Marketing Research to Support the Stage Gate New Product Development Process

Agile. Iterative. Informed. Fast.

These are hallmarks of today's effective new product development, with the goal of establishing a stream of new products to support business growth. More than ever, businesses are looking to new product innovation to keep their brands relevant and to maintain profitability. Stage Gate processes, developed by Robert Cooper, have streamlined the new product development cycle for many businesses.

What is the Stage Gate Process of New Product Development?

According to proponents, the Stage Gate Process can help you:
- Get new products to market faster,
- Improve new product success rates,
- Focus on developing products with the highest potential,
- Experience fewer new product development errors, waste and re-work.

Businesses that have implemented the Stage Gate Process also experience improved leadership alignment around new products, creating:
- More efficient and effective allocation of scarce resources,
- Better visibility of all projects in the pipeline,
- More effective cross-functional engagement and collaboration,
- Better communication and coordination with external stakeholders.

While Athena of Greek myth may have sprung fully grown (and armored) from the head of Zeus, most successful new products have a much more labored beginning. The Stage Gate process creates a structured and disciplined approach to product development, with specific "stages" and requirements for the performance necessary to pass successfully through the next "gate" in the process. Each stage is specifically designed to collect information to help move the project to the next stage or decision point.

In the formal Stage-Gate model, the stages are:

Stage	Gate	Purpose	Supporting Research
0	**Idea Discovery**	Uncover and generate business opportunities and new ideas	**Qualitative Idea Generation**
1	**Scoping**	Fast, inexpensive preliminary evaluation	**Concept Screening**
2	**Build the Business Case**	Detailed investigation of the technical and market factors for the Business Case	**Concept Testing**
3	**Development**	Detailed design of the new products, and operations/ production required for launch	
4	**Testing and Validation**	Tests and trials to verify, validate production and	**Product Testing**

		marketing plans.	
5	**Launch**	Commercialization	**Tracking**

The Importance of Information

An important aspect of the Stage Gate process is the focus on information. Instead of gut feeling, product developers and business leaders must have valid information on which to base their decisions. In each gate, the product is measured against a defined set of success criteria that are stringent enough to quickly identify winning products, as well as those that should not be pursued. These criteria include: Strategic Fit, Product and Competitive Advantage, Market Attractiveness, Technical Feasibility, Synergies/Core Competencies, Financial Reward/Risk.

How do businesses get this information? In addition to secondary (industry or trade research), and the results of their own internal testing, marketing research is a critical resource for new product developers using the Stage Gate Process.

Marketing Research to Support Each Stage

Whether you are developing a product, a service, communications, or visual concepts, Infosurv Research has a number of methodologies and techniques to fit your needs at the various stages for the Stage Gate development process.

Idea Discovery Research

To generate new ideas and business opportunities for further evaluation, marketers often turn to traditional qualitative research methods, such as Brainstorming, Focus Groups, Depth Interviews, Ethnography, and others. Infosurv Research provides support for all of these techniques.

Brainstorming

There are two types of Brainstorming techniques, and either one or both may be used to generate new ideas; Internal and External.

- Internal brainstorming is conducted within your organization with employees and key stakeholders.
- External brainstorming utilizes objective outside participants, often experts in a particular industry or product category or heavy consumers of a particular category.

In Internal Brainstorming, a group of employees are invited to a discussion led by a moderator to develop new ideas for products and services. The advantages of using internal brainstorming are the ability to draw ideas from those close to your business who have a vested interest in the success of the project and the lower cost of utilizing internal resources. However, the disadvantage, and why you would also employ External brainstorming, is that the participants may tend to have biases and tunnel vision that prevents them from thinking out of the box.

In either case, brainstorming is used to generate new ideas in a free-form discussion format. A moderator will present the overall issue or topic and ask participants to provide ideas in a rapid and non-critical exchange. The sessions can be scheduled for as short as one hour or as long as a full day.

Focus Groups

Focus groups are open-ended discussions among 8 -10 people who are pre-screened for particular qualifications (heavy users, particular age groups, ethnicity, unaware of a brand, etc.). Focus groups are often used to develop hypotheses, refine new product concepts, provide "red-flag" disaster checks, or test understanding of stimuli for quantitative studies. Focus groups are useful in using the dynamics of group interactions and discussion to expand on the generation of ideas beyond what an individual may think of on their own.

Focus Groups provide a source of ideas from consumers prior to concept development and/or provide information to refine concepts, check for understandability, and avoid potential negative consumer issues.

Depth Interviews

Depth interviews are used to generate ideas and insights for new product development and uncover unmet needs. Like Focus Groups, they are open-ended discussions, but are held with individuals one-on-one (either in-person, by telephone, or over the Internet) pre-screened for particular qualifications. The advantage is that you avoid "group think" that you might have in Focus Groups and, for some situations, it is more effective to get a single, unbiased view rather than a group view.

Depth interviews are also used in conjunction with or as a replacement for Focus Groups when it is impossible, impractical, or disadvantageous to assemble respondents in a group setting (i.e. geographically dispersed respondents, difficult to schedule respondents, a very small group of potential respondents, etc.).

Ethnography

Ethnography is used to generate ideas and insights for new product development and uncover unmet needs through the observation of consumer behavior. Structured observation of people's actions and behaviors are conducted by trained researchers in the respondent's actual home, work, or shopping environment regarding a specific topic or category of interest.

In Ethnography, very few direct questions are asked of the respondents. They may be given a task to perform (show me how you clean your bathroom) or a goal to attain (find three restaurants online for dinner tonight). Sometimes respondents are just observed performing their routine day-to-day activities. Observations focus on a particular topic (e.g. online news), and are keyed on unusual behavior, satisfying habitual behaviors, and problems encountered. To generate ideas for developmen, researchers look for unmet needs, unsolved problems, and out-of-the box behavior that suggest new product or service ideas.

While these techniques traditional, qualitative techniques are effective, they can take a long time and are relatively costly (even using online qualitative techniques.) Infosurv Research frequently employs a crowdsourced ideation technique to generate hundreds of new ideas and concept seeds in a matter of hours and at a reasonable cost.

Crowdsource Ideation

Crowdsourced Ideation has been used to generate ideas for new product concepts, new product features, product names, and other marketing communication assets. Ideation exercises are typically conducted among a random sample of the general population which has been screened for knowledge of the product category or of the target consumer. Most projects include some mix of social predictions (e.g. "I think women who bake would like…") and self-predictions (e.g. "I would like…") to tap into different types of ideas. Crowdsourced ideation also allows for the inclusion of "seed ideas" (that come directly from the client or research team) that serve two purposes:

1) They create a "template" for participants to follow, so the ideas generated more closely follow the kinds of ideas might be valuable, and
2) They provide a baseline and allow directional scoring (positive/negative) of the seed ideas vs. ideas the community generates.

The number of ideas generated in a crowdsourced exercise varies, but Infosurv Research usually produces a new idea from 75% of the participants. Additionally, all participants provide quantitative feedback (positive/negative) on all previously submitted ideas, giving you simultaneously crowd-generated ideas, as well as how the crowd evaluates those ideas.

Concept Screening Research

After a number of concepts are developed (through internal brainstorming sessions, qualitative research, or crowdsourcing), the task is to screen the concepts to identify the strongest (those that best meet the six Stage Gate criteria) that will be most viable to carry through for further investment and development. Infosurv Research typically uses one of two methods for concept screening: monadic concept screening and sequential monadic concept screening. As the names imply, the key difference is that with sequential monadic concept screening, respondents evaluate multiple concepts, one concept at a time and in monadic concept screening, each respondent evaluates only one concept.

Monadic Concept Screening

When we use Monadic Testing for screening concepts, we present each respondent in the survey with only one concept to evaluate. The advantages of testing one concept in isolation are:

- Interaction between concepts is eliminated. Evaluations of a concept are not biased by exposure to previous concepts.

- By focusing the respondent's attention upon one idea, the monadic test provides the most accurate and actionable diagnostic information. There is no confusion between concepts.
- More diagnostic questions can be included without lengthening the overall survey.

The disadvantages of testing one concept in isolation are:

- Higher cost due to the necessity of larger sample sizes (which may be offset somewhat by the shorter survey length)
- If screening more than one concept, it is important to carefully match the characteristics of each group or cell of respondents to prevent biased results.
- Respondents are not able to rank or compare all of the concepts under consideration.
- Does not replicate the "real world" where consumers are always faced with choices of competing products when shopping.

Therefore, Monadic Testing is recommended under the following conditions:

- It is important to have unbiased evaluations of concepts.
- Concept descriptions are long or complex, increasing the probability of respondents confusing the concepts.
- There are no strong and obvious differences between concepts, which again may lead to confusion between concepts for the respondents.
- It is not important to provide ranking or direct comparisons between concepts
- There are many diagnostic attributes to measure for each concept (contributing to a longer survey length.)
- You are able to draw samples of respondents with balanced demographic, attitudinal, and other characteristics.
- You are not severely limited by budgetary constraints.

Sequential Monadic Concept Screening

As indicated, sequential monadic designs have each respondent evaluate two or more concepts, sequentially. The respondent sees one concept and evaluates it, then sees the second concept and evaluates it, and continues until all the concepts have been seen and evaluated. The order of presentation of the concepts is randomized to control for order bias.

The advantages of the sequential monadic design are

- Lower cost due to smaller total sample needed.
- The ability to provide a comparison between or rank ordering of concepts.
- The ability to provide monadic comparisons of concept ratings by comparing only the subset of ratings of concepts that were presented first in order.
- Can replicate the marketplace if competitor's concepts can be included in the test.

The disadvantages of sequential monadic designs are:

- If there are a large number of concepts to be evaluated (5 or more) or if there are a large number of diagnostic questions about each concept, the questionnaire can become long and repetitive. Respondents may become fatigued and disengage from the survey.
- If the concepts do not differ substantially in scope, respondents may become confused between the concepts presented. For example, if you are evaluating two cereal concepts where they only differ on one attribute, "munchy crunchiness" vs. "crunchy munchiness", you will not find much difference in responses.

Sequential Monadic testing is recommended under the following conditions:

- It is less important to have unbiased evaluations of concepts.
- Concept descriptions are short and simple.
- There are strong and obvious differences between concepts.
- You have fewer than 5 concepts to evaluate.
- It is important to provide ranking or direct comparisons of concepts or to identify the "best" concept of those under consideration.
- There are fewer diagnostic attributes to measure for each concept.
- It is difficult to draw samples of respondents with balanced demographic, attitudinal, and other characteristics.
- You are limited by budgetary constraints.

Concept Testing

Once the number of concepts is reduced to a few, the research goal is to identify the attributes that are most important in driving interest or purchase and to provide an estimate of sales volume, based on the concepts' perceived delivery of or performance on the most important attributes. For this purpose, Infosurv recommends utilizing a Choice Based Conjoint methodology:

Choice Based Conjoint (CBC) Testing

Instead of rating or ranking product concepts, respondents are shown a set of product bundles (usually four or five), each described by options, varying brands, feature sets, attributes, and prices. For each, respondents are asked which product in the set they would be most likely to buy. As in the "real world" respondents also have the option of selecting none of the options shown.

The total number of test products will depend on the number of competitors, the number of variables tested and the number of "levels" for each variable. CBC is a very robust testing method and is able to handle a relatively large number of potential products, as answering the question (making the "choice") is a fairly simple, quick decision for the respondent

CBC provides three main outputs that marketers can use in the product development process. First, by examining the results for each of the product attributes, you can determine which attribute has the greatest impact on consumer choice and the relative impact of that attribute. Second, within each attribute, you can see the relative preference of each attribute level. If, for example, you were evaluating product with

prices of $9.99, $19.99, $29.99, you could identify by how much more or less one price is preferred to the others.

Of course, an important part of the analysis is a Market Simulator, which tells you how well your new product is likely to perform against competitors in the marketplace. The Market Simulator is an Excel-based spreadsheet which is able to determine how any combination of attributes for a concept will actually perform against competition, or potential competition. The Simulator allows marketers to run a variety of "what if" scenarios by providing the opportunity to manipulate the variables in the study and observe the potential outcome. So, in addition to determining how your product will perform against today's competitors and their product offerings, you can also model what would happen if your competitors cut price, add features, or take other action in response to your product's market entry.

The advantages of Choice Based Conjoint are:

- Close simulation to real world decision making.
- Ability to evaluate a large number of variables efficiently.
- Supports concept and product development by identifying the key attributes and prices.
- Provides estimates of sales volume (market share.)
- Has the ability to provide a comparison or rank ordering of combinations of attributes in an easy-to-use simulator.

The disadvantages of CBC designs are:

- Complexity of designing the survey.
- Somewhat higher costs and longer time frame to conduct the research.

CBC testing is recommended under the following conditions:

- Need to evaluate the relative importance of the concept's individual attributes.
- Need to measure price sensitivity.
- Need to estimate potential sales volume versus competition.
- It is less important to have unbiased evaluations of concepts.
- Need to be able to model market share changes based on competitive scenarios.

For more information about CBC, see our White Paper **"Succeeding at New Product Development Using Discrete Choice Analysis: How NOT to Design an Edsel!" [link]**

Product Testing

Once a handful of concepts are approved, they are developed into a product or prototype for further testing. To test the product or prototype, it is necessary to place it in the hands of potential consumers for them to try, touch, experience, or taste the product or service. For this type of research, Infosurv Research recommends either a Central Location Test (CLT) or and In-Home Use Test (IHUT).

In both methodologies, respondents are screened for qualification and security and recruited to participate in the research. They either agree to go to a central location to try the product or to receive the product to use in their home. After trying the product, a survey is conducted to evaluate the respondent's experience, the attributes and characteristics of the product, and to measure interest and purchase likelihood. CLT's are preferred for products that can be evaluated on a single trial basis whereas IHUT's are preferred for products that require a longer term trial.

The advantages of the CLT/IHUT design are

- Evaluation after experience with the product.
- Close simulation to real world evaluation and decision making.
- Longer survey possible.
- Ability to gather in-depth qualitative feedback on the product to improve acceptance and marketing.

The disadvantages of CLT/IHUT designs are:

- Somewhat higher costs and longer time frame to conduct the research.
- Representativeness of the sample may be limited due to the need for being close to the central location or simply by the need to mitigate the higher cost of this type of research.
- Prototypes may be expensive or difficult to produce and there for limited in number.

While CLT/IHUT designs are challenging and can be expensive, they really are the only way to evaluate consumer reaction to using (or seeing or tasting) your new product. In the high-stakes world of new product development, and the reality that nearly 50% of all new products fail within one year of launch, you need the additional confidence that a CLT or IHUT product test can deliver.

Tracking Research

Once the new product is launched, it is important to be ready to implement a Tracking Research program to measure the ongoing performance of the new product. Along with internal tracking of actual distribution and sales data, an Awareness, Attitude, and Usage (AAU) Tracking study can provide key information about the new product and its supporting marketing and advertising activities. Is the new product attaining the levels of awareness that were expected? Are the attributes identified as the key drivers actually performing as such? Are there any issues with the actual product performance that differ from the original assumptions or design? Tracking issues such as these early in the life cycle of the new product can identify problems that can be addressed before they become critical.

Summary

If you are using the Stage Gate process in your business, you know that valid, accurate information is the key to successful new product development and launch. If you are not, but are interested in improving your go-to-market success record for new products,

Infosurv Research can help you conduct marketing research to help you evaluate your new product concepts likelihood of market acceptance.

The key to new product success is not only saying "yes" to the right ideas, it is just as much saying "no" to the wrong ones. While it is no secret that Steve Jobs was not a fan of marketing research (at least, focus groups), he is spot on in saying: *"Quality is more important than quantity. One home run is much better than two doubles."* Let Infosurv Research help you hit one out of the park!