nots, the emergence of an information elite. Having access to and control of information will be increasingly important, he feels. And building a data base will become the road to the top.¹

Other business futurists agree at least in part with Mr. Cullinam's predictions. In looking ahead 50 years to 2029, Earl C. Joseph, staff consultant with the Sperry Univac Division of Sperry Rand Corporation believes that 80% to 90% of the work force will be in jobs that involve the accumulation and processing of information. And Paul A. Strassmann, Vice-President—Information Products group at Xerox simply states, "We are riding toward the end of the industrial society in the U.S."²

What are some of the specifics that may be a part of this new information oriented future? We may see changes such as the replacement of paper as the dominant form of transporting information. As paper prices continue to rise

the expansion of new, highly powerful and cost effective forms of data communication will be developed. A voice rather than document oriented form of electronic mail is now in the prototype test stage.³

Technology has already evolved to a point where most of the world's literature can be obtained within a few days by a combination of computer online bibliographic searching capabilities and computerized order fulfillment systems. In the future, rather than visiting a Library it may be possible for an individual to search the Library files electronically via his television set. He may then receive a printout of specific information or a facsimile copy of a desired document.

Even more revolutionary, it is possible that magazines and newspapers as we now know them may not exist in the future. If videodiscs can be mass-produced cheaply and read by an inexpensive playback device, home- or office-delivered videodiscs could replace them.

Another possible replacement for periodicals and books could be an updated version of the stock market ticker tape machine, a computer printout device. New books or magazines might be stored in a computer and printed out only in special order, directly to the reader's printer.⁴

What does all this mean for business in general and the transportation industry in particular? It means that the potential exists for the availability of more information than ever before, accessible at the push of a button. But it is only that—potential. A number of steps and adjustments must be made before transportation can move from its present "put-out-fires" approach to information-gathering to a coordinated program of information resources management.

One of the first of these adjustments requires a change in the thinking process. It is necessary to begin viewing information as a physical resource which:

- 1) Has value like money, raw materials and manpower.
- 2) Is measurable in terms of use, life and effect on other resources.
- 3) Can be budgeted and controlled.

**Union Pacific Railroad, Omaha, Nebraska.*

- 4) Has inputs that can be transformed into outputs, achieving organization goals.

It is particularly important that this adjustment be made at the highest management levels. Analysts, assistants aides and others involved in day-to-day research have little difficulty in viewing information as a tangible part of the report or letter they are preparing. But not until senior managers come to this awareness can an effective program of information resources management be implemented.

Such an awareness is starting. The growing use of computers has helped. As more and more of a company's processible information has been gathered into computer systems, senior managers have increasingly been exposed to the concept of information as a valuable commodity and its proper management as crucial to decision-making.

In the transportation industry an examination of the Transportation Research Board's list of the most critical issues/problems in transportation makes the importance of the information input immediately evident:

- 1) Need for specific, measurable and attainable transportation goals at the national level.
- 2) Clarification of intergovernmental responsibility for transportation systems—who should do what and when.
- 3) Transportation finance and the equitable allocation of resources.
- 4) Transportation regulation and its effects.
- 5) Performance criteria and design standards for transportation systems.
- 6) Improved utilization of existing facilities.
- 7) System maintenance—technology and management.
- 8) Viability of U.S. railroads.
- 9) Interrelationships of energy, land use, and transportation.
- 10) Conservation of energy resources and development of alternate energy sources for transportation.⁵

Ten issues are listed but an 11th could/should be added, development of the information resources management function. Solutions to the ten will not be possible without the information input. And raw data does not become information until it is managed—that is, identified and acquired, organized into systems designed for ease of retrievability, and applied to meet the organization's goals. This, then, is the work of the Information Resources Manager, to manage people, information and technol-

ogy to bring about such a process.

A number of disciplines can and should be a part of this process. Word processing, data processing, records management, library and information science, R & D, administrative services, and mail-handling are among those that have been brought together in various combinations by businesses to form the beginnings of an Information Department.

Transportation is in the earliest stages of this process—focusing on one or more of these disciplines, but for the most part, as individual units rather than as a cohesive information group. Data processing has been well developed. Word processing is advancing rapidly. Market research is an important and respected area of activity. Administrative services and mail-handling have always been around in one form or another. Records Management could use an infusion of new ideas and technology.

However, probably the most neglected area of information resources management in the transportation industry has been and is the company library. Out of the over 200 members of the Transportation Division of the Special Libraries Association, less than two dozen can be identified as representing non-governmental organizations in the business of providing transportation in some form: air, water, rail or highway. As a result it has often been necessary to live with the results of decisions made without adequate information.

But perhaps in the long run it will be a good thing to have skipped an era of library development that would not have served transportation well and moved instead directly to something better. In the past the emphasis in many libraries has been more on having than communicating, more on preserving older materials than quickly accessing newer ones. In the impending information age libraries with this emphasis will be of minor importance. And in transportation, since few libraries of any kind exist, this step can be skipped altogether.

Business libraries in other industries are leading the way to something better. They are in the process of transforming their library collections into information access centers. Their libraries are evolving into organizations of professional resource people backed by national data base search services and local computer information systems. In these organizations information is obtained by terminal, by personal contact, by telephone, through library networks and in limited local resource centers.⁶

In such access centers the commitment is to facilitating the transfer of needed information by whatever means

necessary. This may include traditional methods of collecting and organizing materials. Or in future years it may be that service can be provided without the Library facility, at least as we know it now, without buying books, without cataloging, without most of what we now know as "the Library."

Whatever physical form it takes, such a center is dynamic, not archival, its services meet a known need and it is proactive. It is involved in analyzing its "customers'" needs and developing specialized services and products designed to meet those needs. Among such services and products are an executive alert which circulates to top management news stories about or affecting company activities, staff-prepared indexes to technical reports and studies, a daily scanning service providing pertinent articles to personnel who would not otherwise see them, and a variety of customized reports.

And its forte is assisting in problems of this kind:

"I'm researching transportation deregulation. I need everything that's been published on this topic recently.

"I want to find out more about Canada's population growth in the West, and especially in Alberta.

"What's the impact of environmental groups on business?

"I want to compare the purchasing power of the dollar today with what it was ten years ago."

Although the importance of the information input and of its proper management is evident, not every organization is ready for a formalized information service/library. How can a company determine if it needs such a service?

The existence of one or more of the following conditions strongly suggests a need:

- Duplicate copies of books and magazines are purchased, often inadvertently, when fewer copies properly centralized would be enough.
- Materials stack up in unmanageable piles or are scattered throughout the company. Specific ones cannot be located when needed.
- Poor materials are purchased and good ones missed because no one is in charge of screening.
- Free and inexpensive information is wasted through lack of organization.
- Valuable employees leave for companies with established library services.
- A great deal of money is spent calling around the country in search of statistics and other data.

—Decisions are delayed because of lack of information, or information that might have altered a decision turns up too late.

—Trips to the public library bring scanty results.

—Research is less than thorough and may, in fact, already have been done somewhere else.

—Employees attempt to borrow materials from local college or university libraries and are told they must request these on interlibrary loan through their company library which doesn't exist.

—Chief competitors have extensive in-house library services.⁸

The actual establishment of an information service is often an evolutionary process. Many or most of the above conditions exist. Management's first approach is to give the "Library Project" to a secretary or assistant to set up in his/her spare time. This may work for a while depending on the ability of the individual, the time she has available and whether or not there is any turnover in her position.

However, if the need for an information service is valid, such an approach breaks down. Libraries need information specialists to run them just as law departments need lawyers, accounting departments need individuals skilled in accounting, and engineering departments need engineers.

It is at the point where this first approach breaks down, because unacceptable, even intolerable that someone with the power to do so says, "Let's hire a librarian." Then information service can begin.

However, some initial questions must be asked and answered before the interviewing begins:

1. What will the scope of the Library be? Narrow or broad? A one-person operation providing minimum assistance or an extensive service with wide-ranging responsibility and accountabilities?
2. Where will the library/information service stand in the organization? It needs to be high enough so that it is viewed as an integral part of the management support structure and crucial as facilitator of a smooth flow of information.
3. Who will the librarian report to? Hopefully to a policymaker who can provide the visibility, support and contacts with key personnel the information service will need to perform effectively.
4. What will be the status and salary of the librarian? It should be

- equal to other managers of comparable education, experience and responsibility.
5. What will be done to see that the librarian becomes an immediate part of the informal information network already established in the organization? Possibilities include having her/him participate in planning sessions for new projects, putting her on the routing for status reports and other correspondence, including her as a member of important coordinating groups. Anything that will assure her knowing what's going on in the organization so present and future information needs can be met.
 6. How much staff will the information service have, initially and later on? Secretarial support will be needed from the outset, perhaps only a few hours a day or week. But it will be needed. Later on as the scope of the service broadens additional help, both secretarial and professional, may be needed.
 7. How much space will be allotted? Libraries can not operate out of a coat closet. If a commitment to space is lacking a commitment to the information service may also be lacking.
 8. What will the Library's budget be? Information costs money in the same way freight cars and ships and trucks do.

When these major questions have been addressed the next step will be to hire a librarian/information specialist to take charge. In addition to the traditional activities of such a position, in the new information age this individual will provide technical expertise and counsel on such matters as information plans and budgets, reliability of information sources, cost effective information products and services, and new information technologies. He/she will need management skills and a strong motivation to put knowledge to work rather than to provide custodial service. An analytical intelligence, self-confidence, flexibility, a sense of humor, patience and a service-oriented attitude are also important.

Once the information specialist has been hired initial steps to be taken in establishing the information function include:

1. Identification of all information resources in the organization.
2. Analysis of information requirements.
3. Formulation of information ser-

vice goals and objectives based on these requirements.

4. Establishment of organization-wide policies, procedures, guidelines.
5. Development of time-phased plans for meeting goals and objectives on a priority basis.

This is a joint management/librarian effort. An effective information service can not be built without the active support of management, not only in the initial stages but also on a continuing basis.

The development of such libraries is, as mentioned earlier, only one segment of the information picture. The 1980's will see a number of information processing activities combine to the point where a functional manager of information evolves. This person will keep the newly integrated activities flowing smoothly but even more, will be responsible for the planning and design of the information system itself. The system will vary from organization to organization but may include such elements as the company librarian/information service, data processing, communications, in-house printing, word processing, records management, R & D, mail-handling and administrative services.

The evolution of such an information management function has parallels in other areas. In the early 1900's resources of capital came under financial management principles. In the 1930's people resources came under the influence of manpower management advances in the behavioral sciences. And in the 1940's the materials management function evolved.⁹

This total management approach to information activities is both inevitable and essential for two reasons. It will eliminate costly duplicative efforts throughout the organization. And it will ensure the availability of information when and where it is needed in the decision-making process.

For the 1980's, then, transportation industry management faces the challenge first of developing its weakest element in the information resources picture, the library/information service. Once that step is taken the further challenge is to draw the variety of information activities which exist in the organization into a cohesive Information Resources Department.

FOOTNOTES

1 "Scenarios Vary, but Info to be Vital in Future Society," *Marketing News*, December 28, 1979, p. 8.

2 "New Growth Industries—And Some Drop-outs," *Business Week*, September 3, 1979, p. 188.

3 "How WP and DP Relate," *Word Process-*

ing World, May 1979, p. 12.

4 "Telecommunications in the Year 2000." *Futurist*, April 1979, p. 97.

5 "Ten Most Critical Issues in Transportation; A 1978 Update." *Transportation Research News*, November-December 1978, p. 2.

6 Vincent E. Giulliano, "Manifesto for Librarians," *Library Journal*, September 15, 1979, p. 1841.

7 Union Pacific Railroad Library. "What are Pummies?" brochure.

8 Angela Dermeyer, "Try on a Company Library," *Industry Week*, August 1, 1977, p. 56.

9 Robert M. Landau, "Information Resources Management," *Information Manager*, March/April 1979, p. 10.

ADDITIONAL REFERENCES

Ash, Roy L. "Information Processing: Fundamental Changes Coming." *Office*, May 1979, pp. 63+.

Horton, Forest Woody, Jr. "Government Occupational Standard for Information Managers." *Information Manager*, March/April 1979, pp. 34-36.

"How Your Job Will Change in the Next 10 Years." *Administrative Manage-*

ment, January 1979, p. 27+.

"Information at Your Fingertips." *Dun's Review*, August 1979, pp. 83+.

"Information Audit; a New Tool for the Information Manager." *Information Manager*, May/June 1979, pp. 18-19.

Johnson, Edward N. "What are We Managing and Why?" *Information Manager*, December 1978, pp. 8-10.

Katz, Marc. "A T & T Long Lines: Building a High Volume Information Research Center in Just 5 Years." *Information Manager*, September/October 1979, pp. 20-24.

Miller, William H. "Taming the Information Monster." *Industry Week*, January 7, 1980, pp. 55+.

Palmer, Edward J. "Who Will Be Tomorrow's Information Czars?" *Computerworld*, December 31, 1979, p. 53.

"Putting It All Together." *Dun's Review*, August 1979, pp. 70-72.