Creating New Ventures from Bell Labs Technologies

Seeking to commercialize new technologies faster, Lucent Technologies’ New Ventures Group steers between the models of venture capital and internal corporate development.

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OVERVIEW: Interest grows in the use of corporate venture capital as a way of unlocking the hidden potential of technologies which lie inside private central research labs and do not fit with established businesses. The experience of the New Ventures Group within Lucent Technologies illustrates both the challenges and the opportunities of using venture capital for these purposes. The challenge is to balance the forces of the venture capital model with those of an internal corporate development model. The New Ventures Group’s experience to date suggests that balancing these forces is difficult but that there are rewards to the organization for doing so. These include the discovery of new sources of growth, the ability to leverage internal technology across multiple businesses, and the ability to stimulate cultural change within the organization.

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Lucent Technologies began considering the use of corporate venture capital for three reasons. First, Lucent wanted to uncover new vehicles for increasing its growth. Second, it wanted to develop new mechanisms for leveraging its unparalleled technology base across multiple new business opportunities. Third, Lucent determined that it needed to increase the rate at which it commercialized its technologies, and it sought a catalyst to move technology out of the lab and into the market more rapidly.

The company began to investigate how it could accomplish these goals in the summer of 1996. It benefited from reviewing its own extensive experience with commercializing earlier technologies out of Bell Labs. It also conducted extensive external benchmarking activities to determine whether and how to utilize corporate money to finance new technology ventures. Some of this benchmarking activity involved discussion with other companies that had experience with this activity, including Intel, 3M, Raychem, Thermo- Electron, and Xerox. The planning staff also took the time for numerous discussions with the private venture capital community, including many of the leading VC partnerships, to understand how their approach to venture financing and commercializing new technologies worked. Sahlman provides an accessible overview of some of the key dimensions of the private venture capital model (1).

Lucent staff also reviewed the academic literature to learn about earlier attempts to utilize corporate venture structures to commercialize technology and foster the formation of new businesses. This corporate venturing literature illustrates the tension between strategic benefits to the corporation (which pulls a new venture group toward an internally focused, corporate development model) and maximizing the financial return from the new venture (which pulls the new venture group toward an externally focused, private venture capital model). We provide a brief review of this literature on the next page, while a more complete treatment can be found in (2).

Lucent concluded from its benchmarking activities that: 1) financing new technology ventures through corporate
venture capital is hard; 2) there are more failures than successes; 3) some of the problems that firms encountered were due to structural problems; but 4) some of the problems were the result of how the programs were managed. Armed with this information, Lucent elected to proceed, and created the New Ventures Group (NVG) in 1997. We turn now to the structural problems facing the NVG, and shall then discuss how Lucent has chosen to manage its program.

Creating the Phantom World

Lucent learned early that it needed to craft an operating model to blend the incentives, risk-taking, and speedy decision making of private venture capital with the deep technological resources and culture of Bell Laboratories. In trying to create this blend, it started with a culture that was steeped in technological capability, creativity and inventiveness. This culture had developed within a large and relatively stable business, and the key challenge for the NVG was to graft a more entrepreneurial spirit onto the culture of the organization. This required faster decisions, more individual risk taking, and greater individual identification with the business opportunities latent in the deep technical resources of the company.

To manage the cultural change process, the NVG consciously created what became known internally as “the phantom world.” The phantom world did not exist outside of Lucent; it was a hybrid constructed out of a pure venture capital organization and a large technology-based company. It could be thought of as a “half-way house” that would enable people who were not ready or able to go outside for pure venture capital to develop their ideas further within Lucent.

By being sensitive to the cultural gaps that had to be bridged, and by being sensible about the right mix of risk and reward to offer, the phantom world created a launching pad for ideas to move out of Bell Labs into markets outside of Lucent’s traditional business channels. To date, Lucent NVG has deployed 12 ventures (8 external and 4 internal), and is investing over $80 million in capital per year. Most ventures have been in the Internet, networking, software, wireless, and digital broadcast spaces, which are of strategic interest to Lucent. While most investments have yet to achieve liquidity, those that have, have brought in an 80-percent return on invested capital.

Choosing the Staff

The people whom the NVG chose to launch new ventures proved vital. The NVG managers needed the founder of each venture to personally commit him or herself to the success of the venture, even as the NVG was making a financial commitment to the venture. This commitment included the founder’s willingness to forego his or her annual bonus in return for shares in more risky “phantom stock” that would pay off only if

Lucent’s Due Diligence on Earlier Corporate Venturing

Von Hippel conducted one of the first empirical examinations of new venture divisions (5,6). He found the most robust predictor of success was the extent to which the parent company had direct prior experience in the market for which the product from the new venture was intended. This was far more important then prior technical experience with the intended technology.

Fast found that new venture divisions (NVDs) were often viewed as threatening to established businesses in the parent firm, especially when they were successful financially (7). This threat arose from the ability of the new venture to compete for corporate resources (8). As the venture realized greater success, it required more resources and was better able to convince top management that it merited more resources.

Rind explored these conflicts further (9). If the new venture was serving a market already served by the parent firm, the parent might constrain the venture’s marketing options to ensure that the new venture did not create conflict with the parent firm. Rind also identified the problem of the timing of the costs and benefits of managing new ventures. The costs required to manage a new venture successfully are incurred early in the venture’s life under one NVD manager, while the benefits of those investments, if they were indeed realized, might arise later under another manager. This could create adverse incentives for new venture managers to avoid costly, risky decisions, because they would incur the costs of those decisions without necessarily receiving credit for their benefits in a later period.

Block and Ornati examined the compensation practices of firms when they established new venture divisions (10). They found that most of the companies using corporate venture programs do not compensate venture managers any differently from their other managers. In a telling remark, an unnamed CEO of a private venture capital firm admitted: “The only reason for our existence is the inability of corporations to provide the financial incentives which can be achieved in an independent startup” (p. 44).

An important book by Block and MacMillan reviewed the wealth of material on corporate venturing (11). They argued that, “On average, in terms of the percentage of successes and failures, [private] VCs probably do no better than corporations” (p. 27). They provide contextual advice on how to manage corporate ventures. Their view is that the question is not whether corporate venturing can be done successfully but that, “The real challenge involves how to do so” (p. 13).—H.C. and S.S.
the venture succeeded. Fringe benefits within the ventures were also usually less than those in Lucent overall, and founders needed to accept that as well. When some Lucent researchers realized the commitment involved, they chose to remain researchers. Others, though, were excited about the opportunity to become entrepreneurs and to carry their research out of the lab and into the market.

The phantom world also influences the type of person who can be brought in from outside to help launch new ventures from within Lucent. A pure entrepreneur with no experience operating within a larger company would likely be unable to function effectively in the phantom world. He or she might never have seen corporate overhead charges, annual operating plans, company-wide occupational safety and environmental regulations, or other corporate policy and personnel initiatives. The NVG has found that its most effective venture managers are those individuals who combine previous entrepreneurial experience with some years of experience working in large organizations. The Group now specifies this combination of experiences to its outside recruiters when it initiates a search for a new venture manager.

There is an opposing pull as well. Managers hired from outside of Lucent, and some internal Lucent researchers, seek a truly independent venture-capital-style arrangement. This involves substantial equity options, a commitment to achieving liquidity for that stock, and a desire to pursue financial success regardless of the cost or impact upon the parent company’s business. An illustration of this is Xerox’s XTV fund. XTV was structured to function as a “pure” venture capital fund in 1989, and it succeeded in earning attractive financial returns for Xerox. However, XTV pursued these returns without regard to its impact upon Xerox’s culture as a whole, and the company decided to terminate the fund in 1996 (3,4).

**Finding a Model**

Lucent’s culture is not yet ready for such a pure model. The NVG charter is to utilize its proprietary access to
Bell Labs technology to aggressively invest in ventures that commercialize promising technologies from within Lucent. In fulfilling this charter, the NVG must work closely with Lucent’s business groups, and, at times, prod those groups into acting faster. Over time, a more entrepreneurial culture is taking root with Lucent, and this is allowing the NVG to move more toward a venture capital model.

As the NVG pursues its agenda, it must remain mindful of the Lucent culture and manage the balance of cultural forces. This balance is illustrated on the previous page. The illustration shows a number of operating dimensions in which a pure internal business development model differs substantially from a pure venture capital model.

It is useful to describe the differences between each of the models in this illustration in order to understand how NVG attempts to accomplish its mission within the larger Lucent culture. The first dimension of the Scale of the investment shows that the corporate development model generally makes larger bets, while the venture model consciously limits the size of its individual investments. The Scope of investing also differs: The corporate model looks only for strategic opportunities, while the venture model seeks diversification by making investments in many, often unrelated, spaces. The Goal of the corporate model is to create a new business, while the goal of the venture model is to achieve liquidity and financial return.

The Funding mechanisms also work differently; the corporate model supplies money on the annual budget cycle, and generally supplies all required funds, whereas the venture model provides funds in contingent stages, and usually brings in new investors at each stage to supply an objective external valuation of the company. Success is measured differently as well, with the corporate model looking at incremental annual revenue and profit while the venture model looks at its capitalized ROI at the time of exit. As a consequence, the corporate model yields fewer and larger investments and expects a high percentage of them to succeed, while the venture model expects the majority of its investments to fail, with the few winners returning enough money to earn high returns for the overall fund.

The internal operations of the models differ as well. The Focus of Work in the corporate model is one of business development, with extensive internal and external reviews conducted throughout the project. The venture capital approach is one of due diligence, with particular attention paid to the prior accomplishments of the people in the venture.

Governance differs, too, with the corporate model reporting into a hierarchical structure with multiple levels of oversight, review and potential reversals of policy. The venture model relies on the venture’s board of directors—a single level of review, with no higher committee to reverse its decisions. Not surprisingly, decisions get made faster in the venture model.

Compensation also differs greatly between the models. The corporate model manages compensation in the context of the internal labor market, seeking equity across employees in “similar” positions of responsibility, while the venture model explicitly substitutes equity incentives for cash bonuses and makes no pretense of offering equity across other ventures or other companies.

Finally, the corporate model provides mechanisms to align its initiatives with the culture and environment of the company, while the venture model does not accord any importance to this dimension.

Balancing the Opposing Forces

The illustration also shows where Lucent’s New Ventures Group chose to place itself on these different dimensions when it began to make its investments. In some cases, the NVG attempted to emulate the venture model fairly closely, as shown when the square box is on the right-hand side of that dimension’s scale. On the dimensions of Scope of investing, Success Measures, Portfolio Approach, Governance, and Decision-making, the NVG attempted to conduct its operations very much like a private venture firm. The average investment is small initially, and NVG attempted to make multiple investments to construct its portfolio. NVG also worked hard to insulate its ventures from having decisions reviewed, delayed and possibly overturned by executives in other parts of Lucent.

In other cases, the NVG chose to stay close to the corporate model, particularly on the Environment dimension. NVG is quite careful to fit in with the overall corporate culture, and makes many accommodations to be a “good citizen” within the Lucent community.

In still other cases, the NVG attempted to place itself between the models, such as with its goals, its funding mechanisms, and its compensation practices. NVG is consciously neither a business development program nor a venture capital program. Its funding, the compensation of its managers, and the incentives they receive, lie between those two approaches.
The NVG approach has evolved in the two years since it began operation. The Group has learned to invest more time and effort up-front in performing due diligence on prospective investments. To that end, its managers now specialize in specific investment areas, such as wireless communications and e-commerce, so that due diligence can be performed more rapidly. (The NVG consciously measures the time it takes to make decisions, and feels that it has reached a speed that is comparable to most venture firms.)

The NVG has also moved from seeking to supply all of the financing of its ventures to seeking to syndicate funding with outside venture firms. The composition of its boards has changed as a result, from knowledgeable technologists and consultants to partners of venture capital firms with a sizable financial stake in the venture. These outside board members add an important independent perspective, and often bring a network of useful contacts as well. Now that the venture model has gained credibility within Lucent, the NVG is shifting its focus away from many smaller investments to a few larger ones.

Stronger Connections

A final evolution has been to establish closer contacts with both lab researchers and managers within Bell Laboratories, and increasingly with business-unit managers within Lucent’s ten business groups. These latter links have proven to be increasingly valuable to the NVG, both as a source of opportunities for new ventures as well as for learning about market trends and needs. These stronger connections with the external marketplace have sped up the NVG’s due diligence process and improved its effectiveness in spotting important opportunities in a timely manner. They also increase the awareness of, and appreciation for, technical opportunities within Lucent’s business groups. Ironically, NVG’s early interest in technologies has caused some technologies to move directly into the business groups that might otherwise have been overlooked. This is one contribution NVG makes to Lucent that is not formally measured.

These closer contacts will probably continue, in part because certain ventures in the NVG portfolio may become strategic to the businesses within Lucent. In these instances, the NVG’s return may be realized by a re-acquisition of the venture by a Lucent business. One Lucent NVG company, Elemedia, was reacquired by Lucent in the summer of 1999. The price for this acquisition was set in part by the willingness of an outside company to acquire the venture. This acquisition provided another opportunity for the NVG to directly support the growth of Lucent’s business—one of the three goals that led to the creation of the NVG. However, even as these linkages grow and deepen, the NVG will have to guard against being pulled back into the corporate business development model.

The challenge for the NVG’s managers is to continue to monitor and manage the tension between these opposing corporate development and venture capital forces. If it can continue to do so, it promises to continue to engender greater entrepreneurship within Lucent and to expand its range of business models for technology commercialization of Bell Labs research.

References


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