A Methodology and Model for Assessing Entrepreneurial Ventures

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Abstract

Evidence suggests that small firms benefit from business planning as new ventures are assessed and started. Yet relatively few make use of business planning, or go about such planning in an inconsistent way that invites errors and omissions. This paper presents a systemized web-based venture planning model that provides opportunities for entrepreneurs to collect the appropriate information and assess their ventures. This model is based on the stage-gate theory of new venture management and provides self-motivated feedback progressively over a series of stages. Each stage represents a unique level of analysis crucial to accepting or rejecting proposed ventures. In the process of completing the model, a business plan is created. The results of the model are illustrated with a business plan of a case study.

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Introduction

The increased interest in value-added agricultural ventures is a significant trend in rural America. Unfortunately the commercial potential of value-added ventures and innovations is not obvious, often is not realized, and may be frequently over-estimated. A systemized process for venture assessment and planning is needed to structure the often haphazard development associated with such ventures if they are to be successful. The process must progressively collect the information necessary to judge the viability of a project. Guiding new entrepreneurs using a structured business planning process would increase the likelihood that high quality decisions are made on value-added ventures. This paper presents such a method and illustrates its application to a specific new venture project in the Midwest grain industry.

Of interest here are small businesses, which would likely be the ones most likely to be formed in value added ventures relating to agriculture and food. The importance of small business (in general) for the economy has been repeatedly asserted by statistics from the Small Business Administration (SBA). The SBA defines small businesses as firms with one but fewer than 500 employees. Thus 99 percent of the 21 million entities filing a business tax return in the US are small businesses. Nearly half of the small businesses have fewer than five employees, while 90 percent have less than 20 employees—about 70 percent are sole proprietors (Dennis).

The Importance of Planning

An important question that entrepreneurs should ask themselves early in the venture planning process is whether they should write a formal business plan. While the entrepreneur may be challenged for time when a venture is being formed, there are a number of reasons to develop a business plan. First, such a business plan may provide direction by encouraging entrepreneurs to evaluate where they want to take the venture and define what they want out of it. Second, a business plan provides structure to entrepreneurs' thinking by making sure they have considered the most important determinants of success. Third, it may help them think about the future; for instance, a business plan can assist in developing a response to competitors. So a good plan can act as a blueprint as entrepreneurs implement their goals or face adversity. Finally, a business plan may help communicate the essentials of the business venture, not only to financiers, but also employees and potential employees, suppliers, and customers. As a communication tool, a carefully developed plan can be used to elicit the reactions and suggestions of others which can then be used to develop a more successful venture.

These arguments intuitively reinforce the concept that formal business planning is important. However, while research supports a link between business planning and performance, this link is not wholeheartedly supported. Gibson and Cassar indicate that many studies support a causal relationship between business planning and venture success, but some are unable to show.

1 This paper presents the framework and the conceptual base for the Agricultural Innovation and Commercialization (AICC) Business Planner, developed by Jay Akridge, Michael Boehlje, Craig Dobbins, Cole Ehmke, Joan Fulton, Allan Gray and Maria Marshall at Purdue University’s Department of Agricultural Economics with funding from the USDA Rural Business-Cooperative Service.
any relationship. Rue and Ibrahim similarly note that attempts to show a connection produce “mixed” results.

Yet there is still the strong assertion that business planning is a worthwhile activity and an important part of effective management in increasing profitability (Berman, Gordon and Sussman). This paper accepts the argument that business plan development is a useful activity and views planning as a basic and, hence, important function of management. Planning is a continuous process involving the development of workable policy as well as scheduling the daily operations. Through planning an entrepreneur decides what action to take, when to take action, where to take it, and how to go about taking such action. Compiling a business plan provides a useful structure for thinking comprehensively about a venture.

Who Plans?

Studies have assessed business planning from the perspective of size of firm and whether or not a formal (written) business plan was present. Perry, for instance, found a statistically significant relationship between formal business planning and firm size (e.g. that larger firms planned more). Gibson and Cassar indicate that larger firms tend to make use of general planning more than small firms.

Formal (written) business planning is rare in firms with fewer than five employees (Perry). For small firms the value of writing a business plan may be perceived to be limited because the size of the projects undertaken are small, and the entrepreneur may not be required to write a business plan in order to borrow money (funding would come from another source such as personal equity, family members, or angel investors). Since many new value added agricultural ventures are smaller, they may plan less. And that planning may be incomplete and haphazard, generating results that have limited value. Planning assistance would likely be of value to these firms, especially in avoiding the losses of beginning a venture in which measured planning would have suggested that no real market opportunity existed.

Why Plan?

Usually, a business plan is written in a particular and important time of a venture’s life cycle such as exploration, start-up, growth or turn-around phases. According to Irish research (Kinsella et al.) companies produce a business plan for evaluation, problem finding and solving, and managerial information purposes. Fast growth companies use more planning than slower growth companies, and they tend to more often have a written business plan than their counterparts (Rue and Ibrahim). Fast growth companies have written their business plans usually before the venture has been started. In many cases, if an entrepreneur looks for external funding a business plan is recommended, if not mandatory. Therefore, there are company-based (the need to grow according to a plan) and externally-based (external funding) reasons for writing a business plan. But, as suggested by Drucker (1986), many of the business plans that are written for the needs of external financiers are not that useful for company internal development. Mintzberg warns of the dangers of superfluous, inaccurate and ineffective planning.

Elements of a Business Plan

So what is a business plan—what does it encompass? A business plan is usually produced for the evaluation of the new venture potential, feasibility and profitability. A business plan is a carefully written logical framework for a company where the venture is evaluated as the sum of
its various parts or components. The plan’s components should be in balance because they are interrelated.

While there are a number of ways to effectively develop a business plan, practitioners suggest that a comprehensive approach is best (Getz and Sturdivant). Such an approach would cover cost, industry structure, market preferences and internal capabilities. The following list of topics are ones that can usually be found in the most complete business plans.

1. Venture situation (background, ownership, founders)
2. Market environment (industry situation, demand, customers, competition)
3. Company vision and primary goals
4. Marketing plan (sales forecast and goals, target customer, products and services, pricing, sales channels, and promotional efforts)
5. Product or service production plan (production plans, facilities, process and investments)
6. Research and development (R&D) plan
7. Human resource plan (key personnel, personnel recruitment and compensation, division of responsibilities)
8. Financial plan (budgets and forecasts)
9. Risk analysis (personnel, liability and business risks)

Through the process of writing a business plan the entrepreneur tries to evaluate the company as a whole, stresses the current situation (using a SWOT analysis for example) and assess future expectations (vision and financial forecasts). A business plan enunciates the expectations and assumptions that will be guiding factors as the venture develops. A systematic, sequential planning process that proceeds through various stages makes comprehensive planning a less daunting task.

**Stage-Gate Principles and Background**

The successful entrepreneur uses product, process or service innovation to exploit change and create customer value. To determine if a new venture or product has the potential to become a viable business opportunity, an entrepreneur should undertake a vigorous opportunity evaluation or screening process. The screening involves answering a series of questions that shed light on the potential for the idea to actually become a product or service upon which a business can be created. Entrepreneurs who fail to evaluate their venture often discover, after they have invested a great deal of time and money, the answers to the questions that the opportunity evaluation process would have revealed.

But as noted earlier the new venture development process is often haphazard and disorganized. There are often serious gaps—omissions of steps and poor quality of execution—in new venture development. During the 1960s and 1970s companies began to be concerned with the high failure rate in new product development (Cooper, 1994). Failure was attributed to many reasons, including inadequate market analysis, lack of effective marketing, higher costs than anticipated, and technical production problems or defects (Cooper, 2001). One solution was to implement a formal new product development process that would produce more successes. This process is the stage-gate process.

The stage-gate process separates the innovation or new venture development process into a number of defined stages. Each stage is comprised of a set of activities which must be
completed to answer a specific set of questions concerning the venture’s viability. A gate must be passed before moving on to the next stage. Each gate tests how well the work for a stage was completed—it is a place to review the activity completed and make a decision as to whether the project should be continued.

The first empirically based attempt to describe such a sequential process for product development management outlined six stages for the development activities (developed by Booz, Allen and Hamilton in 1968). These stages were

- Exploration (idea generation),
- Screening (initial project review and selection),
- Business analysis (build a business case),
- Development (product development),
- Testing (test marketing), and
- Commercialization (product launch).

In the stage-gate process every step necessary to complete a particular venture task is linked to the next by a gate at which decisions for the continuation of the venture are made. Gates can be defined a number of ways, for instance by time, date or content. A stage-gate is defined as a decision point where specific criteria must be fulfilled before the go-ahead can be given to proceed to the next stage of the process. For instance, at the end of the screening stage an entrepreneur, project manager or development team would review the work done in that stage and determine if the quality of execution was acceptable and that they had selected a viable project given the information collected and analyzed thus far.

Refinements of the aforementioned framework expanded the focus from technology to a cross-functional approach in which functions such as marketing and manufacturing are integrated at all stages. A cross-functional stage-gate process builds a strong market orientation into the analytical framework. Robert Cooper’s work introduced the possibility of overlapping the stages for greater speed and a less rigid stage-gate system. Gates can be conditional or situational, meaning that a project can be given a go decision even when substantial information is missing (as opposed to holding the project for later development or canceling the project), on the understanding that the missing information is gathered later before a certain date.

Gassman and von Zedtwitz report that most of today’s industries and well-managed R&D processes rely on some form of the stage-gate process. They suggest that the stage-gate methodology is particularly successful in areas and industries dominated by market-pull innovation (rather than by technology-push). They further suggest that the stage-gate process can be successfully used with innovations in existing markets (e.g. transfer of product development competence); new applications of existing products and services (e.g. relaunch of an adapted product in a new market); those innovations with high costs of product development and market introduction (e.g. initial product releases); and ventures that exhibit limited uncertainty in terms of expected innovation (e.g. incremental innovation).

**The AICC Business Planner**

Using the stage-gate methodology of venture assessment, educators at Purdue’s Agricultural Innovation and Commercialization Center (AICC) developed a systematic, sequential procedure for structuring the collection and analysis of venture plan information to
create a business plan. The approach uses a series of six discrete stages set within the framework of the commercialization process as illustrated in Figure 1.

Each stage is designed to gather information needed to evaluate a critical dimension of the venture before proceeding to the next stage or decision point. Within each stage entrepreneurs are presented with questions directed at eliciting the information necessary to assess a new venture. To aid in the answering of questions sets of “considerations” are provided to stimulate thinking and analysis on areas relevant to each of the questions. Resources are also provided as references and background on topics, such as how to define goals and conduct an industry assessment. Because of the way that the AICC Business Planner methodology has been constructed, users can create a business plan of higher value through both the systematic process they follow and the electronic facilitation they receive as they progress through components of the business plan.

**Figure 1. AICC Business Planner Stage-Gate Method**

An important element of the stage-gate method is the gate at the end of each stage. The stage-gates exist as quizzes that pose critical questions on the quality of the work done in the stage and the continued viability of the project overall. Each stage-gate contains critical quality-of-execution criteria that can be used to increase the value of the analysis and assessment. If entrepreneurs grade themselves harshly on these criteria, they are encouraged to revisit the stage to collect additional information or rethink the viability of the project. Decisions to continue with the project (go decisions) are formalized based on the information provided in the stages. The AICC process is available as a software application delivered through either the Internet or as a standalone application for users without high speed access to the Internet. In essence the process decreases the uncertainty and poor planning often found in venture development by acting as an electronic mentor.

The stages of the AICC Business Planner are as follows:

**Stage 1. Fundamentals of Your Business:** an initial review of the venture. This introductory stage requires a cross functional overview of the venture, including the primary
motivation for beginning the venture, the product (or service) that is proposed, the customer identification and preliminary break-even calculation.

Stage 2. Analyzing Your Market: a detailed examination of the target market. Users complete a thorough review of the market and its characteristics, including an assessment of the competition.

Stage 3. Producing Your Product or Service: a broad-based inquiry into producing products and managing the venture. The venture management team is identified and profiled, production methods are outlined, ownership of the venture is reviewed and intellectual property issues are identified.

Stage 4. Marketing Your Product or Service: a rigorous inquiry into the marketing plan. The target customer is profiled, and the components of a complete marketing plan are developed in depth, including the product definition and bundle, the pricing plan, the distribution methods and promotion efforts.

Stage 5. Financial Analysis of Your Business: the creation of forecasted financial statements. Estimations of operating revenue and expenses, capital outlays, financing and required rates of return are constructed.

Stage 6. Executive Summary: a focused review of the venture. An overview of the venture is written.

Illustration of the Business Planner Stage-Gate Process

The AICC Business Planner is illustrated using a case study for a new business to mill corn masa flour for use in tortillas. The prospective users or customers of this product are independently owned Mexican restaurants that make their own tortillas. Market research performed to date has shown that these restaurant owners are looking for corn masa flour that is of consistent, high quality so they can make a top quality tortilla to attract customers to their restaurant. The problem that the users/customers currently face is that they are unable to secure corn masa flour that is of consistent, high quality. The viability of a venture to provide the necessary masa flour is of the exact nature that the AICC Business Planner model is useful in assessing.

Figure 2 shows what a user of the AICC Business Planner would see in Stage 1. Fundamentals of Your Business when developing their business plan. Stage 1 is an opportunity for entrepreneurs to explain the basic motivation for and concept of their venture. Emphasis is placed on developing goals, the readiness, skills and abilities of the entrepreneur to begin the venture, the anticipated feasibility of producing product (with special regard to risks that would prevent the venture such as legal, resource or environmental regulations), the anticipated market; the need for the product, and a breakeven calculation based on rough estimations of selling price, margins and income needs. The material collected from users at this stage would appear primarily in the Overview and Goals sections of the business plan that results from the Planner. Complete business plans can be downloaded as MS Word documents to facilitate final review and sharing of the document.

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2 The case study used to illustrate the AICC Business Planner was developed by Professor Joan Fulton and Associate Professor Allan Gray and Graduate Students Michael Meagher and Tim Zimmer of the Department of Agricultural Economics at Purdue University.
Assessments test two types of activity. The first type asks entrepreneurs to assess the quality of their work in the stage by rating their confidence in the results. For instance, if an entrepreneur is not confident that they have provided clear answers to the questions posed, then they are encouraged to not continue through the model until they have more refined answers. Such quality-of-execution questions are common to all stages. With the second type entrepreneurs rate their venture on criteria specific to the content found in the stage. For instance, in for Stage 1 they state whether or not they can clearly define why their product is preferred over others. Because a component such as this is necessary for the venture to continue—a must—criteria in this portion of the AICC Business Planner is called “must-meet” criteria. Figure 3 shows what the assessments—stage-gates—look like. Assessments for each of the stages are similar and so will not be illustrated for separate stages.

Figure 2. Illustration of a component of Stage 2 of the AICC Business Planner
After completing Stage 1 and its assessment, users then move to Stage 2. *Analyzing Your Market*. Stage 2 components are oriented around gathering a complete description of the marketplace. Central to this stage is information relating to market definition, demographic indicators, trends and segments. Additionally, entrepreneurs define competing products, companies and the points of differentiation between their own company and competitors. Entrepreneurs also provide an assessment of the competitive nature of the industry (using the structure of a five-forces analysis). Figure 4 illustrates a work area for Stage 2. Material from this portion of the planner would appear in the Industry Profile section of the business plan.
Stage 3. Producing Your Product or Service is oriented around operational venture management concepts. Featured prominently are location selection, production methods, raw material sources, labor requirements and logistics, the management team and organizational structure, ownership structure and brand or innovation protection efforts (such as trademarks and patents). Figure 5 is a portion of Stage 3. Content from Stage 3 appears in the Operation and Management Plan portion of the business plan.
Stage 4. Marketing Your Product or Service helps users to develop a marketing plan. A detailed customer profile is developed, the product bundle is planned, pricing policies are formed, distribution methods are outlined, and promotion activities are planned. Figure 6 illustrates a typical question in Stage 4. Material from Stage 4 appears in the Marketing Plan section of the business plan.

Figure 6. Illustration of a component of Stage 4 of the AICC Business Planner

Stage 5. Financial Analysis of Your Business gathers financial forecasts for the venture. Users identify the number of products they intend to sell and then complete per unit estimations of costs (including start up costs), revenues, capital expenses, and financing expectations. Resulting from this stage are a set of financial statement projected five years in the future. Included are income statements, balance sheets and an expected return on investment. This material appears in the Financial Plan portion of the business plan. Figure 7 illustrates the number collection area of Stage 5.
The final stage of the AICC Business Planner facilitates the development of an executive summary to appear as part of the business plan. The executive summary is written last so that users may have the benefit of reviewing all the components of the assessment. Figure 8 illustrates Stage 6.

Figure 8. Illustration of a component of Stage 6 of the AICC Business Planner
Conclusions

The economic future of many rural regions relies in large part on entrepreneurship. While entrepreneurs may benefit from formal business planning, many fail to do so, or do so in an unstructured way that leaves the entrepreneur open to errors. To overcome such problems managers of innovation use stage-gate methodologies to bring control to product development. Purdue University educators have developed a six-stage methodology for venture assessment based on stage-gate principles. Because of the way that the AICC Business Planner methodology has been constructed, users can create a business plan of higher value through both the systematic process they follow and the electronic facilitation they receive as they progress through components of the business plan.
References


