# WE'RE MORE THAN OUR SENSES

## Taking product development to the next level

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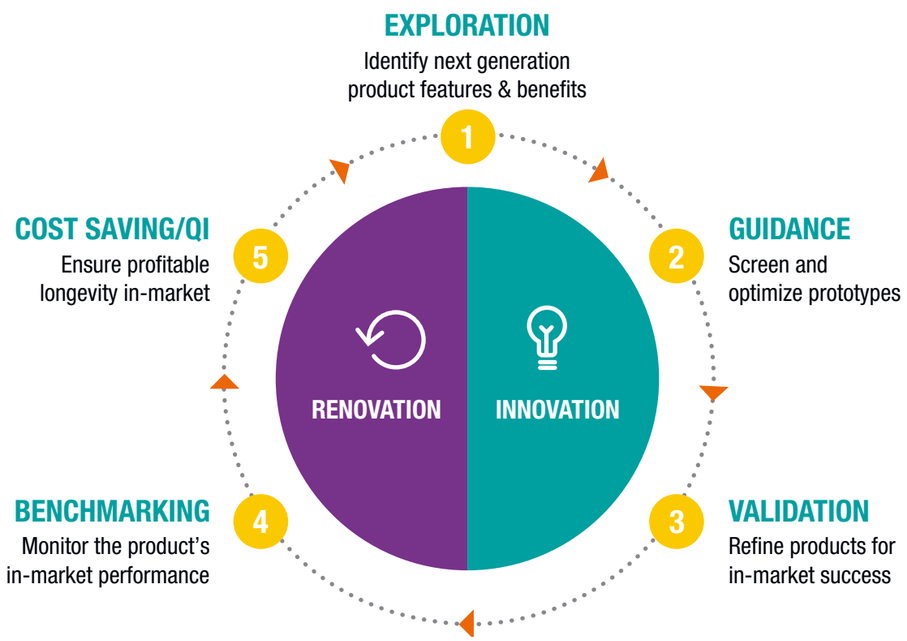
A product meeting the needs of consumers is essential to commercial success, and most of us would assume that the path to success is a technically superior product. However, we hear from clients the challenge that focusing purely on product characteristics that are connected to our senses are not providing a good prediction for in-market success. Behavioral science has shown that product experiences are shaped not only by sensory input but also by product and category beliefs or expectations,[1] and by the broader context in which a product is used.[2] In short, *the total product experience is driven by more than just sensory signals*.

While a satisfying product experience is necessary, it alone is not enough for commercial success. The ultimate decision to purchase a product or not is strongly influenced by whether the product in question can overcome the status quo. In many cases, consumers have an existing solution already, and a new product will have to displace the incumbent.[3] At this stage of the decision process, marketers will need to consider other non-product related factors (e.g., status quo bias, emotional attachment to the existing solution).

Despite behavioral science becoming more important in the market research industry, within product testing and development, the principles of behavioral science have been insufficiently considered.

**Figure 1** Product Testing Lifecycle




*Source: Ipsos*



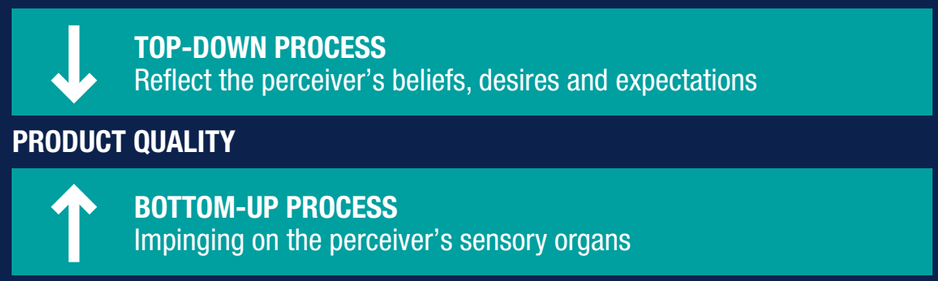
In this paper, we show how incorporating behavioral science into product testing can lead to a better understanding and utilization of product testing results and how it encourages new innovative ways of conducting product testing. We also acknowledge simple ways of integrating behavioral science in product testing, without the need to train colleagues and clients to become behavioral scientists in order to understand the research results.

Given the abstract nature of this topic, we introduce a **behavioral science, product testing-centered framework** to provide structure and illustrate the framework with numerous Ipsos and academic examples. While our primary goal is to help researchers and marketers develop a more holistic product development across the whole product lifecycle that captures the total product experience (Figure 1), we also address how we can get better product discrimination - a common challenge in product testing.

## THE TOTAL PRODUCT EXPERIENCE (TPE)

A product is at the core of any marketing activity and the physical manifestation of a brand promise. Awareness and marketing effectiveness will generate trial, but the product performance in meeting consumer needs, being memorable and offering the right value are critical for repeat purchasing. To improve product performance to drive repeat purchases, we need a better understanding of how consumers assess product quality. There are two processes influencing the quality perception by consumers.[4] The top-down process interlinks with consumers' past experiences and desires. The bottom-up process reflects consumers' sensorial experiences (Figure 2).

**Figure 2** Product Quality Assessment




*Source: Ipsos*

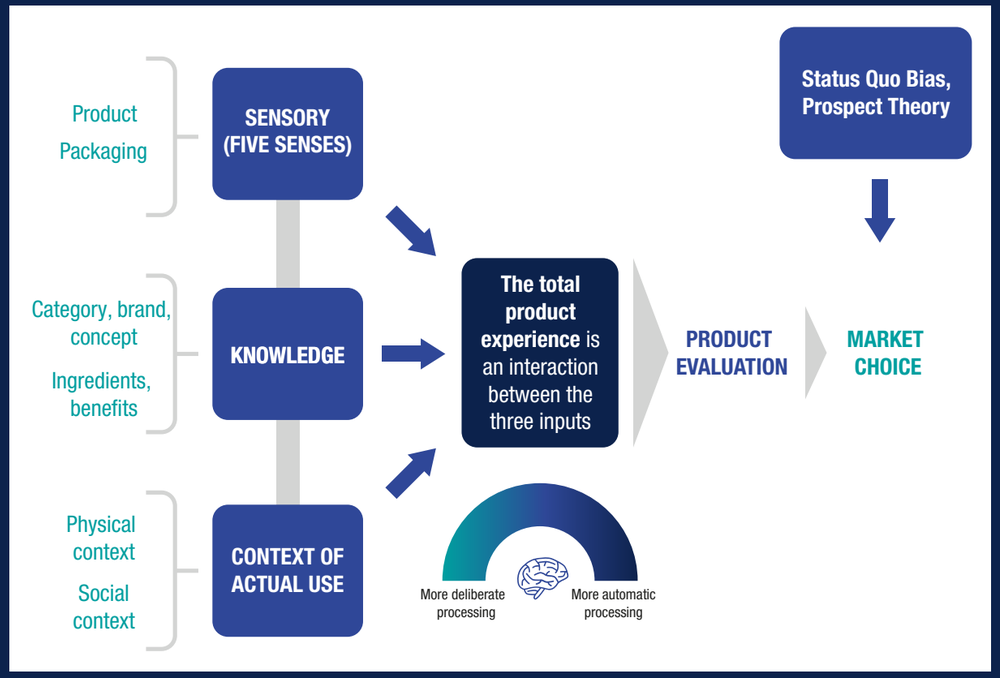
However, these two processes aren't isolated. The context in which consumers evaluate the products needs to be considered as well. Therefore, considering the context, we can broadly speak of three forces that influence how a product is experienced (see Figure 3):

1. **the sensory input** we get from using a product (e.g., taste, feel, smell, appearance);
2. **the knowledge** we have of a product (e.g., brand, ingredients); and
3. **the context** in which a product is used.

The three inputs interact with one another in the consumer's mind, and this cognitive process ranges from more intuitive processing to more deliberate processing.

The crux of this framework is the proposition that all three sets of input exist in the real world, and that they interact and modify one another. The knowledge of a product/brand, for example, can influence how we respond to sensory inputs. In addition, the knowledge about the category and the brand can lead to different biases impacting the product experience. After product evaluation, consumers decide if a product has met their expectations and should become part of their purchase repertoire. In this upstream part of the decision process, other psychological factors impact whether the product will be purchased or not (e.g., status quo bias).

**Figure 3** The Total Product Experience (TPE)




*Source: Ipsos*



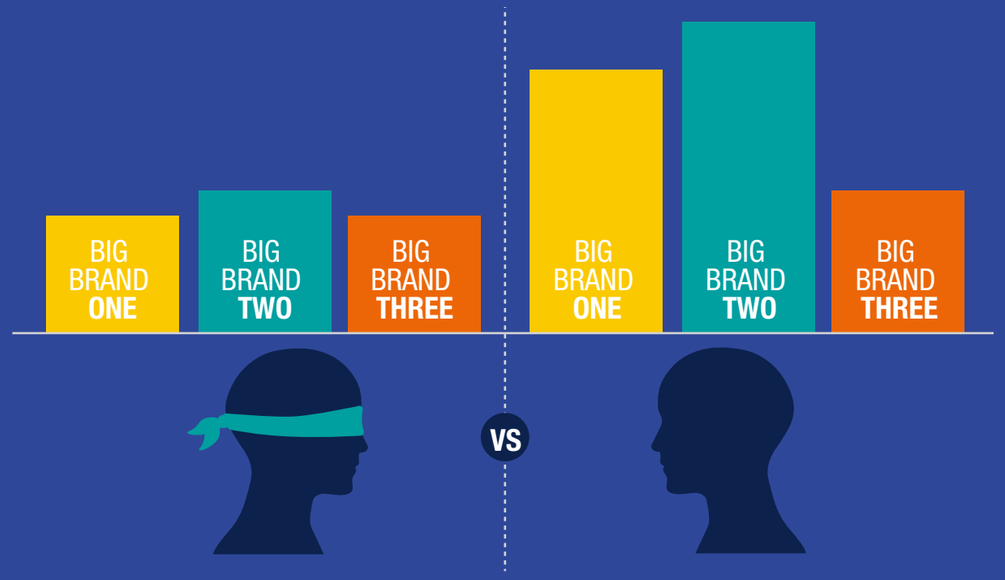
## GOING SOLO WITH SENSORY ONLY

Many manufacturers use blinded tests to determine the impact of product characteristics, without a brand influence. This is usually done at the early stages of product development when a brand has yet to be assigned to an innovation, or when there is an explicit desire to evaluate products without the influence of brand (e.g., in post-launch benchmarking studies). While there are good reasons for a blind test being appropriate (for instance, as a basis for intrinsic product optimization and preference segmentation), our framework makes it clear that, even in an unbranded product test, leveraging all three forces can help to improve the product testing quality.

Our research has shown that when brands are differentiating and have a strong equity, products are more discriminating when tested branded than blinded. This can lead to the situation that when consumer-based sensorial feedback is the main input in blinded studies, one consequence may be a lack of discrimination between the products tested in comparison to branded studies. This is particularly relevant for blind studies with an action standard set to superiority.

As an example, we share the findings of a study where the products were tested both blinded and branded (see Figure 4). There was no discrimination in the blind condition, but there was significant discrimination in the branded condition. While the primary intent of this example is to show that we get more

**Figure 4** Differences in discrimination between blinded and branded tests




*Source: Ipsos*

discrimination as consumers get more input for product evaluation, the example serves as a reminder that the results of blind tests should be confirmed with branded tests. In this example, the three products are at parity when blinded but not when branded.

In general, the more inputs there are into a product experience blind or branded, the more variation we see in the results. When limited to only sensorial input, differences in the technical specifications of products may not translate to noticeable or detectable differences among consumers. This problem becomes more likely as the quality of products improve due to the increased availability of better manufacturing technology to all. An analysis of our product testing database of two million responses provides support that product quality is improving gradually over time. While showing little variation over a ten-year period from 2012 to 2021, overall rating - a proxy for product quality - did increase slightly from the low 5's to the high 5's (on a seven-point rating scale).[5] Therefore, we need to think about enhancing the discrimination in blind product tests and not only branded studies. For this there are several options: adding other data, including sensory cues, considering subconscious available knowledge, product expectations and context.

## ADDING OTHER DATA TO THE TOTAL PRODUCT EXPERIENCE

To enhance the discrimination between products for driving superiority, we can consider other data sources besides traditional consumer surveys. Other common sources are the data from a trained sensory panel or product analytical data. But also, more behavioral consumer responses, coming from open-ended product reviews and choice-based tasks involving response time or other biometric data can be helpful. Using a combination of artificial and human intelligence the data sources can be leveraged to optimize the discrimination and the prediction of superior products. For instance, at Ipsos we employ a product optimization model using historical benchmarking data to offer a prediction for future prototypes.



## GIVE CONSUMERS A CLUE YOUR PRODUCT IS WORKING - A SENSORY CLUE!

While it is known that sensory inputs impact evaluation, what may be less known is how sensory inputs that are seemingly irrelevant to a product can influence our beliefs of products and impact the final evaluation. You may have heard of the proverb "seeing is believing". If we see something, then it is real. This logic can be applied to our other senses as well (Figure 5). If we can hear, smell, or feel something, then it must exist. This principle is often utilized by manufacturers to create empathy and convince consumers that a product is working or to enhance the experience of the product.[6] Figure 5 illustrates some good examples.

The point is that for many products it is difficult to determine if the product is working. One way for manufacturers to convey that information is to provide sensory signals that we can detect, even if they do not contribute in any real way to the product efficacy. These sensory signals become heuristics (simple decision rules) that consumers use to determine if a product is working.

Of the three inputs to the Total Product Experience, sensory is the most broadly accepted and common view of how a product can drive an evaluation. That is, our brains process information from the product as the raw data of the direct sensorial experience. This is often referred to as bottom-up processing. It is so called as it involves information traveling 'up' from the stimuli, via the senses, to the brain which then interprets it, relatively passively.

**Figure 5** Sensory cues to indicate a product is working or to enhance the total experience


*Source: Ipsos*

# HOW KNOWLEDGE CAN MODIFY SENSORY

Most of us would like to believe that we can objectively and accurately process sensory signals. For example, if we tasted two coffees that are identical, we should evaluate them similarly. In truth, the knowledge consumers have of a product or category can modify the sensory input from products. This has been called top-down processing, as the brain is essentially 'sending down' stored information to the sensory system as it receives information from the product. When this happens, our final evaluation is impacted not just by the sensory signals we receive, but also by our knowledge of the product. There are many studies that illustrate the impact of knowledge on a product's overall evaluation, preference, or consumption.

For example,

- Coke is rated higher when consumed from a cup with the brand logo rather than from an unmarked cup.[4.]
- A slice of turkey is rated higher when it is believed to be from a popular brand rather than an unpopular one.[8]
- Perrier is preferred to Old Fashioned Seltzer when the beverages are consumed with the brand labels showing, but not otherwise.[9]
- Consumers liked strawberry yogurt and cheese spreads more if they were labeled 'full-fat' than if labeled 'low-fat'.[10]
- People eat more vanilla ice cream if it is labeled 'high fat' than if it is labeled 'low fat'.[11]



Consumers' evaluations of food products on *specific attributes* can similarly be influenced by communications given before testing:

- Describing the protein of nutrition bars as 'soy protein' causes the bars to be rated as grainier and less flavorful than when the word "soy'' is not included.[12]
- Coffee that is bitter seems less so if consumers are repeatedly told that it is not.[13]

In short, what is in our head can determine how we experience a product. This may happen because our attention is guided by our knowledge, or our knowledge may change the actual experience itself. Evidence for the former was found in a study where consumers were shown ads exaggerating the qualities of a shirt before or after they were given the shirt.[14] Consumers who were shown the ad before getting the shirt spent more time examining the fabric and evaluated the shirt more favorably than if they were shown the ad after they examined the shirt. When shown the ad before, the ads guided the attention of consumers towards the fabric qualities.

A study conducted by a different group of researchers suggests that knowledge can also change the experience itself.[1] In this study, patrons of a pub evaluated regular beer and the same beer plus a few drops of balsamic vinegar, in one of three conditions. The first group tasted the samples blind (i.e., the addition of the vinegar was not communicated), a second group was informed of the presence of vinegar in one of the beers before tasting, while a third group learned of the vinegar ingredient immediately after tasting, but prior to indicating their preference.

Unsurprisingly, fewer people rejected the beer with vinegar in the blind condition than in either of the two disclosure conditions. However, *when* the information was given made a big difference. Disclosure of the vinegar ingredient reduced preference only when patrons were told about the ingredient before tasting, suggesting that disclosure affected preferences by influencing the sensory experience itself, rather than by acting as an *independent* negative input or by modifying *retrospective* interpretation of the experience.

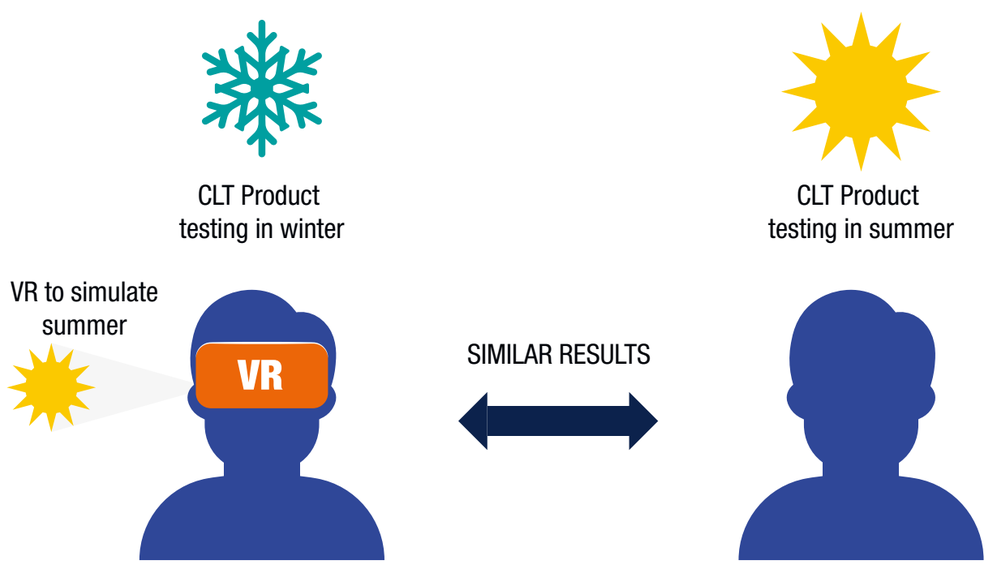
## AND YES, CONTEXT DOES MATTER

The context in which a product is tested matters, as it can influence the product experience and evaluation. In some cases, context may make some needs more salient than others (e.g., consumers' beverage needs are different in summer versus winter) and influence evaluation. For instance, listening to the ocean sounds and seagulls can bring back the memories of being by the seaside and improves the experience of eating seafood.[15] In other cases, context may have a direct influence on how a product is perceived. We define 'context' in the broadest sense, including both the physical, emphatic and social context in which a product is tested. Because of the potential impact of context, testing should ideally be done in the same context when and where the product will be used. For most CPG products, this would be in consumers' homes. But even in a controlled testing environment (central location testing (CLT)), we can create the right context. In those cases where products are consumed out-of-home, we have developed a solution called ProductlSpace where we seek to recreate consumption context, for instance eating an ice cream at coffee bar.

The physical context includes not just the surrounding physical environment but any objects that are part of the testing. In a study that looked at how 'add-on' features impact product evaluation, researchers had students in two groups evaluate the same coffee.[16] For one group, the coffee was presented along with condiments housed in beautiful glass-and-metal containers. For the other group, the condiments were displayed in plain Styrofoam cups. The results: the coffee was rated as better tasting and worth paying more for when the condiments were served in the fancy containers.

However, in most situations, the relevant physical context is the location in which testing is done. As mentioned previously, products are ideally tested in the context they will be used, but there may be times when a CLT is required for greater control over the test administration. Yet we must be aware that if the context is too different from the conditions in which the product will be used, the gain in control may come at the expense of accuracy at predicting consumers' behavior.[17] In such situations, we recommend contextualizing the tests by **priming** consumers. Recent studies in psychology have shown only weak effectiveness and replicability of priming in social context.[18] However, in product testing research we are applying priming only to create a sense in consumers' minds for the right context in which the product would be actually consumed. This can be done in simple cost-efficient ways (e.g., by asking consumers to imagine a scenario using their memory or imaginations) or by using technology to recreate the expected physical consumption environment (e.g., virtual reality (VR)). As an example of a technology-driven contextualization, we used virtual reality to *simulate summer conditions* for a CLT conducted over winter.[19] This VR simulation allowed us to obtain findings that were more like those from a CLT conducted in summer (see Figure 5).

**Figure 5** Using VR to simulate context




*Source: Ipsos*

## BREAKING WITH THE STATUS QUO

Assessing the quality of a product and acting on that assessment are two different things. After a person experiences a product, they need to decide whether they will purchase and use that product again. If this is not the first experience with that product (e.g., the person has been using the product for many years), they will likely continue to purchase the product when the product experience is unchanged. However, if the experience is the first with a particular product, then it is not a certainty the person will continue buying and using it.

This is also important for validation studies such as a concept-product test (CPT). After the initial trial experience, consumers decide whether they will continue buying the product (i.e., repeat). We refer to this decision in our framework as a market choice. In most situations, consumers already have an existing solution, so the decision is a choice between the new and the existing solution. When this is the case, there are non-product related psychological forces that determine whether consumers will choose the new product or their existing solution. One such force is the status quo bias. This is the tendency for consumers to stay with their current solution even if there is a superior option.

To unseat an incumbent is no easy feat. Much of our behavior is repetitive. Our weekly and weekend routines tend to follow predictable patterns, and we often buy the same products repeatedly without much conscious awareness. Many terms such as 'status quo bias', 'consumer inertia' and 'habits' have been used to describe our predisposition towards repetitive behavior. While these terms have slightly different meanings, they all share the common theme that change is difficult. This resistance to change is independent of a new product's qualities. Even if your new product is superior, people may not buy it because of this tendency to stick with the status quo. Suffice to say, marketers need to overcome the forces that underlie the status quo before consumers will buy their products. These forces are covered in more detail in another Ipsos paper.[3]

## USING TPE TO EVALUATE AND OPTIMIZE PRODUCT TESTING

The total product experience framework makes it clear that product evaluation is influenced by three groups of forces, allowing us to assess the adequacy of any product test design at capturing the factors that predict in-market performance (e.g., blind vs branded, CLT vs in-home). While we are not advocating that all three factors need to be present in every test, the framework allows us to think through which factors are missing, and how what is missing might impact the accuracy of our test at predicting consumers' responses **in the real world**.

Our framework can be used to optimize product testing in many ways. Knowing, for example, that sensory signals can be used by consumers to indicate that a product is working, manufacturers can design and systematically test such signals, assessing if they make a difference in efficacy perceptions. Knowing that consumers' knowledge and expectations can impact the product experience, researchers can vary the communications given to consumers before they use the product and evaluate the impact of those communications (e.g., concept, package label, ingredient list). Finally, researchers should consider using additional data sources for improved insights and discrimination and priming to contextualize product tests when context is expected to influence the usage experience.

Understanding the psychological forces that impact product experience also allows us to design **metrics** that more *effectively capture the forces* that impinge upon product evaluation/choice. As an example, when we ask consumers to make a choice between a new product and their existing solution, we also capture subconscious reactions. We allow consumers to provide their own sentiments regarding their choice and capture the response time that it takes to make the choice. The speed of response is used as a measure of the strength of conviction in that choice,[20] if a consumer chooses the new product instead of their existing solution but makes the choice relatively slowly, then the consumer is not considered as having strong conviction in that decision. Response time captures any hesitation due to the status quo bias. Using such implicit measures can also improve the discrimination of product testing results.

## WE ARE MORE THAN OUR SENSES

In the sensory sciences, we are inclined to think that the processes we need to understand start and end with the sensory signals the products provide. Our total product experience framework shows that our experiences are an amalgamation of three forces (sensory, knowledge, and context).

Ideally, these forces are addressed simultaneously, resulting in a **holistic product development, and testing** approach. An integration of sensory and behavioral science will lead to a more complete view of the product experience, and ultimately, to more successful products.

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