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# **Designing Strategic Intelligence Systems for Multinational Corporations Via the MAPS Design Technology: Theoretical and Empirical Perspectives**

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Perhaps one of the most challenging arenas for the development and application of organization and administrative sciences is that of strategic planning for multinational corporations (MNC's). Not only do international environments involve an immense array of complex, qualitative variables, but the sheer importance of the world economy behooves the development of normative models that can significantly enhance strategic decision making (Steiner and Cannon, 1966)—decision making which directs the long-range objectives, and guides the short-term activities, of the MNC.

The impact of environmental uncertainty on the MNC is so massive, however, that it makes strategic planning immensely difficult (Blough, 1966; Fayerweather, 1969; Vernon, 1972). If there is felt uncertainty about the international environment (i.e., political, social, economic, marketing, etc.), it adds extra difficulties to answering the following questions: When, where, and to what extent should the MNC expand its international commitments in funds, technology, and personnel? Should it enter a new world market? Where should it establish new manufacturing plants? Where and to what extent should it expand its existing plants? What new products should it market? In what countries? To what extent should it change its marketing and product mixes in various countries? What sources of funds should it use for its global operations? Should it go into joint ventures with other domestic or foreign companies? Under what conditions?

Strategic planning and a Strategic Intelligence System (SIS) are intended to help an MNC make better decisions regarding these questions

within the uncertainty of international environments. Eells (1972) emphasizes that the introduction of a modern intelligence activity into the multinational corporation is one of the most challenging tasks of business management today. John Beauvois (1961) sees that the future success of American business in world markets will depend less and less on technological advantages and more and more on the ability of the international manager to deal with multinational intelligence. The Special International Research Report (1967) concludes that intelligence is the power for the MNC to survive and grow in the near future.

With the objective of effectively providing strategic intelligence for MNCs such that important strategic questions can be systematically addressed, this paper first presents the aforementioned issues and concepts as a problem of *organization design*. That is, how can the MNC design a Strategic Intelligence System (i.e., groupings of people and tasks) in order to successfully monitor and adapt to its extremely complex and dynamic environments. Then the MAPS Design Technology is presented as a comprehensive set of procedures to enable the MNC to efficiently design alternative SIS's, and to evaluate their usefulness to the organization. This technology is based on the use of systematic data collections and multivariate statistical analyses in order to process all the relevant, qualitative information that influences the nature and scope of designing an effective SIS. A technology such as MAPS is needed in order to process analytically the rich qualitative data revealed by subjective processes under conditions of uncertainty. While it will be necessary to test rigorously the effect of a MAPS SIS design on an MNC, such a comprehensive field study is not yet available. However, in order to illustrate the potential usefulness of MAPS a relevant example of an SIS design for a major multinational corporation is provided.

### **CONCEPTUAL ISSUES IN DESIGNING A STRATEGIC INTELLIGENCE SYSTEM**

For the purpose of this paper, a Strategic Intelligence System is conceived to be the organized effort to obtain data, information, and intelligence that relate to opportunities and problems that occur outside of the corporation, to appraise the information bit by bit (i.e., via differentiation), to piece it together so that it forms clearer patterns (i.e., via integration), and to disseminate it to appropriate persons or subunits, enabling them to understand more clearly the external environment within which the MNC exists. From the view of MNC management, strategic intelligence is: the foreknowledge (about foreign countries and competitors and their probable intentions, capabilities, and vulnerabilities) that results from the system defined above and that decision makers must have to guide their corporations; as an organization it is a design of subunits which pursues this relevant kind of forecasting (Eells, 1972; Kent, 1966; Ransom, 1965).

This perspective builds upon the growing literature on organization design (Lorsch and Lawrence, 1970; Kilmann, et al., 1976). In particular, Lawrence and Lorsch (1967) found that the effective organization attempts to manage environmental uncertainty by differentiating itself into subunits

(e.g., divisions, departments, work groups, etc.) in order to appropriately confront different task environments (i.e., segments of environmental uncertainty). Thompson (1967) suggests that the differentiation objective is to identify the important interdependencies among environmental events, states, qualities, etc., so that the heterogeneous environment can be efficiently differentiated and contained within homogeneous, manageable subunits. Then, the effective organization applies integrative mechanisms to coordinate the various subunits into a functioning whole (Lawrence and Lorsch, 1967).

A major problem with the Lawrence and Lorsch and the Thompson approaches, however, is the assumption that an organization designed for operational purposes (i.e., the organization's short-run activities), is equally effective for strategic planning. Basically, uncertainties at the strategic level may not "fit" well into the organization's design categories established for operational objectives. Further, because of the qualitative differences between international and domestic environments, it is even more likely that the domestic stereotypes of design (e.g., marketing, production, finance, etc.) will not contain the important and interrelated uncertainties resulting from international issues. Thus, an important environmental development in the international scene may not only seem "not relevant to my department," as the bureaucratic phrase so aptly describes it, but the environmental development may also not be reflected in anybody's department. The extent to which this is the case, poses severe limitations on the MNC's ability to sense strategic intelligence which may be vital for its survival, unless the MNC has a Strategic Intelligence System especially designed to monitor and respond to such environmental developments. Consequently, the subunits of the SIS may need to be differentiated along different dimensions than the MNC's operational units. In a similar vein, Zand (1974) has suggested the development of a collateral organization to handle ill-defined problems (as in strategic planning) as distinct from the design that handles well-defined problems (as in the operational design).

In designing an SIS for MNCs, the important environmental interdependencies must, therefore, first be identified and separated into independent, homogeneous clusters. Second, a formalized design must be provided which groups people, tasks, strategic objectives, etc., into strategic intelligence subunits so that the environmental clusterings can be explicitly addressed. Such an SIS design may be quite different than the operational design but can exist collaterally with it. In fact, the extent to which the SIS and operational designs are different, may require some mediating or integrative devices to enable the two designs to coordinate their efforts into a functioning whole (e.g., to translate strategic intelligence into operational decisions effectively). Thus, what Lawrence and Lorsch (1967) present as a design problem across different subunits (i.e., integration) is equally relevant from coordinating two different sets of subunit designs.

A further conceptual issue regarding the design of an SIS concerns the differences between a bureaucratic versus an organic-adaptive organization design (Bennis, 1966). The great majority of contemporary organizations are designed for operational purposes according to bureaucratic principles:

top management determines the major objectives, policies, procedures, and rules, as well as how the organization is divided into subunits, in order to maintain close and rigid control over members' behavior (Katz and Kahn, 1966). Research has indicated that such bureaucratic organizations are most effective in stable environments and when organizational members prefer to work by highly programmed roles with little opportunity for responsibility and decision making. In contrast, the organic-adaptive organization is designed to confront and be adaptive to dynamic environments and needs to be staffed by resourceful and self-motivated individuals (Lippitt, 1969).

The organic-adaptive design would appear to be most appropriate to the development of an SIS, a system that specifically addresses extremely uncertain and dynamic international environments. In view of this, the literature on organization design and development can suggest certain necessary properties of this type of design in order for it to be effective. First, research on participative management (Leavitt, 1965) and management by objectives (Reddin, 1972) implies that the members of the SIS should have some influence on how the SIS is actually designed (i.e., how members and tasks are grouped into subunits) and what objectives the various subunits are to pursue. Such participation in the design process is expected to generate (if not maximize) members' commitment and motivation to perform effectively. Second, this participation should be guided in a manner that assures that the important task interdependencies are contained within the subunits as much as possible. Besides being better able to confront the complex environment, this containment of interdependencies would facilitate the development of cohesive, autonomous work groups (Herbst, 1962). Third, the SIS design should be conducive to Organization Development (OD) efforts which attempt to help each SIS subunit decide upon and become committed to a purpose, as well as to marshal its problem solving, communication, and leadership abilities to best accomplish this purpose (Marguillies and Raia, 1972; Schein, et al., 1969). And fourth, to be further responsive to environmental changes, the SIS design should be amenable to *design changes*, which indicates that the design of the SIS needs to be a recurring process for the organization to manage along with the traditional processes of problem solving, decision making, leadership, and so forth. In essence, as the MNC's international environment changes so do the nature and importance of various environmental interdependencies which require, consequently, a different SIS design of subunits to contain and manage the changed interdependencies effectively.

### THE MAPS DESIGN TECHNOLOGY

MAPS, which stands for Multivariate Analysis, Participation, and Structure, was initially suggested by Kilmann and McKelvey (1975) to re-design the subunits of organizations and was then developed into a formal design technology by Kilmann (1974, 1976). Regarding the design of an SIS as analogous to the design of an organic-adaptive organization, the MAPS Design Technology is based upon: (1) the *participation* of members of the organization in defining the specific strategic intelligence tasks that

they believe would best accomplish organizational objectives, (2) using *multivariate analysis* to separate the total set of tasks from the members of the organization (or division) into task "clusters" such that the important task interdependencies are contained within the clusters, (3) using multivariate analysis to place members into subunit *structures* such that the members in each subunit have similar preferences as to the task cluster to be addressed by the subunit and that the members of each subunit can work well with one another in the pursuit of organizational objectives, and (4) that such a separation of tasks into task clusters and members into subunit structures is conducive to organizational development (OD) efforts which seek to operationalize the full potential of the organic-adaptive design into effective individual, group, and organizational behavior.

The MAPS Design Technology consists formally of as many as twelve distinct steps starting from the identification of an organization problem that can be defined vis à vis organization design, to the evaluation of whether a new implemented design actually improved organizational effectiveness (i.e., that the design change actually solved or managed the initial problem). Specifically, the steps include:

1. Entering and diagnosing the organization.
2. Conceptualizing the design problem and determining the boundaries of the analysis (e.g., who is to be included, which departments, divisions, etc.).
3. Specifying the design objectives (e.g., designing for operational purposes, for strategic intelligence activities, etc.).
4. Choosing one of the scientific models of MAPS (i.e., different combinations of input variables, computer analyses, and output formats in relation to the problem).
5. Developing the task and/or people items for the MAPS questionnaire (i.e., tasks to accomplish, people to work with on the tasks).
6. Responding to the MAPS questionnaire (e.g., the extent to which each respondent would like to work on each task).
7. Analyzing the design data from Step 6 via the MAPS Computer Program (i.e., using multivariate statistics to generate alternative organization designs by showing which groups of people should work on which clusters of tasks).
8. Selecting a MAPS design (i.e., choosing one of the several designs that can be generated in Step 7 via a dialectic debate).
9. Implementing the selected design (i.e., providing resources, authority, policies, responsibility, etc. for members to actually work in new design—team building and support to help them learn to work effectively in the new design).
10. Monitoring the implementation process (e.g., assessing resistances to change, emerging problems, etc., and then utilizing strategies to best manage the process).
11. Evaluating the results of the design change (i.e., does the new design solve or manage the initial problem?—does the new design improve organizational effectiveness?), and

12. Re-diagnosing the organization (i.e., re-instating the diagnostic process in Step 1).

Central to the MAPS Design Technology are steps 5, 6, and 7—the input, analysis and output of the computerized design process. This core is what makes MAPS concrete and operational, and the prior and later steps have been developed around it. Without this core, MAPS would be strictly a qualitative or “soft” technology and, therefore, would not have the advantages of precise quantitative formulations. For example, only through the use of multivariate analysis can all the relevant information that is needed to design an SIS, be processed and utilized, i.e., no group of top management could possibly comprehend and process all the task preferences, task abilities, and task interdependencies of twenty or more members in order to designate an effective SIS design (groupings of tasks and people).

But it is important to point out that the core of MAPS, while being the concrete and computerized aspect of the technology, is in a broader sense the smallest aspect of the whole technology. In particular, the steps of the technology prior to the core are primarily diagnostic and educational, while the steps following it are primarily concerned with implementation. The basic reasons why the prior and latter steps are so important relative to the core (even though the former are qualitative), is that the prior steps determine the validity of the data gathered in the core, and the steps following the core determine if the potential of the MAPS output will actually be manifested.

Of particular interest in this paper is the application of MAPS to designing an SIS for multinational corporations, according to the guidelines, criteria, and design objectives outlined here: creating an organic-adaptive SIS via member participation in the design process, such that the SIS consists of well differentiated and effective sub-groups which can be redesigned as the MNC's environment changes. At this time, however, a rigorous field and/or longitudinal study assessing the effect of a MAPS designed SIS on the functioning of an MNC is not yet available. (The reader is referred to McKelvey and Kilmann, 1975, for a longitudinal study of MAPS in an educational organization.) Nevertheless, an illustration of an SIS design for a major MNC can be provided, although such an illustration is admittedly not subject to hypothesis testing. Specifically, this case is meant to illustrate the core aspect of the technology (input, analysis, and output) and, therefore, shows a “typical” SIS that might be designed by MNC's. Hopefully this case example will encourage future research efforts.

### **AN ILLUSTRATION**

The data site for the SIS design illustration is one of the largest manufacturing companies in its industry. The company is and has been among the top fifty of the Fortune 500 and is also one of the largest multinational corporations in the world. The company operates several hundred subsidiaries, of which approximately one-half are foreign subsidiaries scattered in thirty-four different nations. This company provides an ideal site for present

purposes. For example, as one of the company's top level marketing executives admits, the company's major product lines are highly strategic. This means that the products are very future-oriented. Hence, risk and uncertainty are the dominant themes of the company's marketing effort. The ultimate success of its business depends largely upon external environmental factors—governmental, economic, legal, political, social, and engineering, financial and marketing conditions—and depends upon detecting and predicting changes in them in terms of directions and magnitude. By nature of its products and the environment in which the company operates, it must be sensitive to the environmental factors and changes in them, and the company must have a well organized and systemized intelligency system if it is to grow and prosper in the future.

The study sample consists of 54 managers actively involved in international business operations. All respondents but one (the president of an overseas subsidiary) are located at U.S. based offices, including corporate headquarters. As can be seen from Table 1, the managers of the MNC were widely distributed throughout the organization according to hierarchical level, functional area, and product group.

Table 2 shows the 38 task terms used on the MAPS questionnaire. These items were identified as the kinds of variables considered by several international companies in sixteen investment cases (Piper, 1971; Ghymn, 1974). While the MAPS design process usually has the managers (those affected by the design) develop the task items themselves, it was felt that this list was appropriate for this illustration. At a minimum, the items shown in Table 2 can serve as a framework to generate additional items or to modify the identified items in some subsequent application of MAPS for designing SIS's.

A MAPS questionnaire was derived for this study from the responses of 54 managers to each of the 38 items shown in Table 2, specifically indicating how much they were involved in monitoring each of the listed strategic intelligency issues. Next to each item was a seven-point Likert scale where they indicated their responses. While it was not available for this MNC, often a second part of the MAPS questionnaire asks the respondent to indicate how well he can work with each manager on strategic types of activities. This part of the questionnaire is not relevant, however, if the managers (as in the present study) are spread throughout the organization and, therefore, do not really know one another well enough to make such assessments.

Table 3 shows an example of the output from the MAPS analysis indicating a particular SIS design for the MNC in question. Specifically, the 54 international managers are distributed into seven subsystems, the 38 strategic intelligence task items are also distributed into seven SIS task clusters, and the optional assignment of subsystems to task clusters is indicated (See Kilmann, 1976, for a detailed discussion of the computer program which generates such "optional" designs, as illustrated in a longitudinal study by McKelvey and Kilmann, 1975). We have provided labels on each task cluster to suggest the different types of strategic intelligence activities which would be pursued by each subsystem. The similarity of

Table 1

**DISTRIBUTION ON THE MNC's  
MANAGERS RESPONDING TO THE  
MAPS QUESTIONNAIRE**

<i>Hierarchical Level</i>	<i>Distribution</i>
1. Top	16
2. Middle	21
3. Lower	17
	N = 54

  

<i>Functional Area</i>	<i>Distribution</i>
1. Marketing	10
2. Finance	10
3. Planning	15
4. Engineering	12
5. Production	7
	N = 54

  

<i>Product Group</i>	<i>Distribution</i>
1. Energy Systems	16
2. Heavy Industry	11
3. Consumer Industry	14
4. Management Services	13
	N = 54

items within each task cluster and the differences across the task clusters illustrate the "containment of interdependencies" which were *empirically* derived by the MAPS analysis, in contrast to the *theoretical* (and perhaps stereotyped) categories shown in Table 2.

In a future research study, it would naturally be important to test whether such a MAPS designed SIS (Table 3) would lead to a better monitoring and adapting to a complex environment by the MNC; relative to the theoretical SIS design shown in Table 2, to some other SIS design, or to an MNC that did not have a formally designed SIS. It would be very informative to assess the effect of these various alternatives on the functioning

**Table 2**  
**ENVIRONMENTAL VARIABLES FOR MULTINATIONAL**  
**CORPORATIONS: STRATEGIC INTELLIGENCE ITEMS FOR THE**  
**MAPS QUESTIONNAIRE<sup>1</sup>**

<i>Economic and Legal</i>	<i>Political</i>
1. Legal system of host country	22. Host government political system
2. Host government attitude toward foreign investment	23. Political instability
3. Demand and supply conditions for the product	24. Relations with neighboring countries
4. Restrictions on ownership	25. Relations with supra-national organizations (UN, EEC, IMF, GATT, OECD, World Bank, etc.)
5. Tax laws	26. Political party factions
6. Import/export restrictions	27. Attitude of political opposition toward foreign investment
7. GNP/per capita income	28. Military elite power in politics
8. Inflation	29. Communist influence
9. Level of industrialization	
<i>Finance</i>	<i>Marketing</i>
10. Capital availability	30. Market potential
11. Acquisition and merger	31. Competition
12. Projection of cash flows	32. Distribution channel systems
13. Return on investment	33. Production cost and pricing
14. Monetary Exchange	34. Social/cultural factors impacting upon products
15. Insurance against risks (expropriation, nationalization, etc.)	
<i>Social</i>	<i>Technical</i>
16. Social unrest	35. Technology and its transfer ability
17. Religion/language/racial barriers	36. Raw material availability
18. Labor organizations	37. Availability of cheap labor and trained management
19. Public literacy	38. Infrastructure to support business (electricity, telephone, roads, ports, etc.)
20. Public attitude toward foreign investment	
21. Living conditions for American managers and their families (schools, personal security, cultural difficulties, etc.)	

Note: <sup>1</sup>This is a representative list of the kinds of variables considered by several international companies in sixteen investment cases. Identification of these variable owes its origin to Piper (1971), although modified by Ghymn (1974).

of the MNC over a period of time (e.g., one to five years), on a number of variables (as moderated by the conditions whereby the MNC's operational design was able to effectively integrate the information provided by the SIS into its strategic as well as operational decision making). Such research

**Table 3**  
**AN SIS DESIGN FOR THE MNC**  
**VIA THE MAPS DESIGN TECHNOLOGY\***

<p><i>I. Financial Subsystem</i></p> <p>(assigned to 13 persons)</p> <p>10. Capital Availability</p> <p>11. Acquisition and Merger Possibilities</p> <p>12. Projection of Cash Flows</p> <p>13. Return on Investment</p> <p>14. Monetary Exchange</p> <p>15. Insurance Against Risks</p>	<p><i>V. Legal/Economic/Political Subsystem</i></p> <p>(assigned to 7 persons)</p> <p>2. Host Government Attitude Toward Foreign Investment</p> <p>5. Tax Laws</p> <p>6. Import/Export Restrictions</p> <p>8. Inflation</p> <p>25. Relations with Supra-National Organizations</p> <p>35. Technology and its Transferability</p>
<p><i>II. Political Subsystem</i></p> <p>(assigned to 10 persons)</p> <p>22. Host Government Political System</p> <p>23. Political Instability</p> <p>24. Relations with Neighboring Countries</p> <p>26. Political Party Factions</p> <p>28. Military Elite Power in Politics</p>	<p><i>VI. Economic/Marketing Subsystem</i></p> <p>(assigned to 3 persons)</p> <p>3. Demand and Supply Conditions For the Product</p> <p>31. Competition</p> <p>38. Infrastructure to Support Business</p>
<p><i>III. Resource/Legal Subsystem</i></p> <p>(assigned to 9 persons)</p> <p>4. Restrictions on Ownership</p> <p>9. Level of Industrialization</p> <p>36. Raw Materials Availability</p> <p>37. Availability of Cheap Labor and Trained Management</p>	<p><i>VII. Cultural Subsystem</i></p> <p>(assigned to 7 persons)</p> <p>16. Social Unrest</p> <p>17. Religion/Language/Racial Barriers</p> <p>18. Labor Organizations</p> <p>19. Public Literacy</p> <p>20. Public Attitude Toward Foreign Investment</p> <p>21. Living Conditions for American Managers and Their Families</p>
<p><i>IV. Marketing/Cultural Subsystem</i></p> <p>(assigned to 5 persons)</p> <p>1. Legal System of Host Country</p> <p>2. Host Government Attitudes Toward Foreign Investment</p> <p>7. GNP/Per Capita Income</p> <p>30. Market Potential</p> <p>32. Distribution Channel Systems</p> <p>33. Production Costs</p> <p>34. Social/Cultural Factors Impacting Upon Products</p>	

Note: \*The numbers identified with each item are those shown in Table 2, to facilitate comparisons between the theoretical categories (Table 2) and the

studies could not only test some of the basic assumptions of this paper, but would also serve to develop further a theory of SIS designing.

### **CONCLUSIONS: DEVELOPING THE SIS DESIGN**

This paper has presented the MAPS Design Technology for mobilizing organizational resources to develop an effective Strategic Intelligence System which enables the MNC to be adaptive and responsive to dynamic and uncertain international environments. The MAPS design alone, however, cannot guarantee that each identified SIS subunit will fully develop its potential and be able to coordinate its activities effectively with the other SIS subunits and with the operational subunits of the MNC. Usually some organizational development (OD) program would be necessary to develop the potential represented in the MAPS design solution into effective organizational behavior (e.g., Schein, et al., 1969).

A first step in the OD program would have each identified subunit meet and prepare a detailed statement concerning the title, objectives, scope, etc., of its task cluster with information regarding the resources, technology, etc., that will be necessary to implement successfully the task cluster. Consideration should also be given to the "leadership structure" within the subunit (i.e., how each member can influence the management and activities of the subunit).

A second step in the OD program would have each subunit share its "identity" statement with the other SIS subunits. This would tend to foster an awareness of potential interface problems among the subunits, and to have each SIS subunit realize that it cannot operate entirely independently of the others. The same sharing should also occur between the SIS subunits and the MNC's operational subunits so that each will appreciate the perspective and tasks of both designs.

Thirdly, the extent to which the MNC is committed to developing a truly effective SIS design entails additional procedures in most instances. Specifically, the OD techniques of team and inter-team building would need to be applied over an extended period of time in order to help MNC members learn a new kind of management and organizational behavior (Beckhard, 1972). In general, most individuals have not experienced what it is like to work in an organic-adaptive SIS, where the outputs of the strategic intelligence activity need to be carefully integrated with the organization's operational activities. Organizational development is the educational and implementation process which not only provides members the opportunity to experience such organic-adaptive designs, but also helps them to increase their effectiveness in adapting to dynamic and uncertain environments (Bennis, 1966).

As a continuing focus on organization design and development, however, it is important that the design process should not stop simply because an SIS design has been implemented. Aside from the many unforeseen obstacles likely to be encountered during the implementation phase, the SIS design can become out of date with changes in the MNC's task environment. Consequently, the MNC could well institute a periodic

review of its SIS design (perhaps a periodic use of the MAPS Design Technology) to keep the theory and practice of designing for strategic intelligence as a recurring management process. Certainly, the development of effective SIS designs is vital to the growth and survival of MNC's in the extremely complex international environment, which necessitates a continuing process of SIS design assessment, design creation, implementation, re-assessment, and so forth.

Finally, it should be evident that organizations other than MNC's could benefit from an effective SIS type design. In fact, any organization facing a dynamic and changing environment could utilize the MAPS Design Technology to develop a collateral organization design (Zand, 1974) to address complex information and decision-making activities and then to integrate them into the operational subunits of the organization.

## REFERENCES

- Beauvois, J. J. "International Intelligence for International Enterprise." *California Management Review*, 34:39-46.  
1961
- Beckhard, R. "Optimizing Team-Building Efforts." *Journal of Contemporary Business*, 1, 3:23-32.  
1972
- Bennis, W. G. *Changing Organizations*. New York: McGraw-Hill.  
1966
- Blough, R. *International Business: Environment and Adaption*. New York: McGraw-Hill.  
1966
- Eells, R. "Multinational Corporation: The Intelligence Function," In Brown, C. C., (ed.), *World Business: Promise and Problems*. New York: Macmillan.  
1972
- Fayerweather, J. *International Business Management: A Conceptual Framework*  
1969 New York: McGraw-Hill.
- Ghymn, K. "Strategic Intelligence System for International Corporation: An Exploration Study." Dissertation, University of Pittsburgh.  
1974
- Herbst, P. G. *Autonomous Group Functioning*. London: Tavistock.  
1962
- Katz, D., and R. L. Kahn. *The Social Psychology of Organizations*. New York: Wiley.  
1966
- Kent, S. *Strategic Intelligence for American World Policy*. Princeton, N.J.: Princeton University Press.  
1966
- Kilmann, R. H. "An Organic-Adaptive Organization: The MAPS Method." *Personnel*, 1974 51, 3:35-47.
- . *Social Systems Design: Normative Theory and the MAPS Design Technology*. New York: Elsevier.  
1976
- Kilmann, R. H., and B. McKelvey. "The MAPS Route to Better Organization Design." *California Management Review*, 17, 3:23-31.  
1975
- Kilmann, R. H., and I. I. Mitroff. "Qualitative Versus Quantitative Analysis for Management Science: Different Forms for Different Psychological Types." *Interfaces*, 6, 2:17-27.  
1976
- . *Organizational Problem Solving: A Social Science Approach*. N.Y. 1977 N.Y.: Elsevier, in preparation.
- Kilmann, R. H., L. R. Pondy, and D. P. Slevin, (eds.). *The Management of Organization Design*, Vol. I and II. New York: Elsevier.  
1976
- Lawrence, P. R., and J. W. Lorsch. "Differentiation and Integration in Complex Organizations." *Administrative Science Quarterly*, 12, 1:1-47.  
1967

- Leavitt, H. J. "Applied Organizational Change in Industry: Structural Technological, 1965 and Humanistic Approaches." In J. G. March (ed.), *Handbook of Organizations*. Chicago, Ill.: Rand McNally, 1144-1170.
- Lippitt, G. L. *Organizational Renewal*. New York: Appleton-Century-Crofts, 1969.
- Lorsch, J. W., and P. R. Lawrence, (eds.). *Studies in Organization Design*. Homewood, Ill.: Irwin-Dorsey, 1970.
- Marguillies, N., and A. P. Raia. *Organizational Development: Values, Process, and Technology*. New York: McGraw-Hill, 1972.
- McKelvey, B., and R. H. Kilmann. "Organization Design: A Participative Multivariate Approach." *Administrative Science Quarterly*, 20, 1:24-37, 1975.
- Piper, J. R. "How U.S. Firms Evaluate Foreign Investment Opportunities." *MSU Business Topics*, 19, 3:11-20, 1971.
- Ransom, H. H. *Central Intelligence and National Security*. Cambridge, Mass.: Harvard University Press, 1965.
- Reddin, W. J. *Effective Management by Objectives*. New York: McGraw-Hill, 1972.
- Schein, E. H., W. G. Bennis, and R. Beckhard. *Organization Development*. Reading, Mass.: Addison-Wesley, 1969.
- Special International Research Report. *1985—Corporate Planning Today for Tomorrow's World Market*. New York: Business International, 1967.
- Steiner, G. A., and W. M. Cannon. *Multinational Corporate Planning*. New York: Macmillan, 1966.
- Thompson, J. D. *Organizations in Action*. New York: McGraw-Hill, 1967.
- U.S. Department of Commerce. *The Multinational Corporation: Studies on U.S. Foreign Investment*, 1, 1972.
- Vernon, R. *The Economic and Political Consequences of Multinational Enterprises: An Anthology*. Cambridge, Mass.: Harvard University Press, 1972.
- Zand, D. E. "Collateral Organization: A New Change Strategy." *Journal of Applied Behavioral Science*, 10, 1:63-89, 1974.