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Whitepaper

Outcome-Based Segmentation

by Anthony W. Ulwick

Most companies segment their markets—but few have used segmentation to proactively gain a disruptive foothold into new markets. A new approach to segmentation offers companies a better way to formulate their market, product and branding strategies.

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Introduction

Success in marketing is dependent on segmentation—the ability to identify groups of customers that are so similar that the same product or service will appeal to all members of the group. Targeting a market segment that satisfies the basic tenets of solid segmentation theory (e.g., the population agrees on what they value) dramatically increases the chances that a product or service will succeed, as it is more likely to connect solidly with the target customers.

Managers looking for a better way to segment markets must once again address the question that is most important and fundamental to this discipline—just what is it that makes customers truly different?

Despite the importance of getting segmentation right, many managers continue to adopt segment classifications that squarely target their products and services at phantom targets—internally defined segment classifications that are imposed on customers but in reality do not exist. This, not surprisingly, is a cause of many failed product and service efforts.

This problem is not new. Nearly forty years ago, for example, Daniel Yankelovich wrote, "we should discard the old, unquestioned assumption that demographics is always the best way to segment markets." [See *New Criteria for Market Segmentation,* HBR, March-April 1964]. Despite what has been written, it is rare even today that a company employs a segmentation scheme based on sound theory. The reason for this non-compliance is two-fold. First, many managers find it more convenient to group customers into attribute-based categories such as product type, price point, age, business size and other demographic or psychographic classifications, because this type of data is readily available, making it easy for them to identify, collect, track and analyze customer data. Second, managers have yet to discover an effective method to identify truly homogenous groups of customers, offering them few alternatives. Those managers who have experimented with "needs-based" segmentation, for example, often complain of segments that are heterogeneous in membership, complicated, difficult to target and fail to offer a predictable model of customer behavior.

Managers looking for a better way to segment markets must once again address the question that is most important and fundamental to this discipline—just what is it that makes customers truly different? To answer this question, managers must look beyond the commonly used internal classification schemes and understand that markets are naturally segmented—from the customer's perspective—based on what they want a product or service to do for them.

An outcome-based approach to segmentation enables companies to devise product and service portfolios that deliver significant value, discover and size high-potential growth markets, create powerful outcome-based "purpose" brands and discover market entry points for disruptive technology.

In our study of new and existing markets we find that customers—individuals and businesses—have "jobs" that arise regularly and need to get done. When customers become aware of such a job, they look around for a product or service that they can "hire" to get the job done. When shaving, for example, a man may "hire" a blade and shaving cream or an electric razor and after-shave lotion to get the job done. A woman may "hire" a hair removal strip or a hair removal lotion. Similarly, a customer wanting to avoid financial loss may "hire" an insurance policy or an options contract for protection. Understanding what job customers are trying to get done is the first step in creating an effective segmentation scheme, but it is how customers want to get the job done that is the real focus of our segmentation methodology.

As it turns out, when a customer hires a product to get a job done, they use a set of metrics—measures of value, if you will, that define what is important to them as they are executing that job. We call these metrics their *desired outcomes*. [The concept of desired outcomes was first introduced in the January 2002 issue of HBR—*Turn Customer Input Into Innovation*]. When shaving, for example, some customers may want to minimize preparation time and to minimize the number of nicks while other customers may want to prevent skin irritation and to minimize the number of hairs that are missed. Their desired outcomes define the way they want to get the job done. Given their desired outcomes, the first group of customers, for example, may "hire" an electric razor while the second group may "hire" a blade with lubrication strips, as the respective solutions better satisfy the outcomes that are uniquely important to each segment. It is these differences in the customer's desired outcomes that form the foundation for a market segmentation discipline that not only gives marketers a more predictable target for the success of their products and services but also enhances their ability to position and brand products and to communicate the benefits to their customers—more so than any other segmentation model.

Hitting a target that does not exist makes it appear that the innovation process is random and unpredictable. Adopting an outcome-based segmentation scheme enables companies to eliminate this cause of variability and to get the target right. This approach may require new thinking and be somewhat more involved than using any of the standard demographic, psychographic or needs-based classifications, but the benefits justify the effort. As we shall demonstrate, an outcome-based approach to segmentation enables companies to devise product and service portfolios that deliver significant value, discover and size high-potential growth markets, create powerful outcome-based "purpose" brands and discover market entry points for disruptive technology.

Before we describe our outcome-based segmentation methodology and its applications in detail, let's take a quick look at how the art of segmentation has evolved.

The Evolution of Segmentation

Over the years, the practice of segmentation has evolved along a continuum that has been both defined and limited by the type of customer information that is available. In the 1950's, for example, market segmentation was based purely on demographic characteristics such as age, geographic location or gender—because demographic information was the only type of data that was easily collected and readily available. As a result, it quickly became the de facto standard for use across companies. Over time, marketing, sales and accounting systems were designed to track and analyze data from a demographic perspective, giving these demographic-based segments a permanent placement in the corporate environment.

As information technology evolved in the 1970's, so did the marketer's ability to gather more insight into their customer base, giving way to new methods of segmentation that not only included demographic data but psychographic data as well. With information on common customer traits and attitudes towards products and services, marketers were able to produce more specific customer profiles. As organizations installed large transaction databases and captured real-time point of purchase data, even more information became available to marketers. The growth of purchase-behavior segmentation arose in response to this information flow, giving companies the ability to segment customers based on their age, income, psychographic profiles and past purchase behavior.

In the 1980's, companies discovered "needs-based" segmentation. This approach was made possible by powerful computers and sophisticated clustering techniques, which allowed researchers to classify customers into segments based on what product features and benefits were most appealing to them. This approach provided managers with some helpful insights but failed to take over as the standard for segmenting markets because the segments it uncovered were often intangible and difficult to understand and target.

Today, companies mostly use a combination of demographic and psychographic data as the basis for market segmentation. Although such segmentation schemes are commonly accepted for organizing sales, marketing and accounting data, the unintended and often undesirable affects that adopting such a segment classification has on the rest of the organization is often overlooked.

Nortel Networks, for example, who for years organized their small business sales tracking and accounting systems around vertical industry classifications (e.g. public services, transportation, manufacturing) found that its choice of segment classifications passively dictated what resources it hired, the skills it obtained, the processes it executed and the actions it took. When staffing, for example, Nortel recruited individuals to represent most of the vertical segments—transportation, communications, government, etc.—culminating in a set of resources that had a vertical segment perspective, focus and mentality. Sales teams, marketing campaigns and communication programs were devised for these segments. Engineers and designers thought about the markets from a vertical segment perspective and attempts were made to fine-tune product offerings to meet segment specific needs. Most importantly, priorities were set and decisions were made—framed around the vertical market mindset—i.e., "we will add this feature into this product because it appeals to the public services segment and we need to gain market share in that area". In effect, Nortel's market and product strategy, resource selection and capabilities were being dictated by a vertical industry segment classification it had initially chosen for sales, marketing and accounting purposes. This misapplication of segment classification data is a reality in many firms as traditional segmentation schemes create a convenient target for strategists and developers—but these targets are seldom worth hitting.

Outcome-based segmentation offers an advantage because it enables managers to segment customers based on what makes them truly different—the outcomes they want to achieve when hiring a product or service to get a job done.

Our outcome-based model moves managers away from meaningless customer classifications and toward a set of segments that have a positive impact on issues of strategy, R&D, resource allocation and process. Outcome-based segmentation offers this advantage because it enables managers to segment customers based on what makes them truly different—the outcomes they want to achieve when hiring a product or service to get a job done.

Demographic → Psychographics → Purchase Behavior → Needs-Based → Outcome-Based

To adopt this new paradigm, companies must break out of the "label" or "attribute" mindset and accept a new type of information for use in segmenting markets. Using desired outcomes as the basis for segmentation changes the entire outlook of how products are created, positioned and communicated.

It is important to note that applying outcome-based segmentation does not force a company to change the way it collects and tracks sales and accounting data. An outcome-based segmentation scheme can operate independently, helping companies communicate to customers, create new products and services, and define the customer value proposition, regardless of how sales and financial results are tracked.

Outcome-Based Segmentation Methodology

Outcome-based segments are discovered—or created—in much the same way that "needs-based" segments are created—that is with the use of powerful computers and sophisticated clustering techniques. The inputs and the outputs, however, are entirely different. In contrast to traditional needs-based segmentation, customer desired outcomes are used as the basis for segmentation and the resulting segments are quite literally segments of opportunity—groups of customer who find a unique set of outcomes to be both important and unsatisfied. To examine our methodology in detail, let's consider as an example Motorola's Radio Products Group, which manufactures mobile radios that are installed in vehicles and used to communicate with a dispatcher, a central location or other two-way radio users. After experiencing limited growth in what appeared to be a maturing market, in 1997 Motorola looked for new ways to achieve their growth objectives.

For years, Motorola had been using a vertical industry classification to segment the radio market—e.g., utilities, public services, etc.—and often recognized the inconsistencies in customer behavior within and across these segments. Intuitively, they knew another segmentation structure existed, but were unable to define it.

The application of our outcome-based segmentation methodology enabled Motorola to discover the existence of three unique and previously unknown segments. One segment, which comprised 40% of the market, "hired" radio products to communicate privately, so as to not be overheard and to communicate discreetly or covertly, i.e., without being noticed by others. A second segment (28%) "hired" radio products so they could communicate with clear, unambiguous and uninterrupted communications when faced with dangerous, even life-threatening situations. The third segment (32%) "hired" radio products to communicate with teams and groups, coordinating activities and performing administrative tasks.

Up until this point, all products produced by Motorola, and its competitors, failed to address the outcomes uniquely desired in each segment with well-matched product and service offerings. A one-size-fits-all mentality perpetuated the industry. With the discovery of these segments, Motorola was able to optimize a radio product for each segment. The products included new features that addressed outcomes previously underserved and eliminated product features that addressed outcomes of little or no importance to the segment population.

The end result? Better products, at a lower price, with increased customer satisfaction. The resulting products accelerated revenue growth to 18% in a stagnant market, and secured the company's leadership position in mobile radio products.

Our outcome-based segmentation methodology is best described in a four-step process, which includes (1) collecting the required data, (2) choosing the segmentation variables, (3) clustering and (4) profiling the clusters. The ways in which these steps depart from traditional clustering methods are discussed next in detail.

1. Collecting the Required Data

Unlike any other segmentation method, the data required to create outcome-based segments is in fact the customer's desired outcomes. Motorola found, for example, that radio users had nearly 100 desired outcomes when using radio products. They included minimizing the number of communications that can be intercepted by unauthorized parties, minimizing the likelihood of inadvertently making changes to the settings and minimizing the number of communications that are misunderstood. Once captured, they designed a survey instrument—or questionnaire—and administered it to a large number of radio users that represented an accurate sample of the user population. The questionnaire was designed to capture and quantify the importance that users placed on each outcome and the degree to which each outcome was satisfied with the products currently available. Capturing both of these data points is critical in determining which desired outcomes will make the best segmentation criteria.

2. Choosing the Segmentation Criteria

Motorola did not use all the outcomes to generate the segmentation scheme. Instead, only outcomes that explained *differences* in what customers wanted to achieve when getting the job done were included in the clustering process. If everyone wanted to minimize device downtime, for example, then that outcome would not help to explain differences between customers.

Identifying what makes customers different is the key to successful segmentation. Outcome-based segmentation defines these differences in a unique way. In contrast to traditional clustering methods, which typically look at differences in the *importance* customers place on an attribute, our approach looks for differences in the *opportunity* for improving the satisfaction of a desired outcome. This opportunity variable, which was also introduced in *Turn Customer Input Into Innovation*, HBR January 2002, is calculated as [importance + (importance—satisfaction)] and enables managers to quickly determine which desired outcomes are both important and unsatisfied, indicating where customers want to see improvements made. It is these differences that enable managers to discover segments of opportunity.

Figure 1. Selected Segmentation Attributes

1	Minimize the number of messages that are misunderstood
2	Minimize the number of interruptions during a communication
3	Minimize the amount of interference encountered when communicating
4	Minimize the effort required to communicate discreetly – without others noticing
5	Minimize the number of annoying incoming communications
6	Minimize the time it takes to confirm receipt of a communication
7	Minimize the effort required to establish a record of the communication
8	Minimize the number of communications that can be intercepted
9	Minimize the likelihood of making inadvertent changes to established settings
10	Minimize the effort required to program the device
11	Minimize the effort to operate the device with gloves on

In the end, for example, Motorola discovered that one segment found privacy and security-related outcomes to be important and unsatisfied while another segment found clarity, uptime and other outcomes associated with use during life-threatening situations to be important and unsatisfied. These segments of opportunity want to get the job done in a unique way and value improvements along different dimensions. Discovering the existence of such segments is the key to uncovering high-growth market opportunities.

To determine which outcomes explained customer differences, Motorola looked for outcomes that were important and unsatisfied to some members of the population, but not to others. Using statistical analysis to help with this evaluation, Motorola determined that only 11 of the nearly 100 outcomes met this criterion. They are shown in Figure 1.

3. Clustering

Motorola used clustering algorithms found in a commonly used computer-based statistical analysis programs to execute the clustering process. The clustering algorithms focused on the opportunity ratings given to the 11 selected outcomes and placed the respondents surveyed into a predetermined number of segments based on their responses. It is the use of the opportunity rating as the basis for segmentation that makes this approach truly unique, as the resulting clusters indeed identify segments of opportunity.

In the end, Motorola decided a 3-segment solution was best, as the segments contained 40%, 28% and 30% of the respondents respectively. In generating the 3-segment solution, the clustering algorithm took all the users that rated outcomes 4, 7 and 8 (as shown in Figure 2) both important and unsatisfied and grouped them together to form Segment 1; all users that rated outcomes 1, 2, 3, 9 and 11 important and unsatisfied were grouped together to form Segment 2 and all those rating outcomes 5, 6 and 10 important and unsatisfied were grouped together to form Segment 3. The clustering algorithm determined that this grouping did the best job of explaining differences in the way the surveyed respondent valued the 11 segmentation criteria.

Figure 2. Segment Differences

Segment 1: 40%		Segment 2: 28%		Segment 3: 30%	
4	Minimize the effort required to communicate discreetly – without others noticing	**2**	Minimize the number of interruptions during a communication	**5**	Minimize the number of annoying incoming communications
7	Minimize the effort required to establish a record of the communication	**3**	Minimize the amount of interference encountered when communicating	**6**	Minimize the time it takes to confirm receipt of a communication
8	Minimize the number of communications that can be intercepted	**9**	Minimize the likelihood of making inadvertent changes to established settings	**10**	Minimize the effort required to program the device
		1	Minimize the number of messages that are misunderstood		
		11	Minimize the effort to operate the device with gloves on		

4. Profiling the Clusters

When the 3-segment solution was first generated, Motorola had no idea what held each segment together or what types of users they would find in each segment. They began to understand the segments by profiling them—that is by applying descriptors to them. When the questionnaire was administered, in addition to the outcome-related questions it contained over a dozen questions that would help Motorola understand what characteristics each segment possessed. The questions included the users age, their job title, how they used the product and what they used it for, industry classifications, frequency of radio use, geographic location and several other important descriptors.

These types of questions are critically important to the development of the survey instrument, as they are instrumental in understanding segment content once the clusters have been identified. After analyzing the data, Motorola quickly concluded, for example, that Segment 1 valued privacy and security-related outcomes, often conducted covert operations from inside a vehicle, included federal and state police, security and other individuals, consisted of younger users and were likely found urban areas. Segment 2, they concluded, was comprised of users that rely on their radios when involved in potentially life-threatening situations. They consisted of mainly firefighters, police and security personnel that often leave their vehicles to perform assignments, but must maintain vehicle contact at all times. Segment 3 was comprised of coast guard personnel, locomotive engineers and other users that rely on radio communications throughout the day to carry out their job functions. In contrast to the other segments, their need for privacy and managing emergency situations was negligible. With the segments profiled, Motorola was ready to begin to use this new information as the foundation for its market and product strategy.

Applying Outcome-Based Segmentation to Innovation

Outcome-based segmentation not only provides companies with new market insight, it also provides managers with the information they need to build valuable product portfolios, discover and size high-potential growth markets, create outcome-based brands and to discover market entry points for disruptive technology. In effect, outcome-based segmentation goes a long way in establishing the foundation of a successful market and product strategy.

> With knowledge of what customers valued, Motorola... was able to devise and deliver products that helped customers perform the job of communication in the way they wanted that job performed.

Building a Valuable Product Portfolio

When building a product or service portfolio, it is helpful for a company to know which outcomes are valued across the market and which are valued uniquely within specific segments of the market. With this knowledge, a company is able to create a product "platform" that includes features and functions with universal appeal. From there they are able to build upon this platform, creating products that include additional features uniquely valued by users in each of the targeted segments. Using this approach, companies are able to create products that deliver significant value and reduce time to market, as they include only valued features. As a result, customers receive, use and, perhaps most importantly, pay for only those features they value. From a customer's perspective this makes a product more attractive, easier to use and less expensive—contributing to higher levels satisfaction.

Motorola took this approach as it devised a product platform that included features for audio clarity, noise reduction and extended range—features that addressed outcomes valued across the market. For segment 1—the segment that valued privacy—they added other features to this platform as shown in Figure 3. They included enhanced encryption, a mechanism to prevent others from overhearing a communication, noiseless operation and other features. For segment 2—those involved in life-threatening situations—they added voice command technology, emergency locators and modified the interface to accommodate users wearing gloves. For segment 3—those involved in managing work assignments—they added features that made it easier to program the radio and ensure messages were received.

Figure 3. Motorola's Approach

	Segment 1: Privacy	Segment 2: Emergency	Segment 3: Administrative
Outcomes Desired	• Communicate discreetly • Record of communication • Low interceptions	• Clear messages • Few interruptions • Lower interference • Low risk of inadvertent changes to settings • Use with gloves on	• Few unimportant incoming calls • Quick confirm receipt • Easy to program device
Characteristics	• Covert operations inside vehicle • Younger • High urban concentration	• Firefighters, police, security personnel • Often have to leave vehicles • Must maintain contact at all times	• Coast guard, locomotives, etc. • Rely on radio for their daily job • Perform admin tasks
Resulting Solution	• Enhanced encryption • A mechanism to prevent others from overhearing a communication • Noiseless operation	• Voice command technology • Emergency locators • Modified the interface to accommodate users wearing gloves	• Easier to program the radio • Mechanisms to ensure messages were received

With knowledge of what customers valued—and what made them different—Motorola was able to prioritize which outcomes offered the greatest opportunities for improvement across the market and within each segment. They were able to devise and deliver products that helped customers perform the job of communication in the way they wanted that job performed. By aligning their thinking and resources with the customer's perception of value, they devised a radically different and effective market and product strategy.

Identifying High-Potential Growth Markets

When companies look at the size of a market, they often rely on financial data to determine its size in terms of the revenue it has generated in the past. Using this measure, markets for which products have yet to be developed cannot be measured, as they have yet to generate revenue. As a result, companies often ask, how can a high-potential growth market be identified and sized before it emerges? Outcome-based segmentation goes a long way to answer this question as it makes it possible to identify and size a market from a non-financial perspective. Lets look at how the "day-trader" segment in the securities market—which was created and led by E-Trade—could have been discovered by the then market leaders using outcome-based segmentation.

From a traditional market measurement and segmentation perspective, the "day-trader" market showed little revenue potential or growth in the early 1990's. At the time, traders who wanted to make many transactions within short periods of time could only do so by holding a seat on the Board of Exchange. With a limited number of seats—and a seat price that exceeded the annual incomes of most people—it is not surprising this market was relatively small from a revenue-producing perspective. As a result, companies were discouraged from making investments in this market.

However, if companies such as Merrill Lynch were to study the market from an "outcome-based" approach, they would have seen a very different picture. Throughout the 1990's, when "hiring" products to make trades, many people wanted to increase the number of trades that could be made per day, minimize the time it takes to complete a trade and minimize the cost of making a trade. Using outcome-based segmentation—managers would have found that a fairly large segment of the population found these outcomes to be both important and unsatisfied. The percentage of people in this segment—and the size of the market—could have easily been established. Indeed, the market existed, but potential customers were waiting for a viable solution to arrive. When it did, they were quick to act, generating revenues for companies such as E-Trade and establishing the market from a traditional, financial perspective.

Marketers that need to be more proactive in finding high-growth market opportunities can use outcome-based segmentation to identify the jobs that people are trying desperately to get done, without good products or services available to get them done. Thus, had Merrill Lynch or other large brokerage firms been attuned to the opportunity available for the "frequent, quick, low-priced-trades" job, they could have established themselves as leaders in this market.

Creating Outcome-Based Brands

Branding a product around the outcomes customers want to achieve when using that product or service is powerful as it focuses the consumer's mind on what job it is the product or service will do for them. For example, the power-tool manufacturer Milwaukee branded its line of reciprocating saws with the name SAWZALL, placing it squarely in the minds of electricians, plumbers and those in demolition when they want to cut through wood, metal, nails, drywall and other construction materials they encounter. Milwaukee positioned its brand to capitalize on this outcome and designed its SAWZALL to cut though just about anything. Today, the SAWZALL dominates this market and the name is often generically used to describe any reciprocating saw.

Brands founded as outcome-based often possess a strength that cannot be matched. Their direct application and clear communication to the customer provides a lasting impression and reduces confusion in the course of making purchase decisions. They enable the sales organization to target their efforts much more specifically, to state the value proposition in terms that directly relate to the customer's key objective and their desired 'jobs to be done'. Brands are intended as a shorthand reflection of a complex service or product. Outcome-based brands accomplish this task with the utmost accuracy.

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Discovering Market Entry Points for Disruptive Technology

A technology is disruptive when it delivers dramatic improvements along desired outcomes that are uniquely valued by a certain segment of the population—but fails to satisfy the outcomes important to the mainstream. A disruptive technology often enters the market in a non-threatening manner, gaining little initial acceptance and outright rejection in the mainstream. As the technology improves, however, it begins to better satisfy the outcomes that are important to the mainstream and gains acceptance in a larger population—disrupting the market as a whole. [See *The Innovator's Dilemma* by Clayton M. Christensen, HBSP, 1997].

Interestingly, a technology can successfully disrupt a market only if a sizable segment of the population values the outcomes initially improved by the technology. If such a segment does not exist, the technology will struggle to mature, as its development will be difficult to financially sustain. Therefore, when managing innovation, managers must be able to determine if market entry points exist for new and disruptive technologies. With this knowledge, a manager can determine where to disrupt - and if the company itself can be disrupted by others.

To achieve these objectives, managers must know what criterion are uniquely valued by various segments of the market. They must know the size of the segments and the degree to which they value criteria important to the mainstream. Many companies do not have the capabilities needed to obtain this information. As a result, they run the risk of being blindsided by competitors brandishing new technologies.

Using an outcome-based segmentation approach, managers can identify market entry points for disruptive technology and can use this information to proactively advance the technology—targeting it in a segment that offers the best chance for success. In addition, they can use it to defend against a competitive attack, as the approach enables managers to evaluate the potential of a disruptive technology across a broad range of market segments.

With the ability to identify the dynamic upon which the success of a disruptive technology depends, companies are much better equipped to manage disruptive innovation.

Closing

When managers position a product or service squarely on a job that has been poorly addressed in the past—and that a lot of people are trying to get done—it creates a launch pad for new growth. Outcome-based segmentation enables a firm to look at markets in a new light and quickly discover a world of emerging markets and new market opportunities—a world that others cannot see until it is created. By adopting an approach that meets the basic tenets of solid segmentation theory, managers—for the first time—are able to identify just what it is that makes customers different and to perfectly align themselves with the customer's prime objective—to get a job done. As strategists and marketing managers move away from phantom targets and focus on outcome-based segments, companies will begin to more closely tie their resources, processes and capabilities to the creation of customer value.

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