

Expanding Your World: Leveraging Core Competencies to Drive New Growth Opportunities

Charles Brunner, Director, Product Genesis, January 2006

Abstract:

The successful development of innovative products (goods, services, or programs) that enable growth and create market opportunities requires that products meet the needs of the customer. Additionally, for business success, these products should originate from core competencies available within, or accessible to the organization. These simple statements are confounded by the adoption patterns for innovative products and the systematic progression through the various adoption personalities. The question now becomes: who is the most likely initial customer base to support and advance the innovation? Answering this question enables focused downstream activities. Once the likely customer/market segment focus has been identified, one can determine the needs of these customers and translate these needs into product/program requirements with confidence. This report will address an approach for initially identifying core competencies, technologies, and processes, and ultimately, how to identify, select and target potential customers.

Innovation n.

- 1) The action of innovating; the introduction of novelties; the alteration of what is established by the introduction of new elements or forms.
- 2) A change made in the nature or fashion of anything; anything newly introduced.

Oxford English Dictionary

Along with “nano”, “the hydrogen economy”, and RFID, and like “dotcom” of old, “innovation” is getting hyped to the point of entering the realm of buzz words. As with most buzz words, there is true value at the core, but the word has been used so haphazardly that its definition and purity have been somewhat depleted. What is innovation, and is innovation alone sufficient to keep a company vibrant and growing? Does innovation enable a company to meet business goals and investor expectations? Is innovation incorporated into the company strategy correctly, at the appropriate level, or is it receiving lip service?

Innovation, as described by the Oxford English Dictionary, certainly is not the primary goal of business. Innovation requires investment, both in time and money. Businesses are interested in the return on investment and with aligning activities with corporate goals and values. Innovation alone does not necessarily provide return or alignment. Perhaps at this time we can think of something termed Strategic Innovation. Strategic Innovation is the act of aligning innovation activities with the strategic goals of the corporation. Strategic Innovation is a way of improving the odds that the innovation investment results in an outcome that is aligned with corporate strategy and flows from identified market-driven opportunities.

Strategic Innovation may be driven from a number of starting points, but the end goal in all cases is to move beyond incremental improvement. By understanding technology and market trends, existing and emerging customer and stakeholder needs in target and peripheral market segments one half of the innovation equation can be developed. By aligning innovation potential with corporate strategy or adapting corporate strategy to enable identified innovation potential, Strategic Innovation can be realized. Ideally a Strategic Innovation will enable the innovator to develop products that affect a paradigm shift in the industry and position the innovator as the market leader.

Products, whether hardware, software, services etc., are intended to provide a set of benefits and have an associated set of attributes such as cost, social acceptance, ease of access, etc. A given market segment will have a desire for these benefits and will want the solution they choose to have a certain set of associated attributes. For example, coffee provides a benefit of alertness and has associated attributes of easy access, low cost and social acceptance. From the customer/user side, as opposed to from the solution side, the combination of desired benefits and attributes can, in general, be considered needs. An interesting nuance of needs and uncovering needs is that customers do not always know what it is they need. A customer, in the process of doing some activity (be that job, leisure etc) moves from a starting point to some end point. In that process there are a number of interim steps. This path is illustrated in figure 1 below. The needs can be thought of as the mechanisms that drive the customer to move from the starting point to the end point. The customers are used to going from point A to point G by way of points B, C, D, E and F. If they encounter a problem along the way,

perhaps moving from point D to point E, the customer perceives a need for a better solution to that minor step. One potential solution would be to react to this expressed need and develop a fix for step D to E, perhaps by even adding an additional step to the process, step E 1. Through customer and thought leader interviews, observational research, etc., one is able to uncover not only blatant needs (obvious to the customer and that the customer can readily identify) but also latent needs and forgotten needs (needs that are harder to uncover and that the customer may not even be aware of). Interestingly, a solution to a root need may eliminate a number of the needs that were perceived by eliminating the interim steps that were causing problems (a solution, for example, that leads directly from step B to Step G, eliminating interim steps C, D, E and F.).

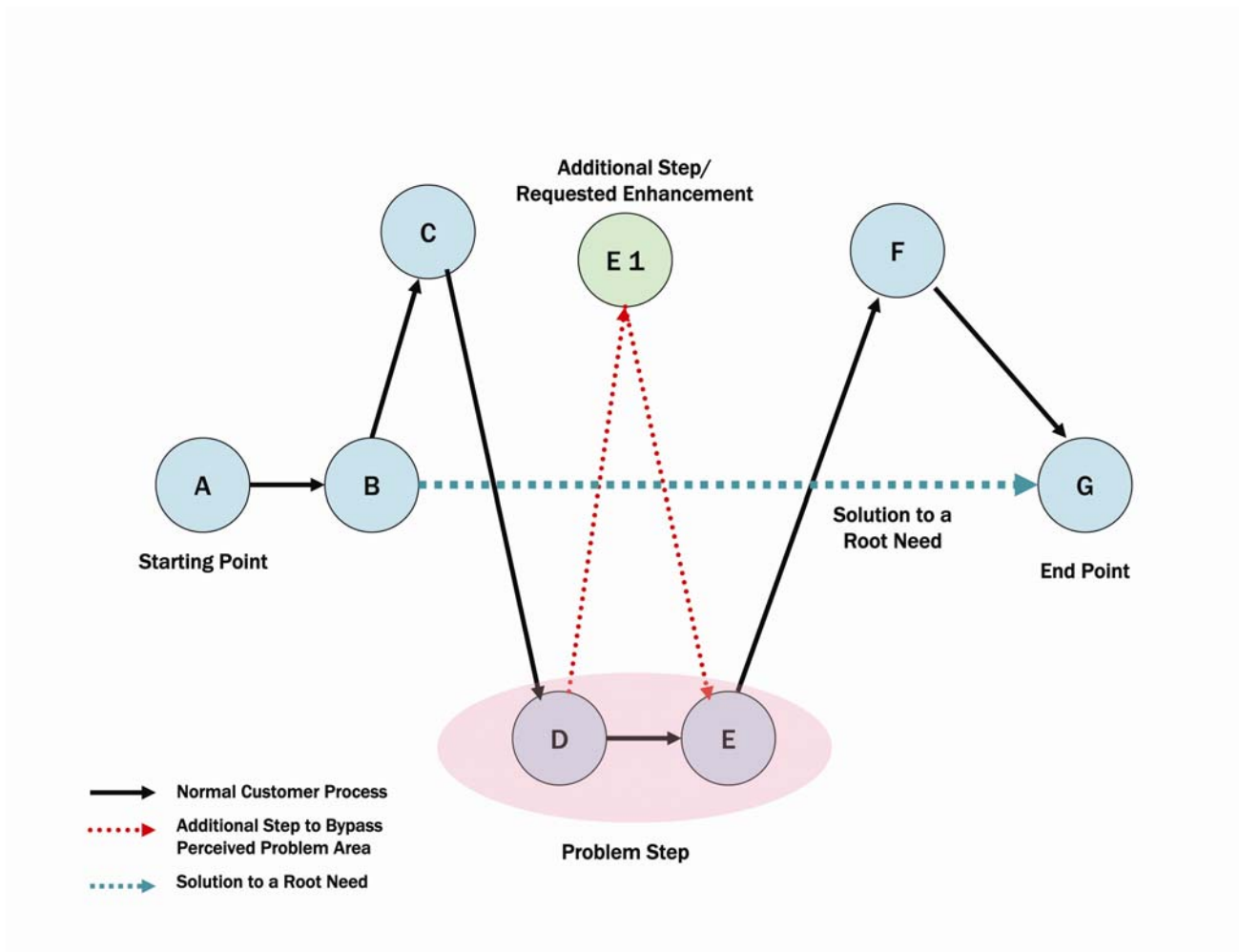


Figure 1

Considerable effort and resources are needed to identify customer needs, develop product requirements and specifications, develop the product, and launch the product into the market. Because of this, it is prudent to target a market segment(s) that you are confident has a high likelihood of providing the required return. This report will explore and focus on one of the many potential starting points in the search/effort to achieve Strategic Innovation. This starting point can most easily be described by a question: Given a company's core competencies, technologies, and processes, what can be done to identify likely (high probability) new market opportunities? By working through the process of answering this question, an understanding of potential markets is developed. Ultimately this understanding of potential markets results in the identification of targeted market segment that can be mined for user/customer needs through a variety of "voice of the customer" (VoC) activities.

Internal Filters and Core Competencies

As with any process, understanding the required inputs, feedback mechanisms, process parameters, boundaries, material flow, safety implications etc., and desired output is essential. For the Strategic Innovation process this requires taking stock of what you know, what you are willing to learn, the risks you are willing to accept along the way, your goals and desired outcomes. A portion of this understanding sets boundaries and forms the bases for evaluating concepts and market opportunities by outlining what a good opportunity looks like to the company.

These boundaries do not need to be ridged rules; they are more like guidelines and should be revisited frequently to assure that they are still valid. These guidelines may include:

- Opportunity size that would be of interest to the company
- Level of investment (time and money)
- Investment payoff (return on investment)
- Innovation duration (longevity)
- Bounds for markets
- Bounds for technology, core competencies and processes

- Capacity
- Capacity expansion capability
- Growth preference: organic vs. acquisition vs. seeding
- Risk tolerance
- Requirements for differentiation

Business goals, strategy and guidelines are only one part of the taking stock activity. These serve as an internal filter for opportunities as they are identified. Later on the report will discuss an external filter that, when combined with the internal filter, will provide focus for selection of likely market opportunities.

A major enabler for the benefit-centric approach and the other portion of the taking stock activity is to examine, understand and define the company's core competencies, technologies, and processes. This at times can be a tricky activity. Human nature seems to dictate that "familiarity breeds contempt". Quite frequently clients overlook potential key areas of competency because they had been involved in a process. Or clients work with a technology for so long that they assumed everyone has the same level of competency. Sometimes a more objective view is required to identify competencies that result in benefits, which would in turn meet yet-to-be-determined customer needs.

Once core competencies and processes are identified, they can be resorted, evaluated, and recombined to develop concepts around novel and innovative products

that can better and uniquely meet the customer needs in untapped markets. Within this activity, consideration must be given to the teams' understanding of the affect of variability or changes on the process or technology. Essentially, this is the knowledge of the form or condition of outputs for variable inputs, or stated differently this is an understanding of what and how process variables must be modified to achieve a desired product

The approach being described here begins with an understanding of core competencies, technologies, and processes. It should be noted that alternative starting points are common and that the choice of starting point is dependent on whether you looking to identify new opportunities to apply an existing technology, or new approaches that will better meet a markets needs. An example of an alternative starting point would be to define needs for a market segment of interest and then define concepts around how these needs can be met, anticipating that you will be able to develop or acquire the core competencies and technologies that will combine to create a solution to meet those identified needs. A filter would then be applied to see how these ideas work within the confines of the business strategy and environment.

characteristic. For example, if a company produces an aerogel that has material properties appropriate for use as a hydrophobic, fire resistant thermal insulator with a compressive strength of X, ideally the team would understand how these properties interact and trade off against one another, the limits that can be achieved from the material processing, as well as other properties such as bio compatibility. A thorough understanding here helps set bounds on what is possible, and reduces the risk of poor selections. A lack of understanding may result in risk and problems that are not found until prototypes are established, a direction has been set and money has been spent driving towards a particular solution and target market.

Having completed the identification of core competencies, established the elements that make up the core, and gained an understanding of the variability surrounding products, additional introspection is required to answer a few other key questions. Specifically, what aspects of the core differentiate you from your competition? Understanding this differentiation will further aid in evaluation and selection of yet to be identified market opportunities.

In defining what differentiates your company/products from your competition the following questions will aid the definition effort:

- Do you possess/hold an IP position that is defensible and enforceable and will this position limit a competitive threat?
- Do you hold trade secrets that are unique enough that your products cannot be easily reverse engineered, or that are not readily obvious to someone skilled in the area?
- Do you possess skills that are unique and not easily acquired by your competition?
- What other reasons are there which prevent your competition from eroding your market share?
- What is the competitive threat in the segment you are targeting or for the technologies etc., which make up for your differentiating factor?

Understanding your differentiated competitive position, the make up of your competency, and the business bounds that define an opportunity that fits the company are key components that enable better evaluation of ideas and market opportunities.

Discovering Opportunities

Up until now, this report has focused on developing an understanding of a company's motivating factors, core competencies etc., and using this understanding to establish the means for evaluating market opportunities and product concepts.

From this foundation we can now discuss an approach to generating ideas based on the benefits that result from the core competencies, technologies, processes, etc. This is one of many Benefit-Centric approaches that can be employed to identify new opportunities. Although there are various versions that relate to various starting points and problem statements for Strategic Innovation, the approach described below, as mentioned previously, is focused on identifying new opportunities from core competencies.

Given the development of market opportunities based on a core competency (technology, process, etc.), the benefits centric approach is appropriate to drive the thought process and brainstorming activities that will establish the concepts and market opportunities. These concepts and market opportunities can be documented and evaluated against both the internal strategic fit filter and the external market driven filter. For the purposes of an example, we will step through:

- Establishing the individual steps associated with the process/technology/competency
- Spinning out known benefits and unique properties of the process/technology/competency
- Benefits from the core
- Brainstorming on enabled processes
- Brainstorming on potentially interested parties
- Growing the tree

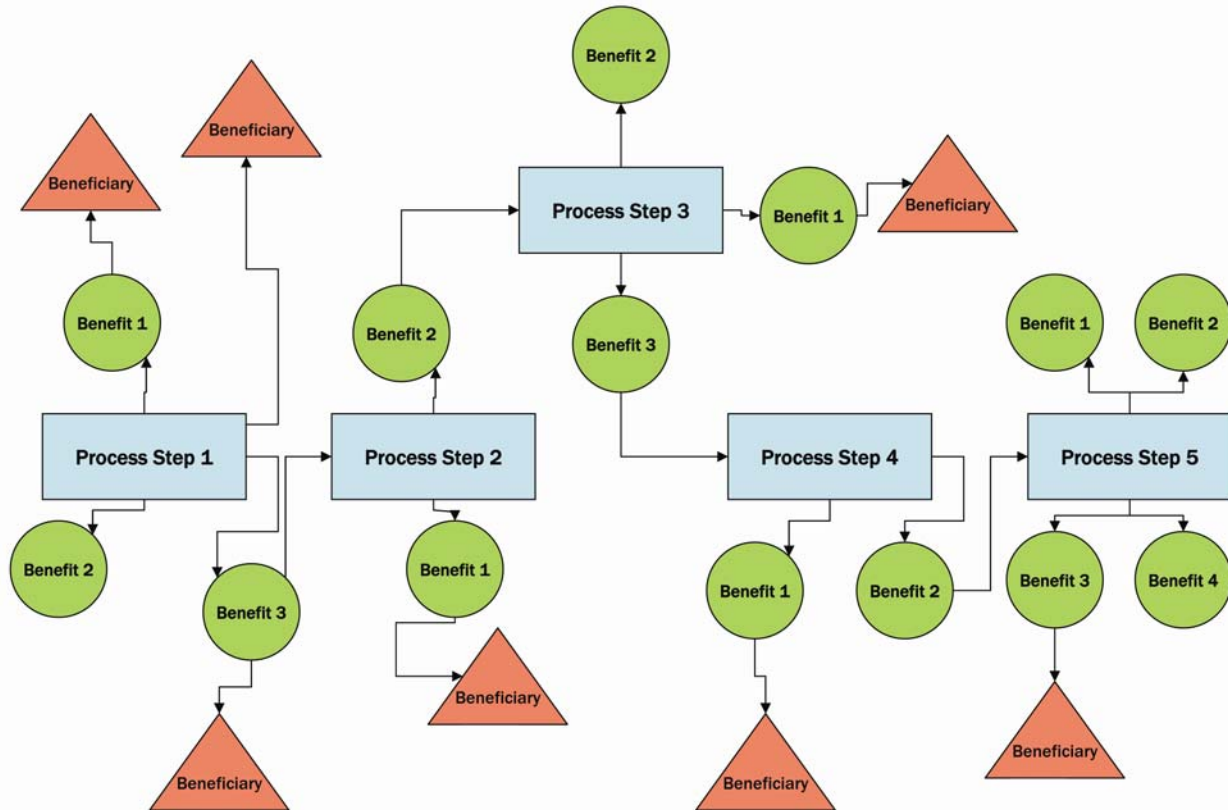


Figure 2

Growing the Tree

As can be seen from Figure 2, this process can take on an almost fractal nature: spinning processes from benefits; understanding opportunities from processes; and enabling identification of potential beneficiaries (market opportunities) from both the processes and the benefits.

Effectively growing the tree can best be accomplished through the use of cross functional teams with cross industry experience. Using the benefit-centric map as a focusing tool, brainstorming can be conducted to identify benefits resulting from core processes and technologies. In this particular approach, the cross industry and cross functional team is well suited to not only identifying benefits from processes and in spinning out additional additional processes enabled by the benefits, but also in identifying potential industries and users where these benefits and process might be valued.

Growing the tree requires first laying out the “trunk”. The “trunk consists of the existing core competencies, the resulting benefits and markets (beneficiaries), and the interactions that have been identified/captured during the taking stock activities. In the case of a multi-step process, each step can be considered to provide a benefit that enables the next step. The more fine the level of detail is documented; the more points of connection or kernels of potential market opportunities become available for evaluation.

Because of the fractal nature of this sort of activity, meaning that it could go on forever, a “time boxed” approach would be recommended here. Typically individual and group brainstorming would be conducted. For group activities, experience recommends 4 to 6 participants meeting for 2 to 3 hours is appropriate for a classic brainstorming meeting. Other brainstorming facilitation tools, computer based, etc., are also appropriate. Individual brainstorming enables more in-depth thought on complex issues, but again, this should be bounded to some level as appropriate for program scope, and targeted return.

The result of these brainstorming activities should be a reasonably large number of concepts for products, processes and associated potential market opportunities. These will typically be captured in a list with brief description of the concept, and associated more complete description or sketch to more fully capture the concept. A simple electronic spreadsheet enables manipulation and evaluation of the concepts against one another with in the context of both the internal and external filters.

Evaluating Opportunities

The benefits centric approach has first focused inwardly to understand goals, and core competencies, how well one understands the affects of various perturbations, and what a desirable opportunity looks like. Making use of this introspection, particularly with regard to core competencies, has allowed expansion from the core to develop a large number of concepts for products, processes and the likely beneficiaries (market opportunities). One note here; the concepts and associated market opportunities will likely span various business and consumer markets, business plans, technology requirements (some that you have and some that you don't). Additionally, the concept may be a primary end product or it may play a support role in the development of other products. This provides an initial glimpse at the potential complexity of the evaluation that must be undertaken to uncover those opportunities with the best likelihood of success, and that are within the company's mission and innovation strategy.

Given the aforementioned complexity of the problem, the evaluation process begins by conducting a first pass scan. Making use of the "taking stock" effort conducted earlier, one has a good understanding of the criteria that to use in evaluating an opportunity. These criteria form the essence of the *internal filter*. The goal of the *internal filter* is to identify those concepts/market opportunities that meet the company's definition of an interesting and worthwhile opportunity or opportunity space. More accurately, the criteria will be used to create a ranked ordering of the concepts, and to inform as to leading groupings of concepts that have a common theme and might point to a more general category of interest. To enable this ranking, assuming the concepts are listed in a columnar fashion down the left side of the spreadsheet, the attributes would be listed across the top in a row (see figure 3). Typically all criteria do not carry the same weight in the decision making process and they can be placed in a hierarchy of priority. To account for this, assign weights or importance rankings to each of the criteria. Making use of the matrix now created, numerically rank how well each of the attributes is met by the concept. Choice of the number range can be debated. Keep in mind when selecting a range that this is a fist pass scan. The goal of which is to cull the concept list by about 80 % to allow more focused evaluation of leading ideas or categories.

	Criteria 1	Criteria 2	Criteria 3	Criteria n	Score (Raw)	Score (Weighted)
Weighting						
Opportunity Concept 1						
Opportunity Concept 2						
Opportunity Concept 3						
Opportunity Concept 4						
Opportunity Concept n						

Insert relative priority weighting. One approach is to distribute 100 percentage points across the criteria

Insert ranking, typically relative to some base line opportunity concept that would have all 0's for the scoring

Figure 3

During the ranking process some limited research may be required to inform on likely rankings. Conducting this research is appropriate, but the goal of the scan should be kept in mind. Trying to research each of the rankings for all the concepts will require significantly more resources than most companies are willing to commit. Detailed research should be reserved for those opportunities and concepts that are down selected from the initial evaluation pass.

During the process of ranking, and manipulating the results, a few things should happen. Ideas not considered good will surface and conversely, concepts initially considered viable will fall off the map. Is this due to the attributes selected, the weightings defined, preconceived notions, or assumptions? Answers to this question may require adjustment to the evaluation criteria and/or matrix. Also, during the ranking activity and review of scoring opportunities can be combined, expand, or enhanced by seeing where concepts are weak relative to the attributes they are being evaluated against. Please note that this approach is not a substitute to thinking, but

rather should encourage thinking and consideration of what is really relevant when selecting likely products and opportunities.

Once the leading concepts have been selected, more focused evaluation is in order. The purpose here is to verify that the concept and its associated beneficiaries (market opportunity) are truly likely. The goal is to further narrow down to a select few concepts that will warrant an even more detailed evaluation. Where the first pass evaluation made use of limited literature reviews, and team experience, this evaluation will make use of more primary research and additional secondary research. Some of the questions that need to be answered are:

1. Are there indeed market needs that this concept will be addressing?
2. Does the business model make sense?
3. Does this provide a true point of differentiation?

Once again, the word of caution is to conduct these activities to an appropriate level. This work should also involve increasing the knowledge of how well the concept meets the established evaluation criteria. A good deal of this knowledge should become apparent in answering the questions above. It is also appropriate to increase the scoring range (numerical rankings) for this evaluation pass. The increased score range provides a greater degree of resolution from one opportunity to another as more detailed information is obtained.

One possible approach for a more detailed evaluation, covered in broad brush strokes, would be to transition these identified applications of the core technologies into an opportunity scan. One of the goals of an opportunity scan is to evaluate and quantify likely market opportunities and to provide insights into market segmentation and user needs. Where the prior filter was considered an internal filter, the opportunity scan can be considered an external filter. Making use of tools and processes similar to those described above, the team would expand on who would benefit from a given concept. For the purposes of this discussion, consider the concept to be a proposed solution. Profiles would then be developed around the benefits provided by the solution as well as associated attributes of the solution, and around benefits that the beneficiaries are looking for and the attributes

they want in a solution they would choose. Of importance here is the understanding and documentation of alternative solutions that the beneficiaries can choose from. By comparing the benefits and attributes the beneficiaries desire in a solution with the benefits and attributes provided by solutions, and coupling this with the size of identified market segments or populations, a good indication of likely opportunities for the application of the down selected concepts/solutions can be identified.

From the benefit-centric approach described above, there may be a number of likely opportunity areas that arise. Determination of the number of these likely opportunities to pursue must be made. The number of these that pass through each of the evaluation stages will most likely be limited by resources (money, time and manpower). The willingness to change the status quo can also be a limiting factor. If a company is truly change averse and is only looking to keep doing the same thing with the same people, they should forgo spending the effort outlined in this report.

Next Steps

The opportunities (application concepts and associated market segments) that remain after going through this filtering and down selection process have passed a number of evaluation stages, and there is a strong indication that they are good candidates to pursue further. To further bring these into focus, detailed evaluation is appropriate. Design and develop prototypes to verify that the technology perform as it should. For those familiar with Design for Six Sigma, this could be considered technology qualification. It is essential that the new application of our core competency works and that the operating envelope is understood. Also appropriate at this point is the application of more effort to understanding user needs surrounding the identified potential opportunity (such as observational research, and thought leader, lead user interviews). As with all product development efforts, the level to which these activities are done must be in line with budgets, schedules, goals, risk tolerance, and the innovation profile of the company.

Summary

Innovation alone is not enough to drive success. Innovation must be simultaneously aligned with corporate goals, mission, business strategy, and market needs to provide real returns. This report has outlined an approach for identifying new strategic innovation and growth through:

- Understanding and dissection of core competencies and processes.
- Establishing the benefit provided by these competencies and processes.
- Making use of the competencies and provided benefits to establish solution concepts and identify potential beneficiaries.
- Defining an internal filter that enables the determination of what a good opportunity looks like.
- Understanding how core competencies and processes provide a point of differentiation.
- Evaluating concepts with the internal filter to identify opportunities worth further evaluation.
- Filtering of opportunities that pass internal filter criteria through an external filter; providing confidence that potential solutions will meet the market needs and business goals.
- Establishing focus for detailed evaluation of target markets and technical performance requirements/capabilities for, and of the core competencies, technologies, or processes.

The successful development of innovative products (goods, services, or programs) that enable growth and create market opportunities requires that products meet the needs of the customer. Additionally, for business success, these products should originate from core competencies available within, or accessible to the organization. Confounded by the adoption patterns for innovative products and the systematic progression through the various adoption personalities, the question now becomes: who is the most likely initial customer base to support and advance the innovation and provide impetus for growth? Applying a structured approach to answering this question provides a method to improve the odds of successful program outcome, and to realize a return on investment through Strategic Innovation.