Technology development, severed ventures, and other aspects of corporate venture capital

by JEAN E. DE VALPINE
Memorial Drive Trust
Cambridge, Massachusetts

INTRODUCTION

The following discussion is based on the experience of Memorial Drive Trust (MDT) in connection with efforts of business corporations to participate through investment or contribution of technology, resources, or personnel, in the development of other business enterprises. We shall emphasize so-called "severed ventures," but will include an example of another approach. We shall also describe a capability in the areas of technology and product development up to and including participation in startup or early-stage technology ventures.

MDT, in accordance with its charter, views itself as being in the business of investing in and contributing on the directorate level to the maturation of enterprises comprising a very wide spectrum of business categories.

We were founded in 1951. During our first fifteen years, aside from our investment in Arthur D. Little, Inc. (ADL), we were predominantly engaged in real estate activities. Real estate development and ownership surely constitute a type of venture-capital activity within a broad definition of the term. That, however, is not the subject of principal interest to this audience.

During the early sixties we began to shift emphasis into the area of venture-capital investment in small prepublie enterprises, with a bias toward "high technology" content, and we have stayed on this course ever since. It is no secret, however, that MDT is widely perceived in association with ADL. It is fair to say that this perception has some validity in view of the fact that up until 1969 MDT owned 100 percent of the stock of ADL, and after 1969 and to the present has owned approximately 70 percent of the stock of ADL.

This association has given a corporate venture aspect to some of our activities. Nevertheless, management and operations of MDT are separate and distinct from management and operations of ADL. In general, we have operated and can operate in either the corporate venture mode or the independent venture-capital mode.

A CAPABILITY IN TECHNOLOGY AND PRODUCT DEVELOPMENT

In fact ADL itself has an active venture-capital activity called Arthur D. Little Enterprises (ADL Enterprises). In some respects, though not in all, it seems to me that ADL Enterprises has similarities to Scientific Advances Inc., the venture-capital subsidiary of Battelle Memorial Institute. ADL Enterprises includes in its domain managing and developing to feasibility or commercialization of inventions, including the handling of patent strategy. It also seeks possible spinoffs of technology and/or viable small businesses from within ADL, somewhat after the fashion of General Electric's Technical Ventures Operation. ADL Enterprises further seeks equity in other companies, in situations in which ADL can contribute technology or expertise in exchange for equity or options on equity, or perhaps alternatively on a royalty or other licensing basis. In appropriate circumstances, ADL Enterprises may also make cash capital investment.

ADL Enterprises constitutes an evolution of ADL's Invention Management Department, formed in 1958 to evaluate, process and facilitate the exploitation of proprietary inventions developed by ADL staff members, as well as those submitted from outside the company. The scope of this activity now includes active involvement and participation in new product ventures.

For inventions submitted from outside, ADL Enterprises stresses those that represent substantial technical achievements and not minor improvements, design modification, or styling changes. They are not ordinarily interested in household devices, automotive accessories, toys, games, and wearing apparel. Although ADL can act strictly as a licensing agent for fully developed inventions, it customarily manages technology to which engineering, economic, or marketing value can be added in order to maximize licensing potential. A new product invention should represent a large nongovernment market with sales potential of at least $5 million annually. A manufacturing process improvement should permit yearly savings of at least $250 thousand annually.

If after evaluation tests ADL Enterprises should decide to pursue exploitation of the invention, they will propose an agreement to create a profitable licensing situation. This usually will involve a grant to ADL of exclusive rights for a limited time to develop and license the invention, and will normally include technical and commercial assistance in order to enhance the technology. ADL will normally assume patent costs after an agreement has been made.
agreements share licensing income on a 50/50 basis, but unusual circumstances may warrant a different formula.

Based on success in development and licensing of new technology, ADL Enterprises has broadened its objectives to include: a) exploration of totally new market segments for a product already fully commercialized in a different field; b) provision of assistance to small firms lacking the necessary managerial-technical talents or finances to capitalize on valuable technology; c) cost-sharing in the development of new technology; and d) joint-venturing arrangements, including equity arrangements alluded to above. By virtue of its depth and breadth of resources, ADL is able to draw from a large pool of professionals and specialists in the major disciplines to perfect and commercialize new technology. They can then combine their knowledge of industry patterns in the marketplace with an ability to reach appropriate decision-making individuals to consummate optimum new product venture, licensing or market agreements.

Again, it should be emphasized that ADL Enterprises, like ADL, constitutes an activity organized and operated on a basis of total independence from the investment and new-venture operations of the parent, MDT. Transactions or activities in which the participations and contributions of MDT and ADL Enterprises may be either complementary or compatible are negotiated and structured strictly on an arm’s-length basis.

CERTAIN INVESTMENT DESIDERATA

With respect to MDT a brief comment is in order as to what we view as ideal venture-capital criteria, to be followed by some observations based on our experience in the corporate venture mode.

I do not think it useful to try to be too precise in describing what we seek in the way of investment opportunity. Suffice it to say that the range is $250 thousand to $2 million. We do some startups, but relatively few as a percentage. We look for evidence of outstanding potential for growth in corporate level management skills, technology, marketing expertise, and manufacturing capability. We have been and are majority shareholder in a number of companies. However we do not seek this role. Rather, in general we prefer to be one of several professional venture-capital investors.

Ideally we like situations in which ADL technical or marketing expertise can assist us in technology assessment and evaluation of market potential. However, just as the involvement of Scientific Advances Inc. does not carry with it access to free ADL professional services, the other hand, our familiarity with the capabilities of various ADL sections and divisions, and with the strengths and interests of outstanding individuals, is I believe rightly perceived as an asset which enables us to make highly efficient and effective use of a wide range of skills and knowledge. It is this characteristic which results in other venture capitalists inviting us to participate in their deals, either to strengthen their own evaluation process, or potentially to aid the enterprise subsequent to investment.

SEVERED VENTURES

I now turn to the subject of so-called “severed ventures.” In the following discussion we use the term “sponsor” or “sponsor company” to refer to the operating business enterprise which may contemplate, adopt, or execute, either as a policy or randomly, the identification, preparation, and “spinout,” “spinoff,” or “severance” of activities developed by and theretofore conducted within the sponsor company. Needless to say the terms “spinoff,” “spinout” and “severance” are here used synonymously. In general the term “severed venture” will be used as the generic term.

Of course the same company may also contemplate, adopt, or randomly execute a policy of venture-capital investment in small pre-existing outside enterprises, either by means of acquisition of equity or quasi-equity for cash, business assets, or knowhow or technology transfer. This, however, constitutes another and distinct mode of corporate venturing.

Corporate strategic planners can and have devised many modes and motivations for sponsor company involvement in severed ventures, such severed venture companies being constituted to operate autonomously with respect to the sponsor company, and to engage in technology related or unrelated to, or only peripherally or potentially related to, areas of interest within the mainstream of the sponsor’s business or business plan. In order to provide a concrete framework for purposes of observations from our experience, I shall give some examples. These examples, although adhering rather closely to fact, will be rather thinly disguised by means of nonmaterial permutations of names and facts.

Cryotec Inc.

Cryotec Inc. was severed from ADL about ten years ago. At that time revenues were in the $4-5 million range. In 1979 revenues are approaching the $80 million level. The cryogenics hardware business of ADL had evolved and been stimulated during the period when ADL was owned by MIT. The business grew slowly during the period following the acquisition by MDT from MIT of the common stock of ADL.

As a division of ADL, the cryogenics activity was at best marginally profitable. Indeed it is fair to say that the business was so embedded in the ADL R&D environment that it was extremely difficult to determine what might be its potential profitability as a discrete activity. This is a problem endemic to potential technology severances from any sponsor company having a high level of internal R&D. Suffice it to say that in the ADL environment the business was conducted in the ADL tradition of research, development and custom engineering of the highest quality. Although not demonstrably incrementally profitable to ADL from an accounting standpoint, such high-quality input provided the business with an outstanding reputation which proved to be of great value during the years of transition to genuine stand-alone independence.

The question of motivation is a basic conceptual issue for any sponsor company contemplating a program, policy or
random effort to identify and launch, as an independent severed venture, some discrete segment of its own business. What are to be the reasons and criteria for severing out a given segment of business? In the case of the severance of Cryotec from ADL the rationale was that a production-oriented activity was not in the mainstream of the traditional consulting and R&D nature of ADL's business and image, that the cryogenics business would indeed benefit by removal from the hothouse R&D atmosphere of ADL and exposure to competitive demands of the commercial marketplace, and further that, so far as could be ascertained, ADL could achieve at least as high return on equivalent investment redirected in traditional channels.

Initially the stock of the severed venture, Cryotec, was held roughly 80 percent by MDT and 20 percent by employees. ADL retained no continuing role of guidance or overview. At the present time (ten years later), as a result of several acquisitions MDT holds about 54 percent of the stock, the balance being in the hands of the public, including employees.

The business was completely severed physically from ADL and moved to a separate location. The board of the newly-severed venture consisted of two representatives of MDT, including myself, and three members of management, all of whom were former ADL staff members. All this illustrates a number of difficult questions which arise when one contemplates modes and techniques for creating an independent enterprise out of segments of an existing enterprise. Rather than list modes and discuss pros and cons, let me state some tentative conclusions.

For one thing, ultimate realization of value tends to be optimized if the severed venture can be accomplished so that it does not require over the period of the first several years any third party cash investment for working capital or other purposes. This is an ideal which happened to have been realized in the case of Cryotec. However, I would guess that generally speaking the motivation of the sponsor company would include the objective of reallocating working capital or other resources from the severed venture to ongoing or proposed operations of the sponsor. This would usually require third party investment at the outset.

Further, the management of the severed venture may view the sponsor as remaining ambivalent with respect to commitment to follow through to an ultimate achievement of permanent independence of the severed venture if outside investors are not introduced. Indeed it is natural that sponsor companies contemplating a well-thought-out severed venture program tend to be ambivalent in this respect, resulting at least from the outsider viewpoint in inconsistent and in some cases contradictory policy or practice. This is evidenced in situations in which the sponsor company attempts to negotiate the equivalent of the right to reacquire and reabsorb the severed venture within a given period of time, or contingent upon certain events.

Another important element in our view is that the organization within or affiliated with the sponsor company, and having the function of identifying the activity to be severed, executing such severance, and exercising the continuing stockholder interest of the sponsor with respect to the severed venture, should be autonomous within the management structure of the sponsor, should be professionally competent and dedicated to venture capital management, and should have continuity, coupled with a long-term charter. If this independence is not present a likely result is the inhibition and hobbling of the severed venture by reason of subjection of its decision-making processes to the ordinary procedures of the operating management hierarchy of the sponsor.

A related issue might be termed the "identification problem." Who identifies a candidate? What are the criteria for such identification? Where does the final decision lie? All this relates to motivation and the definition of objectives with respect to a severed venture program. I submit that within any given sponsor company, and especially a very large sponsor company, the set of skills required in connection with the identification problem may be somewhat different from the set of skills ordinarily associated with a private, independent venture-capital investment enterprise.

Of course the identification problem may be either more or less of a problem depending on policy criteria established by the sponsor company. Such criteria might include the following: only viable businesses of a certain magnitude, say $1 million sales or more, having a pro forma record of profitability and/or positive cash flow, and having a high probability of surviving as severed ventures without any assistance whatever from the sponsor company. Of course these need not be the criteria. One could adopt a policy of spinning out startup technology looking for a market. My personal belief, however, is that a serious, well-thought-out, long-term severed venture program to be successful must rest on a firm policy of spinning out only such sponsor company activities as can be identified and segregated in a manner such that the severed venture has a visible likelihood of viability over the first several years of independent existence.

Interesting questions arise in connection with the negotiation of details with respect to the severance from the sponsor company of the to-be independent severed venture. The negotiators include at least the prospective management of the severed venture, some of whom may be recruited from the outside for the purpose at hand, the management or division management of the sponsor company, the management of the autonomous organization or subsidiary within the sponsor company having purview of the severed venture program, and in most cases prospective outside cash investors. I might insert parenthetically that we at MDT have been in the shoes of both prospective outside cash investors and the severed venture program management organization, except that in negotiating with the sponsor company we have had the unusual advantage of being the controlling stockholder of the sponsor. Even so, the negotiations viewed from the standpoint of the severed venture program management entity can be difficult and delicate. For example, in the case of Cryotec a serious issue arose as to the extent to which ADL would retain a cryogenics capability, potentially capable of competition with the severed venture. We know this to be one of the most common issues in connection with other severed venture activities of which we are aware. It turned out that ADL did retain, on a very advanced level,
an R&D capability in cryogenics. However no competitive situations have arisen, except perhaps with respect to certain NASA and DOD programs.

The lesson, however, is that the sponsor must carefully think through and contractually delineate the ongoing relationship of the sponsor to the severed venture with respect to patents, technology, and competition. These matters will depend upon a clear understanding by the sponsor of the sponsor’s ultimate intent and objectives with respect to the severed venture. Here again the sponsor confronts the possibility and perhaps even the likelihood of incompatible or contradictory objectives or practices. The objectives may even be subject to change, and given the nature of the business organism changes of objectives may be probable. A simple example is the case of Cryotec. The original mandate to me from the MDT Board was to do what could be done to validate Cryotec as a small advanced technology activity with pretax return on investment on the order of 20 percent, and having achieved that goal, to sell or merge the severed venture into a larger company.

However, when that goal was achieved Cryotec then appeared to be justified on its merits as a continuing investment, and consequently the original objective was not executed. In some situations, but not necessarily all, such a change of objective might be disappointing to the severed venture management who might have hoped for an eventual public offering which would remove absolute majority stock control from the hands of a single entity, or who might have hoped for a merger into another entity out of which the severed venture management might emerge dominant, due to the relatively equal sizes of the merging companies.

A further question arising at the outset of the severance process is who should be CEO of the severed venture. Should the CEO come from inside the sponsor company or should he be recruited from the outside? Whichever course is followed a certain amount of luck is involved.

In the case of Cryotec the MDT Board advised that I should recruit a CEO from the outside. After interviewing all of the divisional management personnel of the cryogenics operation as it was constituted within ADL, I selected the individual who had the function of production management of the business. He turned out to be, and is widely recognized as, an outstanding CEO. I had no elaborate rationale for the choice, except that I was confident as to market acceptance and dominance, and was concerned mainly with the capability to produce profitably and cost effectively once the activity was moved out of ADL R&D environment.

**Hyperballistics, Inc.**

Our experience with Hyperballistics Inc. would make a fascinating business school case. Strictly speaking this was not an ADL severed venture. It was instead the severance of a joint-venture controlled and managed by ADL and having a third party stockholder who had acquired stock for cash. This third party stockholder quickly took the position that it had made its cash investment on the understanding that ADL would be responsible for the management of the enterprise. The third party stockholder made no distinction between ADL and MDT, and when MDT succeeded to the ADL stockholder position the third party stockholder was instantly on the phone demanding that I become Chairman of the Board of Hyperballistics.

This illustrates still another problem for a would-be sponsor company. The problem is that third party investors, with or without justification, tend to place significant weight on the fact that the severed venture is coming out of a highly-reputable sponsor company. They tend to believe that somehow, although the intention may have been disclaimed, the sponsor company will oversee and guide the management of the severed venture, and will in dire distress support and come to the aid of that venture.

For us at least, Hyperballistics also taught the lesson that a severed venture, or for that matter a corporate venture-capital involvement of any kind in an independently constituted enterprise, should be premised on that enterprise having its own full complement of managerial capability, and not being dependent by contract or otherwise for operational level management provided from within the sponsor company.

**Technical Ventures Operation**

We have had the role of cash investor in certain spinoffs executed by the former Technical Ventures Operation of General Electric Company. In each case these severed ventures have survived over a period of several years, and appear to have established viability as small businesses.

In each case the severed venture was constituted with adequate revenues and resources reasonably to assure the achievement of modest positive cash flow and profitability.

At the time of these spinoffs the Technical Ventures Operation adhered to the “three-legged stool” policy. This meant that none of the three parties in interest, namely GE, the management, and ourselves—the cash investor, should hold an absolute majority of the voting stock. Each of the three parties was represented on the board of directors with GE providing two board members, one representing the management, and ourselves—the cash investor, should represent the Technical Ventures Operation, and one to provide oversight and guidance to the severed venture by reason of special qualifications including expertise and experience in the technology or markets.

On the whole I think there is merit in this paradigm. I know that management does in fact view the “balance of power” effectuated via the three-legged stool mechanism to be very important. I believe that most cash investors would deem this attribute important. On the other hand the positive psychology of this arrangement tends to be negated to the extent that the sponsor attempts to retain rights to reacquire the severed venture. Further, the cash investor should be confident of his capability to make independent technical and market evaluations of proposed spinouts from other corporations.
ANOTHER STRATEGY—INFILTRATE, WATCH, ACQUIRE

It is my understanding that the Chairman of EG&G has described their policy for developing new ventures as utilizing a number of different mechanisms including "minority positions" without buyout agreements. They recognize that it is usually not desirable to be locked into a minority investment with no public market, but have decided to rely on persuasion rather than contract for ultimate merger.

An interesting variant of this strategy has, in fact, been successfully executed by Time Incorporated in the acquisition of American Television & Communications Corporation (ATC).

By way of preface it should be recalled that MDT during the sixties acquired a group of cable television systems of the classic variety, and placed these systems in a wholly-owned operating subsidiary, Oregon CATV, Inc. In the late sixties Oregon CATV, Inc. was combined with other aggregates of systems including the systems of Narragansett Capital Corporation and Boston Capital Corporation to form ATC. A public offering followed.

Over the following decade ATC grew rapidly while maintaining extremely strong financial condition. As a result ATC was widely perceived by industry analysts as the premier company in the industry. The market generally reflected this appreciation by awarding ATC shares a premium price in relation to the industry as a whole. Throughout this period I served on the Executive Committee and Audit Committee of ATC.

During the early seventies various analysts and writers in business publications delivered themselves of the opinion that Time Inc. had at least three major problems, including Life Magazine and Time's cable television operations and franchises. Within a rather brief interval, Time, Inc. ceased publication of Life and merged its cable television systems into ATC in exchange for ATC common stock on the order of 10 percent of the outstanding common stock of ATC. At the request and encouragement of the ATC Board, the President of Time Inc. joined the ATC Board.

ATC continued to flourish. An outstanding set of capabilities in system management and franchise acquisition was structured, and maintained, and improved. The systems and franchises contributed by Time Inc. were operated and developed with correspondingly excellent results.

In consequence, in 1978 Time Inc. made known their intention to acquire additional shares of ATC on the market and from various institutional holders on the basis that the ATC stock as such was viewed by Time Inc. as a good investment.

Subsequently, after having built their stockholdings to a position in excess of 20 percent of ATC outstanding stock, Time Inc. expressed to the ATC Board a desire to open negotiations with a view to acquisition of ATC in exchange for stock and cash. In late 1978 this acquisition was consummated on a basis attributing an implicit value to ATC on the order of $250 million.

It is true that Time Inc. paid a full and fair price for ATC. It is also true that they were not in a position to compel the ATC Board or stockholders to agree to merger. Nevertheless their familiarity with ATC, their presence on the Board, their appreciation of the turnaround accomplished by ATC in the operation of their former systems, and ultimately and especially their significant stock position, placed them in a very favorable position to observe, and to exercise the options of either holding ATC stock as an investment, selling that stock, or attempting to acquire ATC. The presence of Time Inc. as the largest stockholder of ATC tended to inhibit other potential acquirers.

CONCLUSION

If success be defined in terms of stand-alone viability as a small business, experience has shown that business enterprises can indeed be successfully identified within and severed from larger business entities. In our experience such successful severed ventures have constituted viable business units existing within the sponsor corporation prior to severance.

It would seem to be inadvisable to attempt to set up as a severed venture a startup technology, or a technology or product line not having found a meaningful market niche. With respect to such technology or product line the would-be sponsor should either undertake internally, or in collaboration with an external partner skilled in new technology and product development, the maturation of the technology or product line to a level of feasibility and commercialization, prior to attempting a severance.

It is essential that a severed venture program should have very careful thought-out objectives, definition of candidates for possible severance, procedures for identifying such candidates, severance decision processes, and structural paradigms for severed ventures. It is equally important that the execution of such program should be delegated to a professionally competent organization or subsidiary, reporting at a high level of the sponsor corporation, vested with sufficient independence and autonomy, and having a time horizon on the order of ten years.

In the execution of its mandate, such venture-capital arm of the sponsor corporation should acquire and hone the skills necessary to identify possible candidates for severance, and to negotiate in detail with parties in interest, including the sponsor corporation, with respect to the terms of severance, including ongoing future relations relating to patents, technology, competition and the basis, if any, for the provision by the sponsor corporation of guidance, assistance, and technology. And, of course, such venture-capital arm should possess the capability to provide continuing board level guidance and surveillance to severed ventures in its portfolio.