



# **Designing New Business Startups: Entrepreneurial, Organizational, and Ecological Considerations**

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*The startups of 14 educational-software companies are investigated from three different perspectives: entrepreneurial, organizational, and ecological. The performance and stages of development of the new firms are viewed from each perspective. The entrepreneurial perspective concentrates on the characteristics and background of the founding individual. The organizational perspective looks at the planning and initial development processes of the firms. The ecological perspective uses the population of firms as a level of analysis and is concerned with the success of the industry as a whole. These three perspectives each contribute significantly to the designing of startups of new organizations.*

What factors influence the successful startup of new business? This question is important not only to entrepreneurs starting new firms, but also to a growing number of large corporations which sponsor the startup of new businesses to stimulate innovation and industry growth, and to public policy makers who view economic development as a high national priority.

With a few notable exceptions, the question of design of new businesses has received very little attention by management scholars and researchers. This is unfortunate because about one fourth of all businesses in the United States are 1 year old or less, and the median age of all firms is about 7 years. The life expectancy of new organizations is very short: 54% of all new businesses survive 1½ years and one quarter survive 6 years. Thus researchers need to go beyond

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the traditional focus on mature organizations and pay greater attention to the design of new businesses.

This research focuses on the startup and early development of 14 educational-software companies. Although this sample represents a narrow segment of total new business startups, it provides an opportunity to make an exploratory comparison of three basic approaches for studying organizational creation: entrepreneurial, organizational, and ecological. Each approach examines different aspects of the creation of organizations, focuses on different levels of analysis, employs different methods, and has its own distinct strengths and weaknesses. Prior research on new business creation has only examined one of these approaches without considering the others.

The *entrepreneurial approach* focuses on the characteristics of the founder and promoter of a new organization. The entrepreneur has been, and continues to be, the prevailing subject in the literature and folklore on organizational creation and innovation.

The *organizational approach* argues that the conditions under which an organization is planned and the processes followed in its initial development have important consequences on its structure and performance in later life. The organizational approach takes the overall network of people involved in the creation of an organization as its unit of analysis and examines the series of events, planning processes, and structural forms that emerge to mobilize collective action.

The *ecological approach* takes the population of organizations as its unit of analysis and examines the structural, political, and economic conditions which lead to the creation of new forms of organizations. The ecological approach is linked with the population ecology perspective, which emphasizes that it is the distribution of resources in society, not the motives, decisions, or behavior of individuals, that is the driving force which determines whether organizations will be created.

After a description of the specific field research setting, we empirically examine the startup success and early development of educational-software companies on the basis of: (a) background characteristics and psychological attributes of their founding entrepreneurs, (b) planning and organizational activities undertaken before and after company startup, and (c) support and resources made available to influence the development of an educational-software industry.

### **Context of the Educational-Software Companies**

#### *The Courseware Industry*

Educational software, or courseware, consists of computer programs designed for education and testing. Courseware ranges from programs intended to substitute for traditional classroom education (computer-managed instruction) to computer enhancements designed to augment traditional education (computer-assisted instruction). Some industry studies estimate that as many as 600 companies currently produce courseware in the United States. In 1982 courseware sales were estimated at \$15 million, and by 1987 sales could

approach \$3 billion ("New Learning," 1983).

The courseware industry serves three markets: educational, training, and household. The educational market includes computer-based courses in mathematics, reading, general science, and other subjects for schools and colleges. Sales of courseware to schools were about \$10 million in 1981, representing about 1% of the school market for printed materials. With courseware replacing some textbooks, traditional publishing houses are diversifying into computer courseware to protect revenues. Courseware sales in the educational market are expected to reach \$75 million in 1985, and one publishing company chairman predicts sales of courseware could overtake textbooks by 1990 ("Software Boom," 1981). Employee training courseware provides computer-based courses in general management and technical skills. In 1980 about 10% of a sample of 900 large U.S. corporations used computers for training employees; by 1982 the figure had grown to 21.6%, and 60% of those not then using computers for education believed they would do so within five years ("Are Trainers," 1982). The third market, private households, is also growing rapidly. Household courseware sales were estimated at \$167 million in 1983 and are projected to reach \$1.3 billion by 1988 (H. Kinne, personal communication, September, 1983).

As these statistics suggest, the courseware industry is relatively new and growing rapidly. Yet existing courseware firms cannot meet the demand for high quality courseware. Since software sells hardware and too little courseware is available, some computer manufacturers have elected to sponsor or support the startup of new educational-software companies.

#### *The 14 Courseware Companies*

The courseware companies participating in this study are located in Massachusetts, Pennsylvania, Illinois, and Minnesota. All 14 were supported to some extent by a large computer-manufacturing firm which could not produce courseware fast enough to meet its needs. Seven of the companies received equity investments and nonbinding commitments to purchase courseware products. In the other seven cases the sponsor and the companies entered a customer-vender relationship. All 14 companies received technical and small-business training programs created by the sponsor.

The research was undertaken from March-October 1983 to examine the factors that influence the successful startup of the 14 courseware companies. Based on literature describing the three approaches for studying organizational creation, the research was designed to measure characteristics of the entrepreneurs; the startup planning process they followed and their management, organization, finance, marketing, and production practices after company startup; as well as the firms' environments and performance. These measurements were obtained through day-long on-site interviews and questionnaires with company principals, evaluation forms completed by customers of the courseware companies, and interviews with the sponsor's liaison people who deal directly with the new firms.<sup>1</sup>

<sup>1</sup>A description of the instruments and measures used to gather the data reported in this article is available from the authors.

After the site visits the researchers drafted a case history of each courseware company. These drafts were reviewed by the company principals, returned for corrections, and provided the qualitative data base for identifying common patterns in the historical development of the new companies.

Data on two firms were not included because of special circumstances. One company was in business for only a few months and few data were available. A second company was organized as a nonprofit firm within a maximum security state prison; it was felt this firm was too unique to be comparable with the other organizations. Hence, data on only 12 firms were used for analysis.

### Performance and Stages of Development

Measuring the performance of new business startups is difficult. Performance measures for company startups must differ from traditional measures of performance. In mature businesses performance is generally a matter of profitability over time. New businesses do not have a profit history and are not usually expected to show much profit during their early years. When they do earn a

Table 1

Comparison of Low- and High-Performing Companies

Performance Criteria	Six Low-Performing Companies		Six High-Performing Companies		Statistical Difference			
	Mean	Std. Dev.	Mean	Std. Dev.	F-Ratio	p-Level		
<i>Overall Company Performance (Composite)</i>								
1. Average yearly sales	\$240*	98.1	\$307*	169.5	0.70	.42		
2. Percent yearly sales to corp. sponsor	94%	4.9	75%	21.6	4.06	.07		
3. Number yearly full-time employees	4.8	2.2	8.8	5.2	2.93	.11		
4. Number yearly part-time employees	1.6	0.9	4.0	1.2	9.94	.01		
5. Number yearly customers	2.5	1.7	5.6	3.1	4.26	.07		
6. Customer's composite evaluation (1-5 scale)	3.7	0.6	3.8	0.5	0.11	.74		
7. Corp. sponsor's liaison composite evaluation (1-5 scale)	3.3	0.5	3.9	0.5	3.43	.09		
8. Company principal's composite evaluation (1-5 scale)	3.7	0.3	3.9	0.4	0.25	.62		
<i>Correlations Among Above Performance Criteria</i>								
	1.	2.	3.	4.	5.	6.	7.	8.
Overall Performance	1.	1.00						
Yearly Sales	2.	.26	1.00					
Percent Sales to Sponsor	3.	-.54*	.40*	1.00				
FT Employees	4.	.48*	.75*	.17	1.00			
PT Employees	5.	.77*	.45*	.06	.63*	1.00		
No. of Customers	6.	.56*	.49*	-.26	.66*	.20	1.00	
Customer Evaluation	7.	.11	-.03	-.01	.30	-.05	.04	1.00
Sponsor Evaluation	8.	.51*	.41*	.19	.40*	.65*	.41*	.13
Principal's Evaluation	9.	.16	.12	-.02	-.27	.10	-.05	-.18

\*in thousands

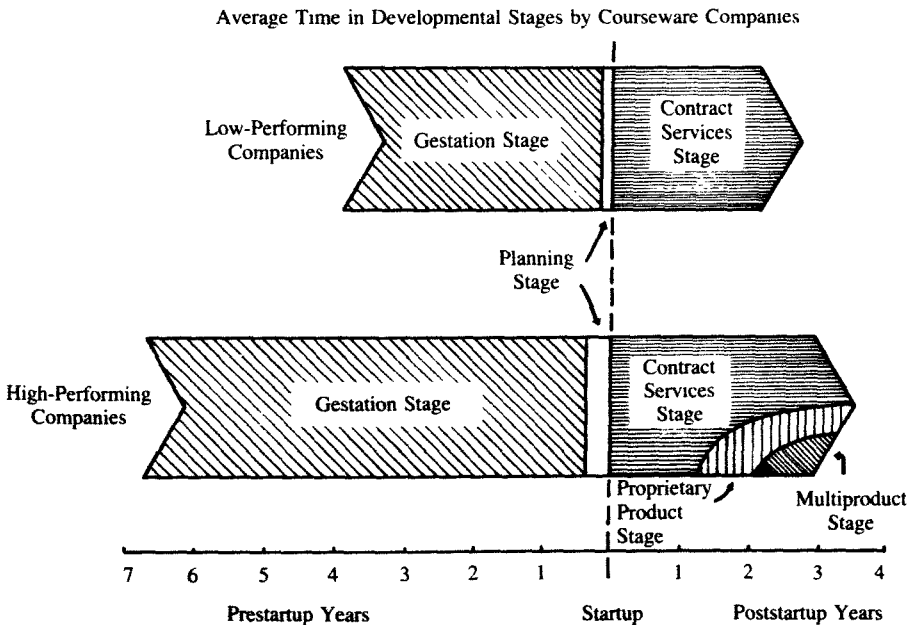
\*p ≤ .10

profit, growth-oriented, cash-hungry managers are creative in masking or deferring the profit in order to reduce taxes. One business in our study has recorded no profit over the last three years, yet is expecting royalty revenues of \$.5 million over the next few years.

Considering the odds against survival of new firms, simply remaining in business can be considered a critical measure of success. However, it does nothing to distinguish between relative levels. To separate high- and low-performing firms, criteria were chosen to reflect a variety of important concerns in judging the success of the new firms. These criteria were growth (yearly sales, number of employees, and customers), independence from the corporate sponsor (percentage of total sales to the corporate sponsor), and subjective evaluations of company performance (by company principals, corporate-sponsor liaison managers, and leading customers of the company). This composite performance measure divided the firms into two groups: six low-performing and six high-performing firms. The resulting data are listed in Table 1.

Company histories revealed that all the new firms had, or are currently working through, five identifiable stages in their development. Although these stages occur in order, they were not correlated strongly with the age of the firms. More important, stage of development and performance are perfectly correlated. All low performers were in an early stage of development and all high performers were in a later stage. As such, a firm's performance could be used to determine its stage of development and vice versa. The five developmental stages are shown in Figure 1 for both low- and high-performing companies.

Figure 1



The first stage, *gestation*, covers an extended period averaging 5.4 years (ranging from 0 to 18 years) in which the founders obtained skills and experience that prepared them for starting a courseware company. While these work activities were directly related to the courseware industry, they were not necessarily undertaken for the specific purpose of starting a courseware company.

The *planning* stage covers the period beginning with the actual decision by the entrepreneur to start a company and ending when the firm began operation. Typically, this was a comparatively brief period of about two months (ranging from 1 to 36 weeks).

The third stage is the *contract services* stage. All the firms began by providing custom contract services and continue to do so. During this stage the companies act as job shops in a feast or famine environment where they depend almost exclusively on contracts for generating revenues. As Figure 1 indicates, 6 of the 12 low performers are still operating in this stage.

While continuing to perform contract services, the six high performers have moved to a *proprietary products* stage. In developing their first proprietary products, these firms have begun to deal with the process and problems of marketing a product and finding distribution channels. Typically, proprietary product development began 28 months after the company began operations. Company principals reported the "breakaway" stage was often triggered by two key events: (a) an unsuccessful response to a proposed courseware product by the corporate sponsor, or (b) a decline or interruption in courseware development contracts.

The final stage, *multiproducts*, begins when the company develops its second, and often related, line of courseware products while continuing to maintain some contract work and market its first proprietary product. Only 3 of the 12 firms have entered this stage. After startup, the three firms took from 1½ to more than 4 years to initiate development of a second product line. This stage entailed entering into new contractual relationships or joint ventures with other companies (such as publishers or training organizations) to market and distribute new lines of courseware products.

This is a limited examination of business startups. Data on company histories were collected retrospectively, and other biases (such as response biases) may exist to some degree. The small number of firms in the sample allowed for qualitatively rich, descriptive histories of each company but quantitatively limited reliability of statistical procedures. Very large effects are needed before statistically significant results are obtained. Statistically significant findings will therefore be conservative estimates of important practical findings. With these cautions in mind, we attempt to explain variations in company startup performance and development on the bases of entrepreneurial, organizational, and ecological considerations.

### **The Entrepreneurial View**

Typically, entrepreneurship is identified with a dominant individual's characteristics. The characteristics generally describe an independent-minded, self-

made manager with a business idea or device, a strong commitment to make it marketable, and the resources and capital to start a business (Collins & Moore, 1970; Hartman, 1959; Shapero, 1975). Unfortunately, most of the research on the distinctive traits, personalities, and psychic images of entrepreneurs has been inconclusive (see Filley, House, & Kerr, 1976). However, some recent empirical progress is being made by focusing on *background*, especially education and experience (Miller, 1983); *risk orientation*, if risks are perceived as within the entrepreneur's control, and how risks are handled (Brockhaus, 1980; Hull,

Table 2  
Entrepreneurial Characteristics and Early and Later Stage

	Six Early Stage Companies		Six Later Stage Companies		Statistical Difference	
	Mean	Std. Dev.	Mean	Std. Dev.	F-Ratio	p-Level
<i>Expertise</i>						
1. Level of education (1 = high school, 2 = 1-3 yrs. college, 3 = BA, 4 = MA, 5 = PhD)	3.8	0.4	4.6	0.5	7.10	.02
2. Years experience in courseware field before company startup	9.6	8.0	12.5	8.3	0.56	.36
3. Prior small business experience (1 = no, 2 = yes)	1.7	0.5	1.2	0.4	2.51	.14
<i>Risk Orientation</i>						
4. Perceived personal bus. success (1 = internal, 2 = balanced, 3 = external)	1.5	0.8	1.0	0.0	2.14	.17
5. Perceived personal risk of bus. failure (1 = little, 2 = some, 3 = great, 4 = catastrophic)	1.7	1.2	1.3	0.5	0.35	.55
6. No. of ways mentioned to reduce risk (1 = none, 2 = some, 3 = many)	1.8	0.4	2.2	0.4	2.00	.19
<i>Business Idea</i>						
7. Breadth of vision expressed (1 = narrow, 2 = medium, 3 = broad)	1.8	0.9	2.7	0.5	3.38	.09
8. Clarity of product focus (1 = vague, 2 = general, 3 = clear, 4 = very clear)	2.3	1.0	4.0	0.0	15.62	.00
9. Source of business idea (1 = internal, 2 = external)	1.8	0.4	1.5	0.5	1.43	.25
<i>Commitment</i>						
10. Degree of personal investment	1.7	0.5	2.5	1.0	3.05	.11

Correlations

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
Education	1. 1.00									
Experience	2. .63**	1.00								
Small Business	3. -.68**	-.57*	1.00							
Internal Control	4. .44*	.18	.37	1.00						
Perceived Risk	5. -.61**	-.25	.45*	-.24	1.00					
Risks Reduced	6. .12	-.09	.15	-.06	.25	1.00				
Vision Breadth	7. .51**	.23	-.63**	-.54**	-.52**	-.22	1.00			
Product Clarity	8. .33	.15	-.46*	-.71	-.05	.12	.52*	1.00		
Idea Source	9. .23	.34	.07	.33	-.09	-.18	-.29	-.24	1.00	
Investment	10. .39*	.22	-.18	.03	.05	.01	.21	.10	-.40*	1.00
Overall Performance	11. .66**	.19	-.47*	-.42*	-.19	.41*	.50*	.78**	-.35	.48

\* $p \leq .10$

\*\* $p \leq .05$

Bosley & Udell, 1980); *business idea*, that is, vision of a marketable idea (Marquis, 1969; Timmons, 1980); and *motivation*, or willingness to work hard (Miller, 1983; Pinchot, 1983). In other words, competence, confidence, imagination, and commitment are believed to be core characteristics of successful entrepreneurs. Since many of these studies did not include measures of performance, one contribution made by the present study is the examination of how these entrepreneurial factors are related to company startup success. The data for this study, presented in Table 2, show how these entrepreneurial characteristics are interrelated and how they distinguish between company performance and stage of development of courseware firms.

### *Background*

Startup success and company stage of development are positively related to a broad set of skills and expertise exhibited by the entrepreneur. This is due to the fact that, in small businesses, the entrepreneur must often act as the central brain and agent: differentiation and specialization are not possible. In the area of entrepreneurial expertise, educational level is strongly and positively correlated with company development while years of experience in the courseware industry is unrelated.

Although Roberts (1969) found that in high-technology industries entrepreneurs with masters degrees were more successful than those with BS or PhD degrees, this study suggests that the development of educational software requires nearly a PhD degree. Indeed, 83% (five out of six) of the entrepreneurs in the later stage companies had PhDs (or had completed all but the dissertation) in education or related fields, while only 33% (two out of six) of the entrepreneurs in early stage companies had PhD degrees.

Unexpectedly, prior experience in small businesses is negatively related to stage of development. However, the data support Cooper and Bruno's (1977) finding that it is advantageous for entrepreneurs in high-tech firms to have prior experience in large companies. One explanation is the strong negative relationship between educational level and small business experience (-.68). Most PhD degree-granting institutions are large and require extensive years of study, and graduates with PhDs seldom begin their careers in small businesses.

### *Risk Orientation*

Entrepreneurs of early stage companies could be distinguished from entrepreneurs of later stage companies by the ways mentioned to reduce risk and locus of control, but not by perceived personal risk in the event of business failure. Indeed, the uniformly low levels of perceived risk that all the entrepreneurs reported is striking. One entrepreneur echoed a common response obtained from others: "If this business goes under, I'll be sorry; but it's not that big a deal. I can do something else." The principals of the later stage companies showed higher internal locus of control than the principals of the early stage firms. High internal locus of control means people perceive that the outcome of an event or activity, such as business startup, depends upon their own behavior (Rotter, 1966). These entrepreneurs saw the success of the business as being



under their control. Finally, even though the perceived risk was similar for entrepreneurs in both groups, the later stage entrepreneurs mentioned a greater number of ways that they reduced their personal risks in starting their firms.

### *Business Idea*

Although Pinchot (1983) reports that venture capitalists stress the quality and commitment of the people involved with a new business idea rather than the idea itself, a sound business idea has been stressed and linked to startup success (Timmons, 1979, 1980; Welch, 1974). The breadth, clarity, and source of the initial business idea, as described by the entrepreneurs, were all significantly related to startup success and company development. Although retrospective bias may be present in these measures, there were noticeably different scenarios portrayed by entrepreneurs of the early versus the later stage companies. During interviews, the investigators observed whether the entrepreneur focused on a narrower computer-based education business idea versus a broader computer-assisted education view. All the entrepreneurs of the later stage companies tended to see their domain in terms of computer-assisted instruction, while only 50% of the entrepreneurs of the early stage companies did so.

### *Motivation*

As the main force behind a new startup, the entrepreneur must have a high level of motivation and commitment. A personal investment indicates the entrepreneur's commitment to a new firm, and the greater this commitment the greater the probability of success. Indeed, the final distinguishing factor between entrepreneurs of early and later companies is their personal investment of time and money in starting the firm. Entrepreneurs of the later stage companies reported making greater personal investments than their early counterparts. The time commitment was significantly different. Entrepreneurs of the early stage firms averaged 47 hours per week and later stage entrepreneurs averaged 63 hours per week.

## **The Organizational View**

The organizational view emphasizes that the creation of an organization is not just an individual enterprise. Instead, it is a collective, network-building achievement that centers on the inception, diffusion, and adoption of a set of ideas among a group of people who become sufficiently committed to these ideas and transform them into a social institution (Van de Ven, 1980a, p. 131). The ways in which this collective form emerges were examined in terms of (a) the planning processes followed before company startup, (b) the organizational arrangements after company startup, and (c) the management practices used in dealing with organizational startup obstacles.

### *Planning Company Startup*

Figure 1 shows that, after a long gestation period, the courseware companies were actually planned in a very short time (averaging 2 months). However, the

activities undertaken during this short planning period were expected to influence strongly success of the courseware companies after startup. This expectation was based on Van de Ven's (1980a) ten-year study of the planning, implementation, and performance of 14 Texas childcare organizations.

One of our central hypotheses was that success in starting new businesses is strongly related to the planning process used before the companies opened their doors for business. More specifically, we hypothesized that the closer the entrepreneurs followed the Program Planning Model (PPM) in planning their companies, the greater their performance after startup. This model, developed by Delbecq and Van de Ven (1971) and extended by Van de Ven and Koenig (1976), divides the planning process into the following four activity phases:

1. **Problem Exploration:** The entrepreneur conducts a market assessment by meeting with potential customers and market analysts to identify courseware product needs and the potential niche of a company in that market.

2. **Knowledge Exploration:** The entrepreneur explores alternative methods and potential products that the company might emphasize in responding to the market needs. This is done by meeting with knowledgeable and experienced people in the courseware industry.

3. **Business Plan Development:** The entrepreneur actually develops a specific business plan, and has it reviewed by potential financiers, accountants, lawyers, and marketing experts to insure that the business plan is realistic and workable.

4. **Company Startup:** The entrepreneur commences business on a small and incremental basis so that it is possible to learn from mistakes and make the necessary adjustments to implement the business plan.

Here, entrepreneurs were asked to describe the steps they followed in planning company startup. We qualitatively coded their statements and estimated how closely the phases of the Program Planning Model were followed. Two researchers were present at each interview, and differences in coding of responses (which occurred in a small fraction of cases) were resolved through discussion.

In addition to this qualitative coding of the PPM process, measurements were also obtained of specific planning activities that are implied by the Program Planning Model. These activity measurements included: (a) the hours spent in planning the firm, (b) the degree of search in assessing the firm's market niche and competition, (c) the degree of involvement of potential customers and professional consultants in developing the business plan, (d) whether the business plan was formally documented and how detailed it was, (e) the number of people who received a copy of the business plan for review, and (f) the degree to which the entrepreneur was proactive in planning by initially contacting the corporate sponsor with the business plan.

The top of Table 3 compares the early and later stage firms on the planning process dimensions, and the bottom of the table shows the simple correlations of these planning dimensions with performance and stage of development. Overall, the results show substantial support for the hypothesis that a new company's startup planning process relates in a predictable way to company performance after it opens its doors for business. These results are consistent with Van de

Table 3  
Planning Company Startup and Early and Later Stage

	Six Early Stage Companies			Six Later Stage Companies			Statistical Difference	
	Mean	Std	Dev	Mean	Std.	Dev	F-Ratio	p-Level
1. Degree Followed Program Planning Model	0.7		0.3	1.2		0.4	3.10	.10
2. Total Hours Spent Planning	116		93	212		212	1.01	.34
3. Degree Market Assessment (1 = none, 4 = much)	1.6		1.2	2.2		0.7	0.73	.41
4. Degree Customers Involved (1 = none, 4 = much)	2.0		0.7	3.4		0.9	7.54	.02
5. Degree Professional Help (1 = none, 4 = much)	1.3		0.5	3.0		0.9	15.62	.00
6. Business Plan Documented (1 = no, 2 = yes)	2.0		0.0	1.5		0.5	5.00	.05
7. No. of Functional Areas in Plan (Detail)	5.6		1.6	6.3		2.8	0.17	.69
8. No. of People Plan Was Sent to	1.2		1.3	4.5		4.0	3.04	.12
9. Proactiveness (1 = sponsor contacted you, 2 = you contacted sponsor)	1.0		0.7	1.8		0.4	5.01	.03

Correlations of Planning Activities with Other Dimensions

Planning Process	1.	2	3.	4	5.	6	7.	8.	9.
1. Degree PPM Followed	1.00								
2. Planning Hours	.06	1.00							
3. Market Assessment	.15	.08	1.00						
4. Customers Involved	.46*	.30	.50*	1.00					
5. Professional Help	.34	.57**	.39*	.46*	1.00				
6. Plan Documented	.08	-.33	.13	-.42*	-.41*	1.00			
7. Plan Detail	-.27	.03	.25	-.22	.45*	-.18	1.00		
8. Plan Distribution	.46*	-.18	.17	.26	.37	-.43*	.37	1.00	
9. Proactiveness	.36	.40	.00	.06	.35	-.23	-.05	-.24	1.00
10. Overall Co. Performance	.49**	.32	.26	.69**	.78**	-.58**	.14	.55*	.64**

\* $p \leq .10$

\*\* $p \leq .05$

Ven's (1980a, 1980b, 1980c) findings on the startup of Texas childcare organizations.

Specifically, as in the Texas study, the more closely the entrepreneurs followed the Program Planning Model in planning company startup, the greater the company performance and more advanced the stage of development after startup ( $r = .49$ ;  $p = .05$ ). Following the PPM process was unrelated to the total hours entrepreneurs spent planning their firms ( $r = .06$ ); and the latter was positively, but not significantly, related to stage of development ( $r = .32$ ,  $p = .17$ ). On the average, the later stage companies spent 212 hours over 10.8 weeks planning their companies as compared with 116 hours over 7 weeks for the early stage firms. However, the later stage companies appeared to spend less of their planning time writing formal business plans than did the early stage firms. Instead, the data suggest that the former developed brief, but clear, outlines of their business plans and sent them out to a significantly greater number of people for review and comment. Moreover, later stage entrepreneurs

had a significantly greater degree of contact with potential customers and professional consultants in planning and in conducting assessments of their firm's market niche. They were also significantly more proactive in initiating contacts with potential corporate sponsors and customers for their products than the entrepreneurs of firms unable to move beyond the contract service stage.

While it is not possible to detect causal ordering among planning and entrepreneurial characteristics in this study (since the data were collected retrospectively), it was found that the entrepreneurs who followed the PPM more closely also expressed a broader vision of their business idea ( $r = .35$ ,  $p = .10$ ) and were clearer about the specific goals for their firms' products ( $r = .44$ ,  $p = .06$ ). This does not mean, of course, that once set, goals were rigidly maintained among the principals of companies able to reach the proprietary

Table 4

## Poststartup Organization and Management Practices with Early and Later Stage

	Six Early Stage Companies		Six Later Stage Companies		Statistical Difference	
	Mean	Std. Dev.	Mean	Std. Dev.	F-Ratio	p-Level
<i>Personnel Composition</i>						
1. Average tenure (years) of personnel	1.5	0.5	2.2	0.9	2.10	.17
2. Educational level (1 = HS, 3 = BA, 4 = MS, 5 = PhD)	3.0	0.6	3.2	0.4	0.29	.60
<i>Organizational Arrangements</i>						
1. Specialization (# job titles)	3.2	1.0	3.2	0.7	0.00	1.00
2. Standardization of procedures	3.5	0.7	3.0	0.9	0.83	.38
3. Single person in command (1 = none, 4 = much)	2.5	1.3	3.8	0.5	5.16	.05
<i>Decision Making Involvement by:</i>						
1. Board of directors	1.5	0.5	2.4	1.5	2.06	.18
2. Top management	3.6	1.3	4.6	0.5	3.18	.10
3. Company employees	3.7	1.1	3.2	1.1	0.61	.45
<i>Use of Resources</i>						
1. Capital used in year 1	\$113.7 <sup>a</sup>	68.5	\$58.0 <sup>a</sup>	82.6	1.17	.31
2. Hours worked/week by principal	47.7	13.2	63.0	6.7	5.44	.04
<i>Principal's Time Allocation (%)</i>						
1. Time spent on internal activities	56.6	17.9	40.8	17.7	2.36	.15
a. supervising employees	12.2	4.1	11.3	6.6	0.06	.80
b. working on existing products	13.6	16.6	7.0	5.4	0.87	.37
c. working on new products	13.0	11.3	14.1	13.1	0.02	.87
d. administrative paperwork	19.8	18.0	8.3	4.0	2.35	.16
2. Time spent on external activities	37.5	19.4	56.0	19.2	2.75	.12
a. contacting existing customers	18.0	7.4	23.3	13.3	0.73	.41
b. contacting potential customers	16.1	12.7	25.3	9.8	1.95	.19
c. dealing with bankers, investors	5.0	0.0	7.3	8.2	0.30	.59
3. Time spent on personal education	4.5	2.0	2.7	2.5	1.84	.20
4. Time spent on other tasks	2.4	4.3	0.3	0.8	1.35	.28
<i>Principal's Communication Frequency:*</i>						
1. With personnel within firm	4.5	0.8	4.8	0.7	.52	.48
2. With firm's board members	2.0	0.6	2.8	0.8	3.27	.10
3. With existing or potential customers	2.6	0.8	3.3	0.5	2.86	.12
4. With existing or potential financiers	2.0	0.7	3.3	0.8	0.51	.49
5. With individuals in the community	2.8	0.7	2.1	0.4	3.64	.08

<sup>a</sup>in thousands

\*Scale: 1 = No contact, 2 = Monthly, 3 = Weekly, 4 = Daily, 5 = Every half day, 6 = Hourly

product stage. "Sometimes things don't happen, sometimes they do," said one entrepreneur. "Let's face it, if you are able to have 20% of the things you plan come out, you are doing fine."

In summary, the more successful entrepreneurs intuitively followed the basic steps in the PPM model but gave little attention to formally and carefully documenting each of the steps undertaken, as two of the less successful entrepreneurs did by developing elaborate detailed documents. However, unlike a few other less successful entrepreneurs who were more private in planning company startup, the more successful entrepreneurs tended to be externally oriented by involving a broader network of potential customers and consultants in developing the market niche and specific products for their firms.

### *Poststartup Organizational Arrangements*

Not all startup performance and company development factors are attributable to the processes initially used in planning new firms and characteristics of the entrepreneurs. No business, however well conceived and planned, is likely to be free of organizational design problems. Thus, it is important to examine how

Table 5  
Correlations of Organizational Characteristics with Stage of Development

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
<i>Organizational Dimensions</i>												
1. Average Personnel	1.00											
2. Average Education	-.41*	1.00										
3. No. of Job Titles	.27	.12	1.00									
4. Standardization	.66**	.20	.05	1.00								
5. Single Command	-.66**	.39*	-.08	-.36*	1.00							
6. Board Decision												
7. Mkg. Mgmt. Decision	-.12	.23	.47*	.06	.09	1.00						
8. Employee Dec. Mkg	.02	.22	.30	.62**	.16	.43*	1.00					
9. Capital Used, Yr. 1	-.08	-.07	-.29	.16	-.17	-.51**	.03	1.00				
10. Hours worked/week	.31	.11	-.38	-.15	-.04	-.46*	-.31	.47*	1.00			
11. Company Age	-.02	.08	.19	.16	-.02	.09	.27	.05	-.13	1.00		
12. Company Performance	.37	.00	.59**	.62**	-.30	.62**	.77**	-.13	-.42	.31	1.00	
13. % Internal Activities	-.46*	.17	-.06	-.28	.58**	.41*	.49*	-.24	-.38	.61**	.15	1.00
14. % External Activities	.32	.28	.33	.44*	-.53**	-.06	-.03	.15	-.13	-.10	.26	-.44*
Principal's Communications	-.31	-.28	-.28	-.46*	.57**	-.04	-.05	-.06	.10	.12	-.38*	.46*
1. With firm members	-.19	-.16	-.20	.38*	-.40*	.04	.34	.40*	-.04	.15	.42*	.22
2. With board members	-.16	-.08	.36	-.12	.43*	.75**	.51**	-.31	-.14	.17	.44*	.52**
3. With customers	-.65**	-.02	.17	-.36	.26	.34	.14	-.26	-.73**	.24	.33	.47*
4. With financiers	-.09	.00	-.16	.17	.33	.15	.49*	.26	.53*	.25	.27	.23
5. With community	.06	-.30	.07	.09	-.31	-.13	.05	-.20	-.36	.13	.36	-.52**

\* $p \leq .10$

\*\* $p \leq .05$

poststartup organizational arrangements relate to company performance and development.

Table 4 compares the organizational designs of the early and later stage companies, and Table 5 shows the zero-order correlations among these characteristics. As a firm matures, one would expect a movement toward more task specialization and standardization of procedures. Thus, Table 5 shows that increasing company age is associated with increasing degrees of specialization and standardization of work activities, as well as greater degrees of decision-making involvement by top managers and board members. However, no significant differences were found between early and later stage firms in specialization and standardization of work activities. Both appear to use roughly the same degree and type of rules, procedures, and division of responsibilities. However, significant differences between early and later stage companies were found in four areas: personnel stability, startup scale, management control, and management practices.

*Personnel stability.* First, there was a greater stability or tenure of personnel in the proprietary product stage as compared to contract service stage. It appears that personnel stability promotes program continuity, decreases the time needed to search for and train qualified personnel, stimulates commitment, and increases opportunities to learn from mistakes.

*Scale at startup.* In a review of case studies on organizational innovations, Greiner (1970) reports that a common characteristic of unsuccessful innovation implementation attempts is the large-scale and global basis of their startup. In contrast, the successfully implemented innovations began on a small scale, were implemented incrementally, and expanded on the basis of previous success. The later stage companies implemented their startups on a smaller and more gradual basis. Indeed, while the actual capital used in the first year for early stage firms averaged \$113,000, it was only \$58,000 for the later stage firms. This finding is consistent with Van de Ven's (1980a) finding on the startup of childcare organizations.

*Management control.* Seven of the courseware firms were founded by partners who equally shared in top management control of the firm. However, Table 5 shows that having a single person in control of the firm significantly distinguishes early from later stage companies. Indeed, the degree to which there is a single top manager in control has a correlation of .58 ( $p = .02$ ) with stage of development. More later stage companies had a single person in charge.

Of the seven companies founded by partners, five encountered serious trouble with the arrangement. Severe power struggles resulted in major restructuring of top management in four of the firms and caused the fifth to dissolve. Describing the emotions and business turmoil engendered by the breakup of a partnership, one principal insisted, "I would go through 20 divorces before I would go through that again."

Of the two firms still operating as partnerships one has only been in existence for six months, and the principals are still experiencing the cohesive euphoria

that comes with a new business startup. A principal of the other partnership reported being "preoccupied" with potential problems in the partnership from the very beginning and was in the process of clarifying individual goals, objectives, and legal options with her partner. These findings are consistent with duToit (1980), who indicated that multiple founders should clarify their objectives and expectations in order to avoid conflict.

*Management practices.* As shown in Tables 4 and 5, there was significantly greater involvement by top management and board members in making decisions about company goals, strategies, and work activities in the later stage firms. Principals of the later stage firms not only work harder, they also allocate their time differently than their early stage counterparts. Typically, the former work 63 hours per week in comparison to 47 hours for the latter. While early stage principals spend a majority of their time working on internal activities, those in later stage firms spend the majority of their working time on external activities such as contacting existing and potential customers and dealing with bankers and investors. Furthermore, later stage principals have more frequent communications with employees, customers, and financiers than early stage principals. Early stage principals, on the other hand, spend significantly more time communicating with individuals in the community simply to stay abreast of events.

The overall conclusion is that later stage principals work harder, exude confidence and clarity of direction, and deeply involve themselves and members of their boards in making both strategic and operational decisions. They also maintain a richer, broader, and more complex network of ongoing relationships with people both within and outside the firm. They maintain closer ties with their potential customers, are clearer about their goals, spend a smaller proportion of their time on other tasks, and communicate less frequently with others on general matters simply to stay abreast.

### **The Ecological View**

This view of organization startup is not concerned with how to start a specific firm, but rather, with how to support the startup of an industry or population of firms. This perspective is important to governments developing policies which encourage the formation and growth of new firms and to corporations which need new industries to support their operations. The strategies used by managers or policymakers responsible for initiating an industry are much different than those used to start a new business. The survival of any particular company is irrelevant to the overall success of the industry. The Program Planning Model, which was shown to be an effective strategy for starting single businesses, does not focus on factors within the purview of an industry sponsor. Instead, industry sponsors have two alternative strategies available to them.

The first emphasizes pure competition and survival of the fittest. The sponsor can flood a niche with resources by announcing many requests for proposals, and let individual companies compete for the resources. This model is patterned after the population ecology model (Aldrich, McKelvey, & Ulrich, 1984; Hannan & Freeman, 1977). It is the model that is operative in the creation of most

industries, where independent entrepreneurs starting new businesses compete with one another for resources.

The second is patterned after the collective action view (Trist, 1981; Van de Ven & Astley, 1981). It leads to a strategy based on cooperation and interdependence. The sponsor might again flood a niche with resources, but in addition may help individual firms improve skills and develop new products. Resources may be channeled to firms in danger of extinction and help given to firms preparing for entry into a less sheltered, more competitive environment.

Thus, while the first strategy results in a highly competitive environment, the second creates a nurturing, symbiotic network (Astley & Van de Ven, 1983). The strategy an industry sponsor adopts depends on both the sponsor's philosophy and objectives. If the sponsor desires only to support the development of an industry and believes the current market is the best selection mechanism for long-term success, it will attempt to create a purely competitive environment. However, there are a number of reasons why a sponsor might choose the opposite strategy. First, the sponsor may require products which involve idiosyncratic investments of human and physical resources which result in too much uncertainty and potential for opportunism to attract an independent firm (Ouchi, 1980; Williamson, 1975, 1981). Such idiosyncratic products require close cooperation between the buyer and seller, and yet may not warrant the cost of a hierarchical arrangement between buyer and seller as Williamson might suggest. Second, the sponsor may also hope to participate in profits generated in the supported industry. Finally, the sponsor may recognize that new, small businesses produce a disproportionate number of innovations and attempt to place itself in a position to benefit from the innovations produced in the industry it is supporting.

In the startup of the 14 courseware companies the sponsor followed both strategies simultaneously. As stated earlier, seven of the firms received equity capital, technical and small business training, and assurances of ongoing support in the form of contracts for courseware spanning the firms' first three years of operation. The other seven firms were independent vendors of courseware products and bid competitively for contracts from the sponsor. However, these vendors did not face a completely competitive environment since they were

Table 6

## Sponsor Contracts Awarded to Courseware Companies

	1978	1979	1980	1981	1982	1983
Number of Equity Firms	0	5	5	6	10	10
Average Value of Contracts	\$ 0	NA	\$ 252	\$ 230	\$ 186	\$ 123
Number of Vendor Firms	5	8	8	8	10	15
Average Value of Contracts	\$ 209	NA	\$ 169	\$ 149	\$ 191	\$ 87
Total Number of Firms	5	13	13	14	20	25
Average Value of Contracts	\$ 209	\$ 161	\$ 201	\$ 183	\$ 189	\$ 101
Total Value of All Contracts	\$1043	\$2086	\$2607	\$2568	\$3774	\$2533

Note. Dollar figures are in thousands.

\*1983 figures include only January through August.



offered some of the same technical and small business training provided to the equity firms.

Table 6 illustrates the level of contracts awarded by the sponsor since 1978 to the population of firms from which our sample was drawn. The table shows that while five firms had vendor relationships with the sponsor in 1978, the equity firms were not started until 1979. For most years since then, however, the equity firms have received larger average annual contracts than vendor firms. Probably more important, the equity firms have a commitment from the sponsor for courseware contracts; the vendor firms do not (and therefore operate with greater uncertainty). Parenthetically, the rapid growth in the rate of resources poured into the courseware market by the sponsor and the rest of the industry helps explain why populations of organizations come in waves (Aldrich, 1979).

The collective action view predicts the new businesses started through corporate sponsorship will outperform independent business startups. This occurs because the former are nurtured in a symbiotic environment while the latter must directly meet the market test in a competitive environment. The population ecology model predicts the opposite. When comparing the performance and development of the corporate-sponsored equity firms with the independent vendor firms, the data do not show significant support for either strategy, though the vendor firms do marginally better. The mean stage of development for the vendor firms is somewhat higher ( $M = 1.7$ ;  $SD = .52$ ) than for equity firms ( $M = 1.3$ ;  $SD = .52$ ) at a .29 level of probability ( $F$ -ratio = 1.25). With vendor firms coded as 1 and equity firms as 2, the correlation of organizational form with stage of development and performance is  $-.33$  ( $p = .17$ ). While not statistically significant, the data suggest a negative association between the level of sponsorship and the stage of company development for the new business startups.

The population perspective holds that businesses survive by following a survival path (Aldrich et al., 1984), a set of strategies adopted to meet the market test. A survival path can only be identified retrospectively: that is, the strategy adopted by ultimate survivors determines a niche's survival path. In the 12 courseware companies, proprietary products appear to be an important element of the industry's survival path. Almost all of the entrepreneurs (11 of 12) identified proprietary products as an essential factor leading to high performance and survival. This consensus can be explained by the fact that less successful firms will imitate more successful firms. If the more successful firms are developing proprietary products, observers will identify this strategy as the probable survival path.

Given the small sample size of this study and the exploratory nature of the data analysis, it is impossible to generalize from the results. But the findings do raise interesting questions about the relative effectiveness of alternative industry support strategies. The data suggest that independent vendors competing in a competitive environment reach an advanced stage of development more quickly than equity firms operating in a nurturing, symbiotic environment. It appears that vendor firms have engaged in a struggle for life, in which the market test determines survival (Aldrich et al., 1984). In the short period since their

formation, the equity firms have developed in a more nurturing environment where they have been partially buffered from the shock of the environment.

These results would seem to indicate that nurturing new business startups places them at a disadvantage. Yet, this may not necessarily be the case in the long run. As Aldrich et al. (1984) point out, greater organizational variation improves the probability of future survival. A nurturing environment allows more experimentation, generalization rather than specialization, and more intraorganizational variation. Thus, in the long run, firms created in a nurturing environment with corporate sponsorship may achieve greater performance and more advanced development than those that are forced to specialize too soon. Only longitudinal studies can properly address this question.

### Concluding Summary

Previous research on organizational creation tends to focus on one of three approaches: entrepreneurial, organizational, or ecological. Each examines different aspects of creation, considers different levels of analysis, and provides different answers to the question "What factors influence the successful startup of new firms?" However, each approach only provides a partial answer to the question.

The present research compared the contributions of the three approaches in examining the differential startup success of 14 educational-software firms. In varying degrees, empirical support has been found for key propositions from each of the three approaches, and each has provided a broader appreciation of the research question and future research implications.

In terms of the entrepreneurial approach, the following entrepreneurial characteristics were significantly associated with startup success and development of the courseware firms: (a) education and experience, (b) internal locus of control and number of ways to reduce risk, (c) a broad and clear business idea, and (d) personal investment in the new firm. In other words, competence, confidence, imagination, and commitment were the core personal characteristics that distinguished between entrepreneurs of later stage and early firms.

The organizational approach argues that the startup of a new firm is a collective achievement. Here, the entrepreneur is the catalyst who orchestrates a planning process and mobilizes an expanding network of people into an organizational form. We found that the process by which this planning was undertaken was significantly associated with the startup and development of the firms. Specifically, the more closely the entrepreneurs followed the Program Planning Model during company startup, the greater the probability of achieving later stage development.

Startup success was also related to stronger involvement of potential customers and professional consultants in planning and market assessments. However, entrepreneurs of the more successful firms appeared to spend less time writing formal business plans than did their lower performing counterparts. Instead, the former developed brief, but clear, outlines of their business plans and sent them to more people for review and comment.

However, even well conceived and planned businesses are likely to have organizational design problems. Thus, we examined organizational arrangements and management practices of the new firms after startup. We found that startup success was significantly associated with: (a) implementing startup on a small scale with incremental expansion, (b) having a single person in command (most partnerships experienced power struggles soon after startup), and (c) active involvement of top management and board members in decision making. In conclusion, principals of later stage firms not only work harder, but also allocate their time differently, than do their early stage counterparts. The former maintain a richer and broader network of ongoing relationships and product initiatives than do the latter. They also maintain closer potential-customer relationships, have clearer goals, spend more time on internal and external communication, and deeply involve themselves and their board members in both strategic and operational decisions.

In terms of the ecological approach, two models were used to examine whether the sponsor should be starting new businesses or a courseware industry. One model is patterned after the population ecology model and results in a competitive environment for new businesses. The other is patterned after the collective action model and creates a nurturing, symbiotic network of relationships between a corporate sponsor and selected new businesses.

Although a longitudinal study is needed to address the question, our data suggest that, in the short run, nurturing new business startups through corporate sponsorship places them at a disadvantage compared to independent business startups, which compete more strenuously for resources and survival. However, in the long run, sponsorship of new businesses may yield greater performance and a more advanced stage of development than a competitive environment because a nurturing environment allows for more adaptability.

In conclusion, we must restate the study's limitations: (a) retrospective historical data which limit causal inferences, and (b) a small, single-industry sample which limits generalizations. Nevertheless, the multiple-perspective approach used here appears to lead to a broader understanding of new business startups.

### References

- Aldrich, H. (1979). *Organizations and environments*. Englewood Cliffs, NJ: Prentice-Hall.
- Aldrich, H., McKelvey, B., & Ulrich, D. (1984). Design strategy from the population perspective. *Journal of Management*, 10, 67-86.
- Are trainers really using high-tech instructional methods? (1982, February). *Training*, 19(2), p. 68.
- Astley, W.G., & Van de Ven, A.H. (1983). Central perspectives and debates in organization theory. *Administrative Science Quarterly*, 28, 245-273.
- Brockhaus, R.H. (1980, August). Psychological and environmental factors which distinguish the successful from the unsuccessful entrepreneur: A longitudinal study. Paper presented at the 40th annual meeting of the Academy of Management, Detroit.
- Collins, O., & Moore, D.G. (1970). *The organization makers*. New York: Appleton-Century-Crofts.
- Cooper, A.C., & Bruno, A. (1977). Success among high-technology firms. *Business Horizons*, 20(2), 16-22.

- Delbecq, A.L., & Van de Ven, A.H. (1971, September). A group process model for problem identification and program planning. *Journal of Applied Behavioral Science*, 7, 466-492.
- duToit, D.F. (1980). Confessions of a successful entrepreneur. *Harvard Business Review*, 58(6), 44-48.
- Filley, A.C., House, R.J., & Kerr, S. (1976). *Managerial process and organizational behavior*. Glenview, IL: Scott, Foresman.
- Greiner, L.E. (1970). Patterns of organizational change. In G. Dalton & P.R. Lawrence, (Eds.), *Organizational change and development* (pp. 213-229). Homewood, IL: Irwin-Dorsey.
- Hannan, M.T., & Freeman, J. (1977). Obstacles to comparative studies. In P.S. Goodman, J.M. Pennings, & Associates (Eds.), *New perspectives on organizational effectiveness* (pp. 106-131). San Francisco: Jossey-Bass.
- Hartman, H. (1959). Managers and entrepreneurs: A useful distinction. *Administrative Science Quarterly*, 3, 429-451.
- Hull, D.L., Bosley, J.J., & Udell, G.G. (1980). Renewing the hunt for the heffalump: Identifying potential entrepreneurs by personality characteristics. *Journal of Small Business Management*, 18(1), 11-18.
- Marquis, D.G. (1969, November). The anatomy of successful innovations. *Innovation*, 7, 29-37.
- Miller, D. (1983). The correlates of entrepreneurship in three types of firms. *Management Science*, 1983, 29(7), 770-791.
- New learning games make the grade. (1983, January 24). *Business Week*, p. 81.
- Ouchi, W.G. (1980). Markets, bureaucracies, and clans. *Administrative Science Quarterly*, 25, 129-141.
- Pinchot, G. (1983, June). Managing for innovation. *Marketing Communications*, 8(6), 35-38.
- Roberts, E.B. (1969). Entrepreneurship and technology. In W.H. Gruber & B.G. Marquis (Eds.), *Factors in the transfer of technology*. Cambridge: Massachusetts Institute of Technology.
- Rotter, J.B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs*.
- Shapero, A. (1975). The displaced, uncomfortable entrepreneur. *Psychology Today*, 11(7), 83-89.
- Software boom for publishers. (1981, July 27). *Business Week*, pp. 68E-68H.
- Timmons, J.A. (1979). Careful self-analysis and team assessment can aid entrepreneurs. *Harvard Business Review*, 57(6), 198-206.
- Timmons, J.A. (1980). Business plan is more than a financing device. *Harvard Business Review*, 58(2), 28-34.
- Trist, E.L. (1981). The evolution of sociotechnical systems as a conceptual framework and as an action research program. In A.H. Van de Ven & W.F. Joyce (Eds.), *Perspectives on organization design and behavior* (pp. 19-75). New York: Wiley.
- Van de Ven, A.H. (1980a). Early planning, implementation, and performance of new organizations. In J.R. Kimberly, R.H. Miles, & Associates (Eds.), *The organizational life cycle* (pp. 83-133). San Francisco: Jossey-Bass.
- Van de Ven, A.H. (1980b). Problem solving, planning, and innovation, Part I: Test of the program planning model. *Human Relations*, 33, 711-740.
- Van de Ven, A.H. (1980c). Problem solving, planning, and innovation, Part II: Speculations for theory and practice. *Human Relations*, 33, 757-779.
- Van de Ven, A.H., & Astley, W.G. (1981). Mapping the field to create a dynamic perspective on organization design and behavior. In A. H. Van de Ven & W.F. Joyce (Eds.), *Perspectives on organization design and behavior*, (pp. 427-468). New York: Wiley-Interscience.
- Van de Ven, A.H., & Koenig, R., Jr. (1976). A process model for program planning and evaluation. *Journal of Economics and Business*, 28 (3), 161-170.
- Welch, J.A. (1974, March). Investing in the entrepreneur. Vail, CO: *Caruth Institute Proceedings*.
- Williamson, O.E. (1975). *Markets and hierarchies: Analysis and antitrust implications*. New York: Free Press.

Williamson, O.E. (1981). The economics and organization: The transaction cost approach. *American Journal of Sociology*, 87, 548-577.

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### **Manuscripts Accepted for Publication**

Strategic Planning and Organizational Performance: A Critical Appraisal. Charles B. Shrader (School of Business Administration, 300 Carver Hall, Iowa State University, Ames, IA 50011), Lew Taylor, and Dan R. Dalton.

The Effects of Group Performance on Cognitions, Satisfaction, and Behavior: A Process Model. Peter W. Dorfman (Department of Management, Box 3DJ, New Mexico State University, Las Cruces, NM 99003) and Walter G. Stephan.

The Harvard "Pareto Circle" and the Historical Development of Organization Theory. Robert T. Keller (Department of Management, University of Houston, Houston, TX 77004).

Identifying Moderator Variables Using Multiple Regression: A Reply to Darrow and Kahl. Steven L. Wise (22 Teachers College, University of Nebraska-Lincoln, Lincoln, NE 68588-0444), Lawrence H. Peters, and Edward J. O'Connor/Rejoinder: Douglas R. Kahl (Dept. of Finance, College of Business and Administration, Southern Illinois University at Carbondale, Carbondale, IL 62901) and Arthur L. Darrow.

A Comparison of Centralization/Decentralization of Decision Making Concepts and Measures: A Research Note. Nancy M. Carter (Department of Management, College of Business Administration, University of Notre Dame, Notre Dame, IN 46556) and John B. Cullen.

Making Sense of Organizationally Based Environmental Disasters. Robert P. Gephart, Jr. (Faculty of Business, Central Academic Building, University of Alberta, Edmonton, Alberta, Canada T6G 2G1).

Priming and Consistency Artifacts in Studies in "Need Satisfaction" Models: Is There a Problem? Eugene F. Stone (Graduate School of Business Administration, New York University, 100 Trinity Place, New York, NY 10006) and Hal G. Gueutal/Rejoinder: Gerald R. Salancik (University of Illinois, 1206 S. Sixth Street, Champaign, IL 61820).

A Comparison of Pre- and Post-Employment Work Values. Lawrence T. Pinfield (Faculty of Business Administration, Simon Fraser University, Burnaby, British Columbia, Canada V5A 1S6).

The Effect of Organizational Emphases upon the Diffusion of Information About Innovations. Eric Hoffman (Department of Sociology, Newcomb College, Tulane University, New Orleans, LA 70118) and Paul M. Roman.

Mediation: The Effects of Mediator Proposals, Number of Issues, and Altered Negotiator Aspirations. James A. Wall, Jr. (239 Middlebush Hall, University of Missouri-Columbia, Columbia, MO 65211).

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