A Process Model of Internal Corporate Venturing in the Diversified Major Firm

Robert A. Burgelman

This paper reports findings of a field study of the internal corporate venturing (ICV) process in a diversified major firm. It presents a grounded process model of the interlocking key activities of managers at different levels in the organization, which constitutes the strategic process by which new ventures take shape. Successful ICV efforts are shown to depend on the availability of autonomous entrepreneurial activity on the part of operational level participants, on the ability of middle-level managers to conceptualize the strategic implications of these initiatives in more general system terms, and on the capacity of top management to allow viable entrepreneurial initiatives to change the corporate strategy.•

This paper examines the management of new ventures in a firm of the "diversified major" or "related business" type. Such firms are large agglomerates of widely diverse yet related businesses grouped into divisions whose general managers report to corporate management. In recent years, a substantial literature has emerged on the relationships between strategy, structure, degree of diversification, and economic performance in the divisionalized firm (Chandler, 1962; Williamson, 1970; Wrigley, 1970; Rumelt, 1974; Galbraith and Nathanson, 1979; Caves, 1980). The actual processes of corporate entrepreneurship and strategic change, however, remain less well understood. This is probably because these processes in such firms are complex and are difficult and costly to research. While large, diversified firms are clearly not representative of business organizations in general (Aldrich, 1979), they represent such a large proportion of the total industrial activity in the developed economies that efforts to construct a theory of corporate entrepreneurship would seem valuable (Arrow, 1982).

The research reported here investigates the process through which a diversified major firm transforms R&D activities at the frontier of corporate technology into new businesses through internal corporate venturing (ICV). These new businesses enable the firm to diversify into new areas that involve competencies not readily available in the operating system of the mainstream businesses of the corporation (Salter and Weinhold, 1979). Previous systematic research of ICV has not clearly distinguished between new product and new business development and has investigated the ICV development process only up to the "first commercialization" phase (von Hippel, 1977). The present study specifically examines the relationship between project development and business development, showing how new organizational units developed around new businesses become integrated into the operating system of the corporation either as new freestanding divisions or as new departments in existing divisions. The rationale for studying projects utilizing new technologies is that the strategic management problems involved in corporate entrepreneurship are likely to be most accentuated and most identifiable in projects in which innovative efforts are radical (Zaltman, Duncan, and Holbek, 1973).

Ansoff and Brandenburg (1971) discussed the strategic management problems of diversification through internal development in the divisionalized firm, and proposed that corporations

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create separate units within the corporate structure to facilitate new venture development. During the seventies, many large corporations adopted the new venture division (NVD) design (Hanan, 1976; Hutchinson, 1976). Fast (1979), however, showed that new venture divisions often occupy a precarious position within the corporate structure because of erratic changes in corporate strategy or in the political position of the NVD in the corporate context. Argyris and Schön (1978) provided anecdotal evidence of the various problems that impede the effectiveness of the NVD in divisionalized firms. The present study further elucidates the management problems inherent in internal corporate venturing.

Frohman (1978), Quinn (1979), and Maidique (1980) suggested categories of specialized roles to conceptualize the innovation process in organizations. The present study uses a different approach, documenting the key activities of persons on different hierarchical levels within the organization. The flow of these interlocking activities is represented in a process model of internal corporate venturing. Such a model is useful to elucidate the "generative mechanisms" (Pondy, 1976) of corporate entrepreneurship. It indicates how the entrepreneurial activities of individuals combine to produce entrepreneurship at the level of the corporation, as well as how forces at the level of the corporation influence the entrepreneurial activities of these individuals.

METHODOLOGY AND RESEARCH DESIGN

A qualitative method was chosen as the best way to arrive at an encompassing view of ICV. Concerns of external validity were traded off against opportunities to gain insight into as yet incompletely documented phenomena. The caveats pertaining to field methods described by Kimberly (1979) are in order.

ICV project development has a ten- to twelve-year time horizon (Biggadike, 1979), and a truly longitudinal study was thus beyond the available resources. Instead, a longitudinal-processual approach (Pettigrew, 1979) was adopted. The ICV process was studied exhaustively in one setting. Data were collected on six ongoing ICV projects that were in various stages of development. The historical development of each case was traced and the progress of each case during a fifteen-month research period was observed and recorded. These materials formed the basis for a comparative analysis of the six projects. This approach should not be confused with the so-called "comparative method" of early sociology, which used, often selectively, cross-sectional data to support a priori theories — most aptly called metaphors — of stages of development (Nisbet, 1969). No such theory guided the present research, nor is one proposed as a result of it.

In fact, because of the exploratory nature of the study and the objective of generating a descriptive model of as yet incompletely documented phenomena, Glaser and Strauss's (1967) strategy for the discovery of "grounded theory" was adopted. This strategy requires the researcher " . . . at first, literally to ignore the literature of theory and fact on the area under study, in order to assure that the emergence of categories will not be contaminated by concepts more suited to different areas" (Glaser and Strauss, 1967: 37). It also requires joint collection,

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coding, and analysis of the data. Data must be collected until patterns have clearly emerged and additional data no longer add to the refinement of the concepts.

The lack of previous research at the ICV project level of analysis made it fairly easy to follow these guidelines. By the same token, great uncertainty existed as to what conceptual framework would emerge from the data. Throughout the research period, idea booklets were used to write down new insights and interpretations of data already collected. These ongoing, iterative conceptualization efforts resulted in the creation of a new set of terms for the key activities in ICV and provided the bits and pieces out of which the conceptual framework finally emerged.

Research Setting

The research was carried out in one large, U.S.-based, high-technology firm of the diversified major type which I shall refer to as GAMMA. GAMMA had traditionally produced and sold various commodities in large volume, but it had also tried to diversify through the internal development of new products, processes, and systems so as to get closer to the final user or consumer and to catch a greater portion of the total value added in the chain from raw materials to end products. During the sixties, diversification efforts were carried out within existing corporate divisions, but in the early seventies, the company established a separate new venture division (NVD). Figure 1 illustrates the structure of GAMMA at the time of the study.

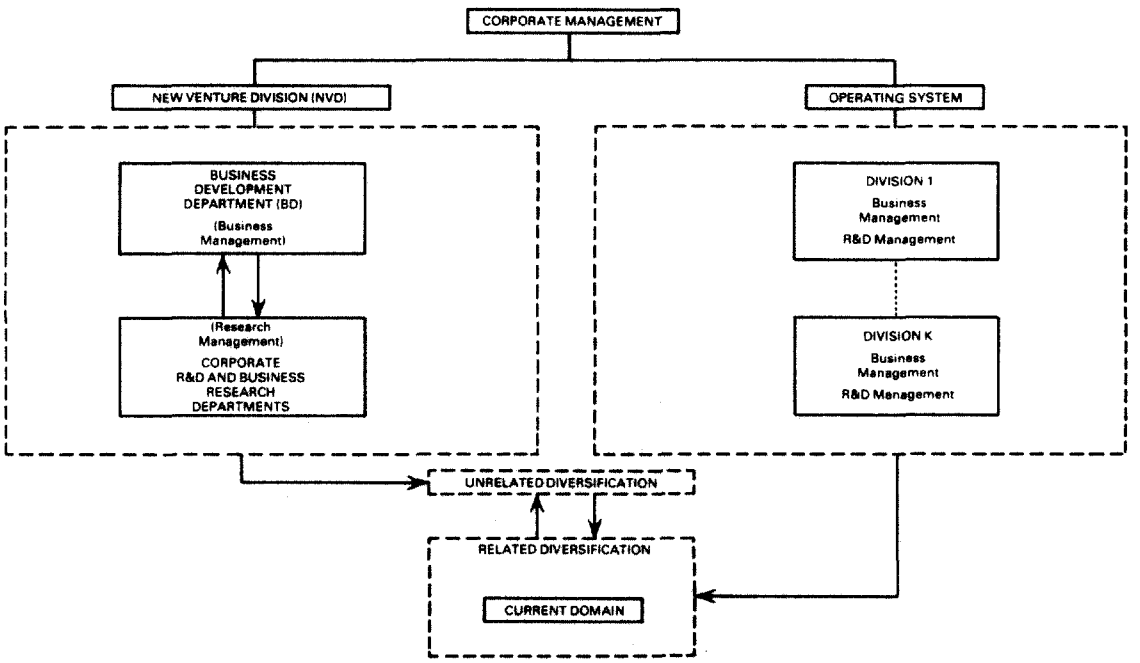

Figure 1. The structure of GAMMA Corporation.

Data were obtained on the functioning of the NVD. The charters of its various departments, the job descriptions of the major positions in the division, the reporting relationships and mechanisms of coordination, and the reward system were studied. Data were also obtained on the relationships of the NVD with the rest of the corporation. In particular, the collaboration

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between the corporate R&D department and divisional R&D groups was studied. Finally, data were also obtained on the role of the NVD in the implementation of the corporate strategy of unrelated diversification to help explain why it had been created, how its activities fit in the corporation's Strategic Business Unit system, and how it articulated with corporate management. These data describe the historical evolution of the structural context of ICV development at GAMMA before and during the research period. The bulk of the data was collected in studying the six major ICV projects in progress at GAMMA at the time of the research.

Fermentation Products was in the earliest stage of development. The new business opportunity was still being defined and no project had been formally started. Five people from this project were interviewed, some several times, between November 1976 and August 1977.

Fibre Components was a project for which a team of R&D and business people were investigating business opportunities and their technical implications. Five people in this group were interviewed between January 1977 and May 1977.

Improved Plastics had reached a point where a decision was imminent as to whether the project would receive venture status and be transferred from the corporate R&D department to the venture development department of the NVD. Seven people from this project were interviewed, some several times, between February 1977 and April 1977.

Farming Systems had achieved venture status, but development had been limited to the one product around which it had been initially developed. Efforts were being made to articulate a broader strategy for further development of the venture. This was achieved during the research period and an additional project was started. Seven people were interviewed, some several times, between November 1976 and August 1977.

Environmental Systems had also achieved venture status, but was struggling to deal with the technical flaws of the product around which its initial development had taken place. It also was trying to develop a broader strategy for further development. It failed to do so, however, and the venture was halted during the research period. Six people from the project were interviewed between March 1977 and June 1977.

Medical Equipment was rapidly becoming a mature new business. It had grown quickly around one major new product, but had then developed a broader strategy that allowed it to agglomerate medically related projects from other parts of the corporation and to make a number of external acquisitions. After the research period, this venture became a new free-standing division of the corporation. Eleven people were interviewed, some several times, between June 1976 and September 1977.

Data Collection

In addition to the participants in the six ICV projects, I interviewed NVD administrators, people from several operating divisions, and one person from corporate management. All in all, sixty-one people were interviewed. Table 1 indicates the distribution of persons interviewed over job categories.

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Table 1

Distribution of Persons Interviewed, by Job Title

	Number:
Top management of the New Venture Division (NVD)	
Director of NVD	2
Director of corporate R&D Department	1
Director of Business Research Department	1
Director of Business Development Department	2
Participants from corporate R&D Department	
R&D managers	4
Group leaders	10
Bench scientists	6
Participants from Business Research Department	
Business managers	2
Business researchers	4
Participants from Business Development Department	
Venture managers	5
Business managers	1
Technology managers	3
Group leaders in venture R&D group	3
Marketing managers	4
Marketing researchers	2
Operations managers	4
Project managers	1
Administration of NVD	
Personnel managers	1
Operations managers	1
Participants from other operating divisions	
R&D managers	1
Group leaders	2
Corporate management	
Executive staff	1
Total	61

The interviews were unstructured and took from one and a half to four and a half hours. Tape recordings were not made, but the interviewer took notes in shorthand. The interviewer usually began with an open-ended invitation to tell about work-related activities, then directed discussion toward three major aspects of the ICV development process: (1) the evolution over time of a project, (2) the involvement of different functional groups in the development process, and (3) the involvement of different hierarchical levels in the development process. Respondents were asked to link particular statements they made to statements of other respondents on the same issues or problems and to give examples, where appropriate.

A major benefit from this approach was that it was possible to interview more people than originally planned. Respondents mentioned names of relevant actors and were willing to help set up interviews with them. It was thus possible to interview the relevant actors in each of the ICV cases studied and to record the convergence and divergence in their views on various key problems and critical situations throughout the development process. In some cases, it was necessary to go back to a previous respondent to clarify issues or problems, and this was always possible. After completing an interview, the interviewer made a typewritten copy of the conversation. All in all, about 435 legal-size pages of typewritten field notes resulted from these interviews.

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The research also involved the study of documents. As could be expected, the ICV project participants relied little on written procedures in their day-to-day working relationships with other participants. One key set of documents, however, was the set of written corporate long-range plans concerning the NVD and each of the ICV projects. After repeated requests, I received permission to read the plans on site and to make notes. These official descriptions of the evolution of each project between 1973 and 1977 were compared with the interview data.

Finally, occasional behavioral observations were made, for example when other people would call or stop by during an interview or in informal discussions during lunch at the research site. These observations, though not systematic, led to the formulation of new questions for further interviews.

A PROCESS MODEL OF ICV

A Stage Model

As the research progressed, four stages of ICV development were identified — a conceptual, a pre-venture, an entrepreneurial, and an organizational stage. Table 2 indicates the stages reached in each project, the number of projects observed for each stage, and the number of real time observations of each stage.

Table 2

Stages of Development Reached by Six ICV Projects

Project	Stages			
	Conceptual	Pre-venture	Entrepreneurial	Organizational
Medical Equipment	*	*	*	*
Environmental Systems	*	*	*	
Farming Systems	*	*	*	
Improved Plastics	*	*		
Fibre Components	*	*		
Fermentation Products	*			
Projects observed	6	5	3	1
Real time observations	1	2	2	1

Note: An asterisk indicates that the project reached this stage prior to the conclusion of the study.

This research design thus resulted in seven case histories. At the project level, the comparative analysis of the six ICV cases allowed the construction of a grounded stage model that described the sequence of stages and their key activities. At the level of the corporation, the research constituted a case study of how one diversified major firm went about ICV and how the corporate context influenced the activities in each stage of development of an ICV project.

A stage model describes the chronological development of a project. It provides a description of the development activities and problems in a series of stages, which is convenient for narrative purposes. Such a model, however, is somewhat deceptive because it does not capture the fact that strategic activities take place at different levels in the organization simultaneously as well as sequentially and, sometimes, in a different order than would be expected.

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ICV Process

The process-model approach proposed by Bower (1970) for strategic capital investment projects permits one to connect the project and corporate level of analysis and to depict simultaneous as well as sequential strategic activities. Subsequent research has established the usefulness and generalizability of the process-model approach for conceptualizing strategic decision making in and around projects other than capital investment in large, complex firms (Hofer, 1976; Bower and Doz, 1979).

The inductively derived process model for ICV at GAMMA presented below shows how managers from different generic levels in the organization got involved in the development of ICV projects. The first step was to map the stages of ICV development onto the *definition* and *impetus* processes of the model. The definition process encompassed the activities involved in articulating the technical-economic aspects of an ICV project. Through the impetus process, it gained and maintained support in the organization. Definition and impetus were identified as the *core* processes of ICV.

The second step was to map the corporate-level findings onto the *strategic context* and *structural context* determination processes, which make up the corporate context in which ICV development takes shape. Structural context refers to the various organizational and administrative mechanisms put in place by corporate management to implement the current corporate strategy. It operated as a selection mechanism on the strategic behavior of operational and middle-level managers. Strategic context determination refers to the process through which the current corporate strategy was extended to accommodate the new business activities resulting from ICV that fell outside the scope of the current corporate strategy. Strategic and structural context determination were identified as the *overlaying* processes of ICV.

The third step was the documentation of the managerial activities that constitute these different processes.

Figure 2 maps the activities involved in ICV onto the process model. It shows how the strategic process in and around ICV is constituted by a set of key activities (the shaded area) and by a set of more peripheral activities (the nonshaded area). These activities are situated at the corporate, NVD, and operational levels of management.

Figure 3, which can be superimposed on Figure 2, shows how these different activities interlock with each other, forming a pattern of connections. The relative importance of activities is indicated by the different types of line segments. The data also suggested a sequential flow of activities in this pattern, as indicated by the numbers in Figure 3.

Figure 3 shows that ICV is primarily a bottom-up process and depicts the key role performed by middle management. Looking at Figure 3, entrepreneurial activities at the operational and middle levels (1, 2, 3) can be seen to interact with the selective mechanisms of the structural context (5). These selective mechanisms can be circumvented by activating, through organizational championing (6), the strategic context, which allows successful ICV projects to become retroactively ratio-

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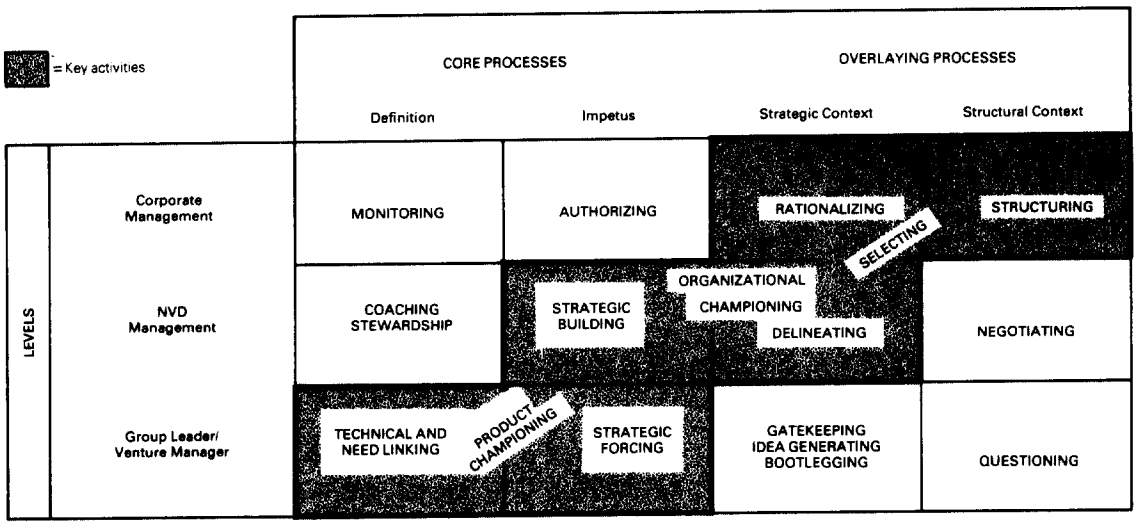

Figure 2. Key and peripheral activities in a process model of ICV.

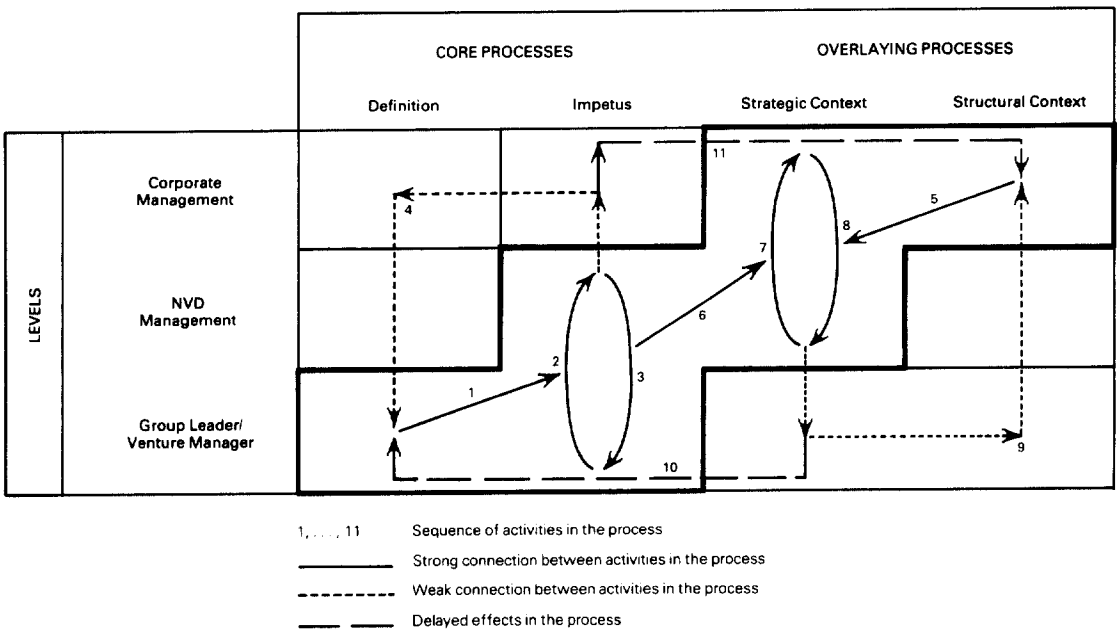

Figure 3. Flow of activities in a process model of ICV.

nalized by corporate management in fields of new business delineated by the middle level (7, 8). These parts of the pattern, represented by the full line segments in Figure 3, constitute the major forces generated and encountered by ICV projects.

The finely dotted lines in Figure 3 (4, 9) represent the connection between the more peripheral activities in the ICV process and their linkages with the key activities. Corporate management was found to monitor the resource allocation to ICV projects. Middle-level managers managed these resources and facilitated collaboration between R&D and business people in the definition of new business opportunities; however, these activities seemed to support, rather than drive the definition process. In the same fashion, authorizing further development was clearly the prerogative of corporate management, but this

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was a result, not a determinant of the impetus process. In the strategic context determination process, gatekeeping, idea generating, and bootlegging activities by operational level participants were all found to be important in developing a basis for further definition processes but seemed to be more a result of the process than a determinant of it. In the process of structural context determination, questioning of the structural context by operational level participants and efforts by middle managers to negotiate changes in it seemed to be reactive rather than primary.

The broken line segments in Figure 3 (10, 11) indicate two important delayed effects in the ICV process. First, the successful activation of the process of strategic context determination encouraged further entrepreneurial activities at the operational level, thus creating a feedforward loop to the definition process (10). Second, corporate management attempted to influence the ICV process primarily through its manipulations of the structural context. These manipulations appeared to be in reaction to the results of the previously authorized ICV projects. This created a feedback loop (11) between the core and overlaying processes.

Figures 2 and 3 and the preceding overview of the process model can now serve as a road map for detailed examination of the interlocking key activities that constitute the major driving forces in the four processes — definition, impetus, strategic context determination, and structural context determination — that together constitute ICV.

DEFINING NEW BUSINESS OPPORTUNITIES

The case data of the present study suggest that the definition process of an ICV project encompasses the conceptualization and pre-venture stages of the development process. As the definition process takes shape, an idea for a new business opportunity evolves into a concrete new product, process, or system around which a pre-venture team of R&D and business people is formed. As a result of the successful technical and market development efforts of this pre-venture team, a project grows into an embryonic business organization. These stages take place in the context of the corporate R&D department. Critical for the definition of new business opportunities are *linking processes* and *product-championing* activities.

Linking Processes

In all of the cases studied, the initiation of the definition process involved a double linking process. Technical linking activities led to the assembling of external and/or internal pieces of technological knowledge to create solutions for new, or known but unsolved, technical problems. Need linking activities involved the matching of new technical solutions to new, or poorly served, market needs.

In five out of six cases, the definition of the new business opportunity had its origin in technical linking activities in the context of ongoing research activities in the corporate R&D department. In the Fibre Components case, the idea came from a business-oriented manager, but once the idea was to be made concrete, technical linking activities began to dominate the definition process there, too. This suggests "technology first" (Schön, 1967) as the dominant mode of conceiving of a new

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venture. However, the case data also suggest that the continued viability of a project depended to a very great extent on the integration of technical and marketing considerations in the definition process.[1]

An important characteristic of ICV project definition was its autonomy from current corporate strategy. ICV project initiators perceived their initiatives to fall outside the current strategy but felt that there was a good chance for them to be included in future strategic development if they proved to be successful. For instance, in the Improved Plastics project, SURF was a process through which cheap plastics — a major business of GAMMA — could be given certain properties of expensive plastics. However, since knowledgeable and influential people at GAMMA were convinced that SURF could not work because it was too violent a process, it was very difficult to obtain formal support for work in this area.[2] The leader of the efforts in SURF persisted, however, and was capable of developing an application of the process with plastic aerosol bottles. Later on, it turned out that they had focused their efforts on the wrong size bottles for commercial application, but in the meantime a basis for corporate support had been demonstrated.

The key position in the definition process turned out to be that of group leader, a first-line supervisory position, in the corporate R&D department. This person had sufficient direct involvement in the research activities to perform technical linking activities, sufficient contact with the business side to be aware of market needs and start the need linking activities, and sufficient experience of the corporate tradition to know what might be included in corporate strategy.[3] Fermentation Products, Improved Plastics, Farming Systems, and Medical Equipment all clearly illustrated the importance of the group leader in the definition process. Fibre Components and Environmental Systems involved higher levels of management in a very superficial way in the initiating phase, but it was the group leader who was able to perform the concrete linking activities, and the higher level involvement soon became very remote even in these two cases.

Product Championing: Linking Definition and Impetus

Because group leaders were most deeply involved in the definition process, they tended to take on the product-championing activities (Schön, 1967) that formed the connection between the definition and impetus processes. Product championing was required to turn a new idea into a concrete new project in which technical and marketing development could begin to take shape. These activities required the ability to mobilize the resources necessary to demonstrate that what conventional corporate wisdom had classified as impossible was, in fact, possible. To overcome difficulties in resource procurement resulting from this conventional wisdom, product champions acted as scavengers, reaching for hidden or forgotten resources to demonstrate feasibility. SURF, for instance, demonstrated the validity of its need for pumps by using modified pumps from the corporate reserve list.[4]

Product championing also set the stage for the impetus process by creating market interest in the new product, process, or system while, from the corporate point of view, it was still in the definition process. To do so, the product champion sometimes

1

This is how the originator of the medical equipment venture recounted a story that illustrated the importance of integrating technical and marketing considerations in the definition process:

In 1968, we had a think tank session in Connecticut. A scientist from our government-sponsored lab, I found out, was working on a new way to handle and transfer blood samples, an entirely new concept, . . . but the scientist had very fixed ideas about how the product should look as a commercial product. . . .

An outside group also had discovered the existence of the scientist's idea and followed closely his recommendations. It was a small company, with a sales volume of some eight million dollars. I decided not to make "Chinese copies" of their approach. I insisted on doing market research, and actually spent two months full-time doing this. We ended up with a radical departure from the scientist's approach; we used only the nucleus of his physical concepts. We had found out some advisable product characteristics from our market research, which led, for instance, to a broader-sized "reader." We also combined the analyzer with a computer.

A further discussion of how this integration is achieved and of the issues related to the collaboration between R&D and business people in the definition process is provided in Burgelman (1980).

2

In the words of the group leader:

As with most new ideas, people would give little time to it. People "knew" that SURF was "unpractical," so the divisions did not really get involved, except in an informal way.

3

Argyris and Schön (1978: 214) noted a similar phenomenon in their Mercury case, in which key participants were those who could recognize "a Mercury problem." In the present study, however, initiators were more concerned with avoiding the work on projects that would be perceived by top management as *not* a GAMMA problem. Projects were avoided in those areas in which there had been failures in the past, in those where there might be risk to the corporation's image, or in areas having special legal liabilities.

4

Said the group leader:

But these pumps are costly, and people at the management level are afraid to commit themselves to such outlays. At that time, however, an engineer came on the project. He knew of the corporate surplus lists and got some old pumps. We rebuilt them and showed that we could pump 35 percent to 49 percent solutions. Having showed that, we could now get the pumps we needed.

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cut corners in corporate procedures, as in a case where unauthorized selling efforts were started from the R&D site before the project had become an official venture.[5] ICV projects of the nature investigated in this study thus had to be fought for by their originators. Hiding their efforts until they could show positive results clearly had survival value for product champions. Once such positive results were available, however, pressure began to build to give a project venture status and to transfer it to the business development department, where the impetus process took further shape.

The importance of product championing was especially clear in the cases where it was lacking. In the Fibre Components case, a product champion had not yet emerged, and this hampered the momentum of the project. The more careful balance between the technical and business considerations fostered in this case seemed to make the emergence of a champion more difficult. In Improved Plastics, the original product champion returned to more basic research, and the subsequent reorganization of the pre-venture team with greater balance between R&D and business people made the emergence of a new product champion more difficult. In the Farming Systems, Environmental Systems, and Medical Equipment cases, however, a product champion was able to develop a single product or system around which an embryonic business organization could be formed.

IMPETUS

The impetus process of an ICV project encompasses the entrepreneurial and organizational stages of development. Major impetus was received when a project was transferred with venture status to the business development department. At this time it acquired its own organization, general manager, and operating budget, thus becoming an embryonic new business organization in the department. In the course of the impetus process, the embryonic business grew into a viable one-product business and then, possibly, into a more complex new business with several products. The impetus process reached its conclusion in the decision to integrate this new unit into the operating system of the corporation as a freestanding new division or as a major new department of an existing division. The data indicate that there were no clear general criteria that guided the decisions to transfer projects to the business development department. Although formal screening models existed and the participants in all cases were very able in quantitiative analysis, there was little reliance on formal analytical techniques in the ICV process. This is understandable, since each project was unique and could not easily be judged by prior experience. Not surprisingly, the transfer decision thus tended to be greatly influenced by the success of the product-championing activities. The latter allowed a project to reach a threshold level of commercial activity which, in turn, created pressure for it to be given venture status. Farming Systems, Environmental Systems, and Medical Equipment all manifested this pattern. The data on these cases also indicate that after a project was transferred, its further development was highly dependent on the combination of *strategic forcing* and *strategic building* activities and their corollary forms of *strategic neglect*. These activities together give shape to the impetus process.

5

As the product champion in this case explained:

When we proposed to sell the ANA product by our own selling force, there was a lot of resistance, out of ignorance. Management did numerous studies, had outside consultants on which they spent tens of thousands of dollars; they looked at XYZ Company for a possible partnership. Management was just very unsure about its marketing capability. I proposed to have a test marketing phase with 20 to 25 installations in the field. We built our own service group; we pulled ourselves up by the "bootstrap." I guess we had more guts than sense.

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Strategic Forcing

In the first phase of the impetus process, product-championing activities were transformed into strategic forcing by the entrepreneurial venture manager. This transformation happened naturally, because, in the cases studied, the product champion had become the venture manager. Even though normative theory might question this practice, there were very strong pressures to let the technically oriented product champion become the venture manager. These pressures were in part motivational, because product champions were attracted by the opportunity to become general managers, but they also resulted because there was nobody else around who could take over and maintain momentum. Strategic forcing required that the venture manager concentrate his efforts on the commercialization of the new product, process, or system. In particular, it required a narrow and short-term focus on market penetration.

The Medical Equipment case illustrates successful strategic forcing. Under the impulse of a product champion/venture manager, this ICV project doubled its sales volume each year for five consecutive years. This created the beachhead for further development into a new, mature business.[6] Such successful strategic forcing created a success-breeds-success pattern that allowed the new venture to maintain support from top management and facilitated collaboration from people in other parts of the corporation who liked to be part of the action of a winner. In addition, the success of strategic forcing allowed the emerging venture organization to acquire substantial assets that could not easily be disposed of, thus committing the corporation.[7]

The Environmental Systems case, on the other hand, illustrates unsuccessful strategic forcing. In this case, premature commercialization caused strategic forcing to degenerate into mere selling, and technical people were forced to spend their time correcting the technical flaws of systems already sold. The resulting failure-breeds-failure pattern led first to a reduction of the control of the product champion/venture manager, then to management-by-committee, then to the termination of the venture.

The corollary of successful strategic forcing, however, was strategic neglect of the development of the administrative framework of the new venture. Strategic neglect refers to the more or less deliberate tendency of venture managers to attend only to performance criteria on which the venture's survival is critically dependent; that is, those related to fast growth. To carry out the strategic forcing efforts, the entrepreneurial venture manager attracted or was assigned generalist helpers who usually took care of more than one of the emerging fuctional areas of the venture organization. This was inexpensive and worked sufficiently well until the volume of activity grew so large that operating efficiency became an important issue. Also, as the new product, process, or system reached a stage of maturity in its life cycle, the need for additional new product development was increasingly felt. To deal with the operating problems and to maintain product development, some of the generalists were replaced with functional specialists who put pressure on the entrepreneurial venture man-

6

In the words of the venture manager:

We were convinced that we could develop simultaneously domestically and internationally. We were fearless, and, management being ignorant, we just started to do it. What we did was, in fact, a parallel international new development. That made our sales 55 percent larger and allowed a larger profit fraction. If we had not done this, we might have lost the business.

7

In the words of one of the key participants in a venture:

The mechanism is to double each year your size. The next step is then to acquire assets that are not easily disposed of. Then management cannot get rid of you that easily, and you can relax if you have a bad year.

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ager to pay more attention to administrative development. In the cases studied, this led to severe friction between the venture manager who continued to be pressured by forces in the corporate context to maintain a high growth rate, and the functional specialists.[8]

In the successful Medical Equipment venture, the venture manager neglected the administrative development of the venture and experienced increasingly strong conflicts with the professional functional managers brought in to replace the generalists. This became a problem especially in manufacturing. The venture manager also neglected to maintain close relationships with the corporate R&D group and focused everything on development efforts related to the original product. The venture R&D group, seeking its own identity, sealed itself off from corporate R&D.[9] One of the problematic results of this was that the flow of new product development never got under control. Eventually, the organizational problems and the difficulties in new product development required the replacement of the venture manager.

This study of ICV thus reveals an important dilemma in the process of radical corporate innovation. Successful strategic forcing is required if a project is to gain and maintain impetus in the corporate context. Yet, the very success of strategic forcing seems to imply strategic neglect of the administrative development of the venture. This, in turn, leads to the ironic result that the new product development may become a major problem, and to the tragic result that the entrepreneur may become a casualty in the process of gaining a beachhead for the venture.

Strategic Building

Successful strategic forcing was a necessary, but not sufficient, condition for the continuation of the impetus process. Strategic forcing had to be supplemented by strategic building activities if the project was to overcome the limitations of a one-product venture and maintain the growth rate required for continued support from corporate management. Strategic building took place at the level of the business development (BD) department manager (the venture manager's manager). Thus, consistent with Kusiatin's (1976) and von Hippel's (1977) findings, the present study identifies the venture manager's manager as a key position in the ICV process.

Strategic building involved the articulation of a master strategy for the broader field of new business development opened up by the product champion/venture manager and the implementation of this strategy through the agglomeration of additional new businesses with the original venture. This involved negotiating the transfer of related projects from other parts of the corporation and/or acquisition of small companies with complementary technologies from the outside.

The Medical Equipment case illustrates successful strategic building. From year to year, the written long-range plans showed an increase in depth of understanding of what the real opportunity was. Strategic plans grew more specific, and there was a progression in identifying problems and solving them. Based on this articulation of the principles underlying success, the BD manager negotiated the transfer of one major medically

[8] Arrow (1974) uses "salutory neglect" to denote the situation in which problems for which there are no satisfactory solutions are not placed on the agenda of the organization. Strategic neglect, independently observed in the present study, has a similar meaning. Arrow points out that neglect is never productive. In the long run, and from the perspective of the larger system, this may be true, and of course the larger system will, in time, correct for neglect. From the perspective of the entrepreneurial actor, however, strategic neglect of administrative issues was the necessary cost of forcing growth.

[9] In the words of one person who was transferred from corporate R&D to the venture:

We were, at the time, basically separated from the group in the venture. The group there wanted to identify itself. They did it to such an extent that they put a wall between themselves and us. . . . In a way, it was ironic. We were funded by the venture, and the technology that we developed was not accepted by them!

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related project from one of the divisions and was able to identify suitable acquisition candidates and convince top management to provide the resources to get them.

Strategic building was iterative in nature. The evolving master strategy reflected the learning-by-doing that resulted from the assessment of the success of the strategic forcing efforts of the venture manager. The BD manager learned to understand the reasons for the success of these efforts and used this insight to further articulate the strategy. This, in turn, increased his credibility and provided a basis on which to claim further support of the venture.[10]

The Environmental Systems case illustrates how failure to understand the nature of the opportunity prevented further progress. Over a five-year period, the long-range plans remained vague about what the opportunity was. There was no progress in terms of identifying and then solving problems. An acquisition was actually made, but it turned out to be as much technically flawed as the original system around which the venture was formed.

The Farming Systems case illustrates how the impetus received from fairly successful strategic forcing can slow down, and even halt, when strategic building is lacking. Only after a new BD manager took over and an analysis was made of the underlying principles of the business opportunity did the impetus process pick up again. The new BD manager discarded the original product, which had been the vehicle for strategic forcing, and articulated a new master strategy that led first to the redirection of the R&D efforts and then to the acquisition of two small companies with complementary technology.

Strategic building, like strategic forcing, was accompanied by strategic neglect in the Medical Equipment case. Because forces in the corporate context emphasized fast growth, the BD manager got absorbed in the search and evaluation of companies that could be acquired, in negotiations with divisions to transfer related projects, and in courting top management. The coaching of the venture manager was, again more or less deliberately, neglected, which seemed to suit the venture manager. As a result, the emerging administrative problems in the venture organization deteriorated from petty and trivial to severe and disruptive, and some high-quality people left the venture.

The personal orientations of the venture managers further reinforced this tendency in the cases in my study. The venture manager of Medical Equipment complained about a lack of guidance from the BD manager, but he also pointed out that the situation gave him leeway for his mistakes. Furthermore, he pointed out that because the venture was growing very fast, there was little time for coaching. He also admitted that his style was probably considered a bit "adversarial" by the BD manager, and that this did not facilitate the coaching process.

The venture manager of Environmental Systems also complained about a lack of guidance.[11] This manager, however, admitted that he had been eager to get the venture manager's job in spite of his lack of experience. Others in the venture organization pointed to this manager's stubbornness and lack of responsiveness to others' inputs.

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Explaining his approach, one BD manager said:

First, I look for demonstrated performance on an arbitrarily chosen — sometimes not even the right one — tactic. For instance, developing a new analyzer may not be the right move, but it can be done and one can gain credibility by doing it. So, what I am really looking for is the ability to predict and plan adequately. I want to verify your claim that you know how to predict and plan, so you need a "demonstration project" even if it is only an experiment. The second thing that I look for is the strategy of the business. That is the most important milestone. The strategy should be attractive and workable. It should answer the questions where you want to be in the future and how you are going to get there. . . . And that, in turn, allows you to go to the corporation and stick your neck out.

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Right after his replacement, this manager observed:

I should have gotten help from my management — counseling and education. Most venture managers tend to come from the technology side because these ventures require a lot of high technology input. But in the technology area there is relatively little need for broad general management skill development. I was lacking that kind of judgment.

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The present study thus suggests a second important dilemma in the strategic management process. The BD manager can spend more time trying to guide the impetuous venture manager, but this may both interfere with the strategic forcing efforts of the venture manager and limit the time available to the BD manager for strategic building activities. Or, he can leave the venture manager alone and let him run his course until the problems in the growing venture organization require his replacement, but by that time the venture itself should have reached a viable position in terms of commercial activity. The data suggest that the forces exerted by the corporate context — the emphasis on fast growth — seem to favor the second of these possibilities.

Successful strategic forcing and strategic building created a new business organization with several products and a sales volume of about 35 million dollars in the case of Medical Equipment, but important managerial problems remained to be solved. First, the effects of the strategic neglect of the administrative framework of the venture became particularly pronounced. This administrative instability was exacerbated by the fact that there was not yet a strong common orientation, and there was still a lot of opportunistic behavior on the part of some key participants in the venture organization, who seemed to work more to improve their resumes to get a better position elsewhere than for the overall success of the venture. Also, the delayed effects of the strategic neglect of new product development in the original area of business manifested themselves. Furthermore, strategic building efforts had led to the creation of a complex new business organization, where growth could no longer be maintained solely by the hard work of the venture manager. New strategies for the different business thrusts had to be generated by the organization, but this required that people work in a strategic planning framework in which the concerns of the different new business thrusts could be traded off and reconciled, and the participants were still learning to do this.

In addition to these internal managerial problems, this new venture also had to cope with the problem of securing its position in the corporation. The venture's size made it visible in the external and internal environments, and corporate management became increasingly aware of the differences in modus operandi between the new business and the rest of the corporation and of the effects of these differences on the corporate image. NVD management thus was faced with the problem of convincing corporate management that the new venture was compatible with the rest of the corporation and was moving toward institutionalization.

STRATEGIC CONTEXT

For institutionalization to take place, an area of new venturing must become integrated into the corporation's concept of strategy. Adaptation of corporate strategy at GAMMA involved complex interactions between managers of the NVD and corporate management in the process of *strategic context* determination.

Strategic context determination refers to the political process through which middle-level managers attempt to convince top

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management that the current concept of strategy needs to be changed so as to accommodate successful new ventures. Strategic context determination constitutes an internal selection mechanism that operates on the stream of autonomous strategic behavior in the firm. The key to understanding the activation of this process is that corporate management knows when the current strategy is no longer entirely adequate but does not know how it should be changed until, through the selection of autonomous strategic initiatives from below, it is apparent which new businesses can become part of the business portfolio.[12]

Critical activities in this process involve *delineating* new fields of business development and *retroactive rationalizing* of successful new venture activities. The link between the process of strategic context determination and the impetus process of a particular new venture is constituted by *organizational championing* activities.

Organizational Championing: Linking Impetus and Strategic Context Determination

The case data indicate that during the impetus process, organizational championing activities became the crucial link between the emerging new business organization and the corporate context. Organizational championing involved the establishment of contact with top management to keep them informed and enthusiastic about a particular area of development. This, in turn, involved the ability to articulate a convincing master strategy for the new field, so as to be able to communicate where the development was leading and to explain why support was needed for major moves. These activities were also performed at the level of the business development manager.

Organizational championing was, to a large extent, a political activity. The BD manager committed his judgment and put his reputation on the line. Astute organizational champions learned what the dispositions of top management were and made sure that the projects they championed were consistent with the current corporate strategy. More brilliant organizational champions were able to influence the dispositions of top management and make corporate management see the strategic importance of a particular new business field for corporate development.

Organizational championing required more than mere political savvy, however. It required the rare capacity to evaluate the merit of the proposals and activities of different product champions in strategic rather than in technical terms. Thus, in the Medical Equipment venture, a sound master strategy for the new venture and corresponding strategic building moves allowed the organizational champion to convince top management that the medical field was an attractive and viable one for the corporation. In the Environmental Systems venture, on the other hand, the failure to come up with a master strategy prevented the organizational champion from obtaining the resources needed to straighten out the technological problems of the new venture and prevented him from engaging in strategic building. His organizational championing was limited to gaining more time, but eventually top management concluded that the opportunity just wasn't there. Finally, in the

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The identification of the process of strategic context determination leads to a major extension of the process model. It suggests that the corporate context is more complex than was revealed by Bower's (1970) study of strategic capital investment projects. These projects were situated in the operating system of the corporation. Even though they were clearly strategic because of the large amounts of resources involved, they did not require a change in the business portfolio of the corporation. These projects fell within the scope of and were induced by the current concept of strategy of the corporation.

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Farming Systems venture, new impetus was developed as a result of the involvement of the same person who was the organizational champion in Medical Equipment.

Delineating

Through organizational championing based on strategic building, middle-level managers were capable of delineating in concrete terms the content of new fields of business development for the corporation. It is a critical finding of this study that these new fields became defined out of the agglomeration of specific commercial activities related to single new products, processes, or systems, developed at the level of venture projects rather than the other way around. Delineating activities were thus iterative and aggregative in nature. This was clearly reflected in the written long-range plans of the NVD in 1975, which stated: "Instead of dealing with an ever-growing number of separate arenas, the NVD should henceforth focus its attention on a critical few major fields, within each of which arenas may be expanded, grouped together, or added."

Retroactive Rationalizing

To be sure, corporate management, too, got involved in the process of strategic context determination. Top management gave indications of interest in venture activity in certain general fields and expressed concern about the fit of ongoing ICV activities with corporate resources and strategy. In the final analysis, however, corporate management's role was limited to rejecting or rationalizing, retroactively, the ICV initiatives of lower-level participants in fields delineated by middle-level management.

These findings corroborate and extend the findings of previous research. They confirm the critical role of middle-level managers in shaping the strategy of internal development in the diversified major firm (Kusiatin, 1976). More generally, these findings also extend Kimberly's (1979) observation of the paradox that the success of a new, nonconformist unit creates pressures in the larger organizational context toward conformity, thereby affecting the very basis of success. Entrepreneurial and institutional existence seem to be inherently discrete states, and middle-level management needs to bridge the discontinuity.

STRUCTURAL CONTEXT

Given the limited substantive involvement of corporate management in the process of strategic context determination, how do they try to exert control over the ICV process? The present study suggests that they did so by *structuring* an internal selection environment.

Structuring

As in the situation studied by Bower (1970), corporate management relied on the determination of the structural context in its attempts to influence the strategic process concerning ICV. The structural context includes the diverse organizational and administrative elements whose manipulation is likely to affect the perception of the strategic actors concerning what needs to be done to gain corporate support for particular initiatives. The creation of the NVD as a separate organizational unit, the definition of positions and responsibilities in the departments of

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the NVD, the establishment of criteria for measuring and evaluating venture and venture-manager performance, and the assignment of either entrepreneurially or administratively inclined managers to key positions in the NVD all seemed intended to affect the course of ICV activity.

The corporate level seemed dominant in the determination of structural context. Corporate management's manipulations of the structural context seemed to be guided primarily by strategic concerns at their level, reflecting emphasis on either expansion of mainstream businesses or diversification, depending on perceptions at different times of the prospects of current mainstream businesses.

These changes in structural context did not reflect a well-conceived strategy for diversification, however, and seemed to be aimed at consolidating ICV efforts at different levels of activity rather than at guiding and directing these efforts. The NVD was created in the early seventies because people in the divisions had been engaging in what some managers called a "wild spree" of diversification efforts. Corporate management wanted to consolidate these efforts, although at a relatively high level of activity. Key managers involved in those earlier decisions pointed out that the direction of these consolidated efforts was based on preceding lower level initiatives that had created resource commitments, rather than on a clear corporate strategy of diversification.

The lack of a clear strategy for directing diversification was also evident in 1977, when significant changes in the functioning of the NVD took place. The newly appointed NVD manager pointed out that corporate management had not expressed clear guiding principles for further diversification beyond the emphasis on consolidation and the need to reduce the number of fields in which ICV activity was taking place.

Selecting

Structural context determination thus remained a rather crude tool for influencing ICV efforts. It resulted in an internal selection environment in which the autonomous strategic initiatives emerging from below competed for survival. In all the ICV cases, strong signals of fast growth and large size as criteria for survival were read into the structural context by the participants. This affected the process, if not so much the specific content, of their behavior. The importance of product championing, strategic forcing, strategic building, and the corresponding forms of strategic neglect would seem to indicate this. The inherent crudeness of the structural context as a tool for influencing the ICV process provided, of course, the rationale as well as the opportunity for the activation of the strategic context determination process discussed earlier.

CONCLUSIONS AND IMPLICATIONS

The preceding discussion of a process model of ICV does not, to be sure, treat the entire range of phenomena associated with new ventures (Roberts, 1980) and corporate entrepreneurship (Peterson, 1981). Reasons of focus as well as space constraints prevent discussion of issues such as management of the interfaces between business and R&D people and structural and managerial innovation associated with the separate new venture division.

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The purpose here has been to construct a grounded model and to use this model as a framework for insights into the generative mechanisms of one form of corporate entrepreneurship in one type of large business organization. Verification is necessary to identify the generalizable relationships embedded in the process model generated in this paper and to identify the contingency factors that might explain variance across organizations in these relationships. The major insights gained from this exploratory study of the ICV process are recapitulated below and some major implications are briefly discussed.

First, the findings suggest strongly that the motor of corporate entrepreneurship resides in the autonomous strategic initiatives of individuals at the operational levels in the organization. High-technology ventures are initiated because entrepreneurially inclined technologists, usually at the group-leader level, engage in strategic initiatives that fall outside the current concept of corporate strategy. They risk their reputations and, in some cases, their careers, because they are attracted by the perceived opportunity to become the general manager of an important new business in the corporation. This stream of autonomous strategic initiatives may be one of the most important resources for maintaining the corporate capability for renewal through internal development. It constitutes one major source of variation out of which the corporation can select new products and markets for incorporation into a new strategy. Second, because of their very nature, autonomous initiatives are likely to encounter serious difficulties in the diversified major firm. Their proponents often have to cope with problems of resource procurement, because they attempt to achieve objectives that have been categorized by the corporation as impossible. Because such initiatives require unusual, even unorthodox, approaches, they create managerial dilemmas that are temporarily resolved through the more or less deliberate neglect of administrative issues during the entrepreneurial stage. The success of the entrepreneurial stage thus depends on behaviors that, paradoxically, have a high probability of eliminating the key actors from participation in the organizational stage. There seems to be an inherent discontinuity in the transition from entrepreneurial to institutionalized existence, as well as a possible asymmetry in the distribution of costs and benefits for the actors that may underlie the myth of the entrepreneur as tragic hero in the large corporation.

Third, the study of ICV elucidates the key role of middle-level managers in the strategy-making process in the diversified major firm. The venture manager's manager performs the crucial role of linking successful autonomous strategic behavior at the operational level with the corporate concept of strategy. Both the continuation of the impetus process of a particular ICV project and the change of the corporate strategy through the activation of the process of strategic context determination depend on the conceptual and political capabilities of managers at this level. The importance of this role seems to confirm the above-mentioned discontinuity between entrepreneurial activity and the mainstream of corporate activity.

Fourth, corporate management's role in the ICV process seems to be limited to the retroactive rationalization of autonomous strategic initiatives that have been selected by both the external environment at the market level and the internal corporate

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environment. Top management's direct influence in the ICV process is through the manipulation of structural context. These manipulations, however, seem to be predicated less on a clearly formulated corporate strategy for unrelated diversification than on concerns of consolidation. Ironically, from this perspective, the establishment of a separate, new venture division may be more a manifestation of corporate management's uneasiness with autonomous strategic behavior in the operating system than the adaptation of the structure to implement a clearly formulated strategy. The present study thus suggests that the observed oscillations in ICV activity at GAMMA may have been due to the lack of articulation between these manipulations of the structural context and a corporate strategy for unrelated diversification. It also provides further corroboration for the similar findings of Fast (1979) on the unstable position of NVDs in many corporations and for Peterson and Berger's (1971) suggestion that top management may view corporate entrepreneurship more as insurance for coping with perceived environmental turbulence than as an end in itself.

Implications for Organization Theory and Strategic Management

The research findings presented in this paper can be related to the current discussions in organization theory of the validity of rational versus natural selection models to explain organizational growth and development (Pfeffer and Salancik, 1978; Aldrich, 1979; Weick, 1979). Relatively successful, large diversified major firms like GAMMA would seem to be representative of the class of organizations that have sufficient control over their required resources to escape, to a great extent, the tight control of external selection and to engage in strategic choice (Child, 1972; Aldrich, 1979). The detailed, multilayered picture of the strategic management process presented in this paper suggests, however, that these strategic choice processes, when exercised in radical innovation, take on the form of experimentation and selection, rather than strategic planning. This is fundamentally different from the view that administrative systems "program" their own radical change (Jelinek, 1979).

Further research is needed to establish the conditions under which different systems for innovation in organizations can be adequate. The limited evidence of the present study, however, suggests that the tight coupling implied in the institutionalized approach may be inadequate for organizations with multiple, mostly mature technologies in their operating system. In an organization like GAMMA, there seems to be relatively little opportunity for generating radical innovation from within the operating system through the imposition of a strategic planning approach.

Large, complex business organizations have separate variation and selection mechanisms. Previously unplanned, radically new projects at the product/market level are generated from the relatively unique combination of productive resources of such firms. Not all of these projects are adopted, not so much because the market may turn out to be unreceptive but because they must overcome the selection mechanisms in the internal administrative environment of the firm, which reflect, normally,

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the current strategy of the corporation, i.e., the retained wisdom of previously selected strategic behavior. Thus, the experimentation and selection model draws attention to the possibility that firms may adopt externally unviable projects or may fail to adopt externally viable ones and provides a clue to why firms occasionally produce strange innovations.[13] This analysis posits a conceptual continuity between internal and external selection processes, analogous to Williamson's (1975) analysis of external and internal capital markets, to explain the existence of the conglomerate form of the divisionalized firm. Because corporate entrepreneurship, as exemplified by the ICV activities in this paper, seems to differ from traditional individual entrepreneurship, as well as from traditional organizational economic activity, it may be necessary to devise different arrangements between the corporate resource providers and their entrepreneurial agents. Further research, both theoretical and empirical, would seem useful here.

The insights generated by the present study also have some implications for further research on the management of the strategy-making process in general. Comparative research studies of a longitudinal-processual nature, carried out at multiple levels of analysis, are necessary to document and conceptualize the multilayered, more or less loosely coupled network of interlocking, simultaneous, and sequential key activities that constitute the strategy-making process. Following Bower (1970), the present study has found it useful to focus the research on a particular strategic project rather than on the strategy-making process in general. This is consistent with Quinn's (1980: 52) observation that top managers "deal with the logic of each subsystem of strategy formulation largely on its own merits and usually with a different subset of people." A concrete focus, it would seem, is more likely to produce data on the vicious circles, dilemmas, paradoxes, and creative tensions that are embedded in the strategy-making process.

Comparative analysis of process models of various strategic projects could produce grounded concepts and categories that would initially be somewhat rudimentary and evocative. Hopefully, these would stimulate the imagination of other scholars and provide the base for more formal and precise concepts of managerial activity in the strategy-making process. Eventually, this could lead to a general theory of the management of strategic behavior in complex organizations and to the conceptual integration of content and process, formulation and implementation.

The present study may then be viewed as an attempt to augment the substratum of rudimentary and evocative concepts and categories. One result of this attempt is the identification of the new concepts of autonomous strategic behavior and strategic context determination and categories of key strategic activities. Further research along these lines may be able to provide a clearer understanding of the interactions between strategy, structure, and managerial activities and skills.

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In the course of the present study, anecdotal evidence for the emergence of very unusual projects was amply available. In one case, a scientist pulled out a file with a whole series of such abortive projects, e.g., the mining of gold from sea water.

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