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Towards a deeper understanding of in-store shopping behavior. Virtual Reality: breakthrough in shopper insights

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Internship Thesis

Towards a deeper understanding of in-store shopping behavior
Virtual Reality: Breakthrough in Shopper Insights

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Master 2 R
Program: Le Quanti: métier des études en Marketing
2016 - 2017





VIRTUAL

REALITY

Internship Thesis

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Preface:

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SADAOUNI Oumnia

Le, 24/08/2017

A handwritten signature in black ink, appearing to read 'Oumnia Sadaouni', located in the bottom right area of the page.

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I would like to thank my university supervisor Prof. Jean Luc Giannelloni for his insightful guidance and feedback on my work. At many stages of writing this thesis, I benefited from his advice which systematically allowed this paper to be my own work.

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SUMMARY

Today's shopper is different from yesterday's and probably wouldn't relate to tomorrow's. The way shoppers shop has changed with the proliferation of technology. More connected and knowledgeable, they gained the power over brands and retailers. This dynamic is sending shockwaves through companies who turn to Market Research to better understand their shoppers in order to upsell them and thrive.

The purpose of this paper is to contextualize the need of new Shopper Insights whilst the fast-changing demands and the ever-shifting shopper behavior with a mere given attention to in-store where a great deal of decision making is made, examine the state of art of current shopper research methods employed and delineate where they fall short to eventually instance how technological advances in Virtual Reality enable researchers garner faster, realistic and reliable feedback into shopper behavior.

Keywords: shopper behavior, Virtual Reality, Virtual Reality Market Research, Shopper Insights, technology



TABLE OF CONTENTS

ACKNOWLEDGMENTS	7
SUMMARY	8
TABLE OF CONTENTS	9
INTRODUCTION	11
PART 1: - THE COMPLEX MOMENT OF TRUTH: THE EVER-SHIFTING LANDSCAPE OF SHOPPER INSIGHTS	15
CHAPTER 1 – UNDERSTANDING SHOPPER BEHAVIOR: THE IN-STORE BATTLE.....	16
I. The chasm between online and offline retail: is this the death of brick-and-mortar stores?.....	16
II. What do academic researchers and practitioners alike have to say?.....	17
CHAPTER 2 – THE CALL FOR SHOPPER MARKETING	18
I. From category management to shopper marketing: the mark of 20-year-long history of retail marketing.	19
II. Shopper Marketing: the discipline, the approach.....	20
III. Shopper marketing execution: the state of art.....	22
CHAPTER 3 – THE NEED OF NEW SHOPPER INSIGHTS: HOW DOES SHOPPER RESEARCH CURATE?	24
I. Shopper Insight vs. Consumer Insight: The difference.	25
II. The current practice: where does it fall short?	26
III. Shopper Research to leverage technology advancements.....	30
PART 2 - VIRTUAL REALITY RESEARCH: CONVERTING BEHAVIOR INTO DATA	32
CHAPTER 4 – VIRTUAL REALITY IS NOT A FAD	33
I. Where to start: the definition of Virtual Reality.....	33
II. Virtual Reality is no more a hype.....	35
CHAPTER 5 –SHOPPER RESEARCH: THE VR APPROACH	37
I. Converting Behavior into Data (1/2) – What Virtual Reality formats do we have? ...	37
II. Converting Behavior into Data (2/2) – Virtual Reality fields of application.....	39
CHAPTER 6 – SO VIRTUAL REALITY HAS WHAT TRADITIONAL RESEARCH METHODS MISS	43
A chance to test early and often: VR advantages	43
PART 3 - VIRTUAL REALITY APPROACH IN ACTION – CASE STUDIES, TAKEAWAYS, WATCH-OUTS AND MORE	48
CHAPTER 8 – CASE STUDIES	49
I. VR approach in action 1: POS Display testing	49
II. VR approach in action 2: Concept/product testing	50
III. VR approach in action 3: Store Layout testing.....	50
CHAPTER 9 – VIRTUAL REALITY RESEARCH METHODOLOGY: SOME ISSUES TO CONSIDER	51
I. The Virtual Reality store environment is not real but close to real... ..	52
II. The importance of the shopping mission: A minimum control of shoppers’ behavior is required... ..	52
CHAPTER 10 – NEXT STEP: IMMERSIVE REPORTING	53
CONCLUSION	54
REFERENCES	56



SITOGRAPHY	59
TABLE OF FIGURES.....	62
APPENDIX	63
APPENDIX 1: HOW IPSOS MODELS VIRTUAL REALITY ON ITS CORE VALUES	64
APPENDIX 2: VIRTUAL REALITY VARIOUS FIELDS OF APPLICATION IN MARKET RESEARCH	65
APPENDIX 3: POSSIBLE QUESTIONNAIRE FLOW USING VIRTUAL REALITY SHOPPING SIMULATION	66
TABLE OF CONTENTS	67



INTRODUCTION

I love shopping. When it comes to clothing, I love buying things that nobody owns. I am fascinated by “old school” fashion because it simply never dies. I always happen to find the items which arouse my interest online. I go on ASOS.com and browse on their market place. ASOS is my favorite online fashion and beauty store. They don’t have physical stores and guess what, I don’t like going physically to retailers either, unless I am obliged to... that is going to be my mother dragging me to department stores. If I happen not to like the items that I am delivered home, I simply return them the way I received them and get a purchase refund. I am an idle person, I love getting what I want, whenever I want without having to think nor plan for it. If you drop an ice cube kick it under the fridge. That’s me. Internet has made it easy for me, to shop online for what I crave for, be it merely a piece of clothing, a book, a specific volume of a magazine or the spicy Korean 떡볶이 (Tteokbokki) rice cake which I don’t find in Asian convenient stores.

In case you haven’t noticed yet, things are changing around here. And not just by a little, they’re radically changing. The driving force behind the change I am speaking about, is this complete turn in the way shoppers are shopping.

Shoppers are making different decisions and their behavior is shifting, utterly. I now have choice, plenty of choice. We are not plainly talking about shifting to e-commerce because there is more to it. What is actually happening is the end of the one-stop-shop and the beginning era of the “Omnichannality”. Isn’t it a great reversal of almost a century long trend in shopping? At its heart is internet along with the proliferation of technology. Today’s shoppers are frequently weaponed with reams of information prior the purchase. Offers and price comparisons, recommendations, product reviews and many other information that has proliferated with internet, toppled conventional shopping and empowered consumers over retailers and manufacturers in every step of their purchase process, or what we call, the *path to purchase*. The figure below depicts the growing power of consumers in their path to purchase. A path that has been widely interrupted with new shopping patterns supported by new technologies.

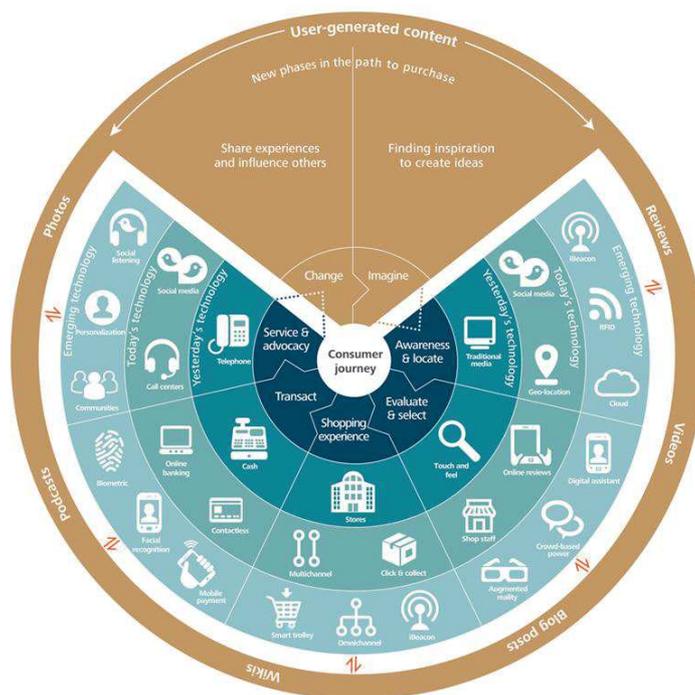


Figure 1: The interrupted path to purchase

Source: “The growing power of consumers,” The Deloitte Consumer Review,12 Deloitte LLP.

These are tumultuous times for the consumer goods industry. I can relate since I was allocated to the FMCG (Fast Moving Consumer Goods) team during my internship at Ipsos Marketing. Therefrom, I would steer the focus of this paper on this industry. Question of fact, I assisted several shopper studies where clients were lost in their conflicting product development requirements, ranging from, meeting the needs of their consumers, providing satisfaction to their customers, time-to-market, costs development and eventual reduction and so on and so forth, not catching up to what is going on around them. What’s more, products’ life cycles are getting shorter, the consumers’ needs getting more fragmented and the market introduction getting higher than ever before. Retailers and manufacturers need to react to the new shopper mode. They need to react to the “new normal” in order to win in the world of consumer goods where they need to win their shoppers first. They are now trying to follow up the change. They are starting to invest in understanding shoppers, segmenting them, targeting the right ones in order to be more effective and efficient especially when it comes to managing existing products, iterate new concepts and carrying them off to market.

All the same, they seem to have understood how much of a complex purchase decision journey has become and how consumers are doing their own “homework” before getting to their venue to make their purchases. They have started to compass what is going to set them apart from their fierce competitors. They found out that *consumer experience* is key to their business. That is, indeed, a step forward to win in their circles. According to a study, 89 percent of companies already view shopper experience as a capital factor in competitiveness.



Retailers and manufacturers are picking up the gauntlet striving here and there, to provide their consumers the best experience they would ask for, passing by initiatives in in-store sensory marketing, setting products on fuzzy attributes leaving room for customization before and after the shopping, store reinvention games and what can be a better example than Amazon with Amazon go: the digital prototype grocery store, pulling out the strongest game ever and redefining the in-store experience.

Providing consumer experience is the way to connect the most and the best with the end user. However, the questions remain as follow: Do these experiences address the inherent shifts in shoppers' behavior? Do they try to render the new enthusiastic shopping patterns, which mostly can take place online first then in-store, to eventually provide the "right" consumer/shopper experience? Sometimes unanswered, these questions gear the rationale of shopper marketing.

In spite of the fact that shopper marketing is a relatively young meaty and substantive topic (ShankarV.,2011), continuing innovations in its exercise are being demanded by the significant avulsions in shopper behavior in the recent years. The disruption in the shopping patterns put emphasis on fast, accurate, and relevant shopper insights (Datar et al., 1997). Because who knows, pushing shopper marketing to the limits may become a source of competitive advantages no matter how fierce the retail milieu is.

Thereof, companies are turning to market research agencies to identify their target shoppers, prioritize the channels where they can influence them along the path to purchase to be able to invest in the "right" shopper marketing mix (touchpoint, time, target group and message). Shopper insights play a vital role in the success of the retail space.

During my internship at Ipsos, I have noticed an irrefutable movement of clients wanting market research tools, services and methodologies with a maximum of agility so that they get directional insights and feedback to keep up with the fast-changing environment. This turns to be as well a source of various opportunities for market research, where it also needs to be agilely adaptive to what is happening around. The question remains whether market research can meet and satisfy those ever-shifting shopper marketing demands.

Standardized market research tools to test new store concepts are threatened to be soon disused. For instance, Quantitative shopper studies are based on the respondents' recall of events, when taking online surveys. If I were to ask you when was the last time you bought milk? What was the exact price of that milk? What Point Of Sale materials¹ have you noticed? What emotions did you feel at the moment? Having taken this exercise myself, I only managed to recall 20% of it. That is exactly the

¹ Point of Sales Material stand for Promotions, display, signage, etc., in-store.



reason why it is quite complicated to gather data that would enable retailers and manufacturers understand every chosen shopping behavior at any point of the path to purchase. Understanding shopper behavior and resonating with his needs and preferences is still a black box.

Technological advances in Virtual Reality give a new hope for researchers to better understand the shopper behavior and see through what shoppers are experiencing in-the-moment, what drives them and how decisions are made in-store. It promises to disrupt and alter the way shopper research is conducted. So, we might ask ourselves:

Can Virtual Reality solutions topple traditional shopper research methods into gathering more accurate and realistic shopper insights and giving retailers and manufacturers confidence to drive faster, smarter and more profitable marketing decisions?

Why Virtual Reality? Why not Virtual Reality? And who hasn't heard of Virtual Reality?

In this paper, we first overview how understanding shopper behaviors is a top retail challenge that will implicate innovations and initiatives in shopper marketing metrics. We then discuss the urge of starting a Virtual Reality journey in the context of shopper research which will induce the way shopping behavior is converted into data using this approach to help drive faster, actionable and more profitable decisions. This discussion is followed by an outline of three different case studies which used Virtual Reality research methodology to encompass traditional research shortcomings, and significant takeaways on how the approach plays out in the real world. The paper concludes with directions on issues to consider while using Virtual Reality as a research tool with a quick peek on what other application it can have in the process.



PART 1:

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THE COMPLEX MOMENT OF TRUTH: THE EVER-SHIFTING LANDSCAPE OF SHOPPER INSIGHTS



CHAPTER 1 – UNDERSTANDING SHOPPER BEHAVIOR: THE IN-STORE BATTLE

Connected shoppers. They have limitless options and power over brands and retailers. They are armed with reams of information prior the purchase. Any of their purchase decision is then fully plotted. Sometimes overwhelmed with choice, yet they are enjoying it. They choose retailers that make it easy. They're looking for content, experience, familiarity. No matter how complex their decision journey is, they lean towards convenience.

Retailers are trying to understand their shoppers to win their business. But the shopping preferences are evolving and the touchpoints are multiplying in number, in a digital world. It appears that retailers can't manage these non-linear paths to purchase. Thus, understanding shoppers' behavior is still a mystery. One global leader in retail analytics has listed "understanding consumer behavior" as the biggest challenge for brands and retailers.

I. THE CHASM BETWEEN ONLINE AND OFFLINE RETAIL: IS THIS THE DEATH OF BRICK-AND-MORTAR STORES?

The gap between the online retail and brick-and-mortar equivalent is intensifying as shoppers' expectations are shifting in turn. Consumers expect similar experiences that they find online. Meeting those hybrid consumer expectations and influencing consumers throughout they purchase journey is a top challenge for retailers. Shoppers can fall through the cracks between different hotspots of interaction with the brand if their expectations don't sync with the brands and retailers targeting strategy. We have heard about the FMOT (First Moment Of Truth), the moment when shoppers first interact with the brand at the point of sale. We have also heard about the ZMOT (Zero Moment Of Truth), the point when they first interact with the brand online. Now with the ever-shifting omnichannel behavior, we talk more about the CMOT (complex moment of truth). This is not just another buzzword but a reality serving as a third hotspot of interactions with brands and retailers and that need to be carefully thought through.

We might think as well that online retail is taking over the in-store retail and that the latter dominance is being creeped up in an omnichannel world. There is nothing wrong with the sound of it. However, statistics are here to prove us wrong. According to a study, as many as the consumers who start the purchase decision journey online, on a brand or a retailer website or mobile application, over half of shoppers' decisions are made in-store (Inman, Winer & Ferraro 2009). Thus, this is not a reason for brands and retailers to be alarmed. GMA (Global Marketing Association) on the other hand, puts the proportion of decisions made at the point of the sale at 59 percent. Even though several



publications tailgate many entrepreneurs' prediction of the death of physical retail, consumers still want to shop in-store.

With that being said, manufacturers and retailers are undeniably looking for opportunities to influence shoppers along the entire shopping cycle with its numerous online and offline touchpoints. But the high percentage of decision-making in-store, companies are putting upside efforts to improve considerably the experiences in the brick-and-mortar stores (Löfgren 2005). This where the First Moment Of Truth takes place. Regardless of the complex environment in which consumers evolve in, they still want to have physical contact with the brand, experience and better visualize and understand the product's benefits. Needless to say, that they have prior information to the purchase, and this makes it believable that internet and online experiences play an important role in-store.

Getting to comprehend what makes a shopper purchase a particular product, why they buy when they do, why they choose one product over another, what makes them decide to suddenly drop the purchase, what they would do if their usual product is not available and many other behavioral questions are still the biggest challenge for retailers to unpack a host of opportunities in-store and generate more conversions.

II. WHAT DO ACADEMIC RESEARCHERS AND PRACTITIONERS ALIKE HAVE TO SAY?

A great deal of research has established that consumers diverge in their motivations for shopping (Tauber, 1972), shopping style (Inman et al., 2009), in-store behaviors (Kim and Park, 1997) and frequency of shopping trips. Academic Researchers and practitioners alike have been studying the in-store behavior for more than 60 years (Applebaum, 1951). However, a better understanding of the heterogeneity of shopper behavior inside retail outlets is still underserved. Researches steered all their focus on how shoppers shop but not the rationale behind their chosen behavior. A bigger part of understanding the factors that drive the dynamics of a shopper purchase decision journey in-store, in all its dimensions, is scarce (Sam K.Hui et al., 2009).

Researchers reamed several in-store shopping behavior metrics to draw their models into better describing and understanding the mediation and moderation relationships that could exist between variables of shopping behavior. However, giving the fact that shoppers' behavior continues to disrupt, the models, which represented once the in-store shopping behavior wave, are now subject to a constant change and regular research to tailgate the change. As regards the models describing shopper behavior inside the retail outlet, researchers have identified:

- The length of the shopping trip reflecting the amount of time spent in a store which affects how shoppers cover and navigate in the store (Larson et al., 2005)



- The store coverage to see how much of the store outlet is visited on a shopping trip
- The basket size which reflects the number of items purchased in a shopping trip. The importance of this metric is the fact that it is both a driver of in-store behavior and a consequence of the shopping path taken in a shopping trip (Granbois, 1968). When tracking the effectiveness of shopper marketing programs, the number of items purchase comes handy.
- The composition of the basket which will tell on some of the shoppers' preferences (Sam K. Hui et al., 2009)
- Time pressure, a metric which can influence all of the above (Sam K. Hui et al., 2009)

These models are mainly based on laboratory. This makes the description of the in-store shopping behavior scarce. To build a comprehensive description model of shopper behavior inside retail outlets, a multi-measure approach is needed to glean insights into different dimensions of the in-store behavior (Sorensen H., 2017). Field experiments are then requisite to gather insights throughout the entire shopping cycle (Hui et al.,2009c).

The retail sector has increased in complexity (Sorensen H., 2017). Thus, the description models of the in-store behavior need to be adjusted to reconcile a new world where shopping and purchases decisions are no longer standardized patterns behaviors. Complexity and pervasiveness of the new technologies, the way consumers look for information and make choices will never be assonant.

In the same context, shopper marketing has undergone many initiatives following some environmental factors that drive shopper behavior.

CHAPTER 2 – THE CALL FOR SHOPPER MARKETING

“Knowing the preferences of the shoppers is critical to attract and maintain them” (Lempert P.,2002). Connecting with shoppers and their preferences, forging the brand equity and uplifting sales has never been as challenging as today, especially for the FMCG industry. If we were to profile today's shoppers, according to Deloitte Consultancy 2007 shopper marketing study results:

- 68 percent change brands more frequently;
- 73 percent are channels switchers, they shop in 5 or more different channels;
- Only 26 percent are loyal to an average number of retailers and only 5 percent are loyal to one specific brand.

This appears to be an alarming profile for retailers and manufacturer who are trying strategically to generate the opposite offset. This has led the industry to apprehend whether the right marketing



efforts are steering to the right target, at right time, in the right place and in the right touchpoint. Brands and manufacturers are rethinking their marketing efforts looking for ways to better understand their shoppers' holistic behavior across their products categories. (Nelsin and Shankar 2009).

I. FROM CATEGORY MANAGEMENT TO SHOPPER MARKETING: THE MARK OF 20-YEAR-LONG HISTORY OF RETAIL MARKETING.

Retail marketing has undergone several waves of changes in the past 20 years. Tracing the history of the evolution of retail marketing is important to accelerate the development of the current practice. The fierce competition, the weak and narrow profit margins, the ever-shifting shopper's behaviors and the advancement of technology are factors which shape the pattern of changes in the industry. The figure below depicts the series of the industry changing waves of retail marketing organization.



Figure 2: Retail marketing - the big waves

Source: Brian Harris. *Bringing shopper into category management*. In Markus Stahlberg and Ville Maila. *Shopper Marketing: How to increase purchase decisions at the point of sale*. London: Consultant editors and individual contributors, 2010 pp.29

Throughout this slope of history, initiatives to improve areas such as shelf space arrangement, assortment optimization, promotions and displays and pricing strategies in-store are increasingly considered. In the mid-1970s, the first motion was set on the introduction of the POS (point of purchase) scanning technology which provided some data for retailers and manufacturer back then. This was indeed, the first time that the retailing strategic pillars were supported by real data. The latter added up to the personal computing in the early 1980s to introduce the next big wave of retail marketing: Category Management.



Category management was first introduced by Brian Harris who is known to be ‘the father of category management’, in 1989. It was used massively by brands and retailers because it merely gave a strategic framework and business process to achieve the primary objectives as regards sales. The steadiness and credibility of this wave led to the foundation of the next wave, taking category management from its focus on a single category to an entire portfolio. The focus then shifted to solutions more consumer centered. Thereof, the retail world started to witness new store designs that are shopper-friendly kind of format. The principles of category management then altered to a total store application.

One thing led to the other. Shopper marketing. Shopper marketing is about a mere focus of understanding shoppers and meeting their needs and preferences at the point of purchase, or at the FMOT (the first moment of truth). At the heart of the emergence of shopper marketing, as a new concept, is the need and constant search from brands and retailers of a new competitive advantage.

What we conclude from this history slope of the evolution of the modern retail marketing in the past 20 years is:

- the POS (Point Of Sale) data mounted the way for the wave of category management
- category management paved the way to shopper marketing, suggesting solutions that are shopper oriented. Both category management and shopper marketing are in a close connection to better understand the shopper and better manage categories across the entire shopping journey. (Harris and Clutts, 2008)
- the emergence of shopper marketing need new insights, likely to be obtained from shopper research

II. SHOPPER MARKETING: THE DISCIPLINE, THE APPROACH.

Shopper Marketing Definition:

Shankar (2011) defines shopper marketing broadly as “the planning and execution of all marketing activities that influence a shopper along, and beyond, the entire path-to-purchase, from the point at which the motivation to shop first emerges through to purchase, consumption, repurchase, and recommendation,” while Deloitte Research (2007) defined it more narrowly as “the employment of any marketing stimuli, developed based on a deep understanding of shopper behavior, designed to build brand equity, engage the shopper (i.e., an individual in “shopping mode”), and lead him/her to make a purchase.”

Unpacking these two definitions of shopper marketing, lies a deep understanding of shopper behavior. And giving the great number of touchpoints online and offline which has multiplied for the



consumer, in an omnichannel landscape, understanding shopping behavior is undeniably a top retail challenge. Shopper marketing need initiatives to be able to reach shoppers in their element and therefore through new touchpoints.

Have you heard of the term “win-win”? the term has been used to describe the outcome of the partnership between retailers and manufacturers. It sets forth the initiatives that benefit both parties. When developing shopper marketing activities, manufacturers have to align their objectives with the retailers’ marketing strategies. Stores are becoming their own brand providing unique shopping experiences which makes it hard for brands to align in the creation of these unique experiences. In the light of this situation, shopping marketing can be both a discipline and an approach (Jim Lucas 2010)

Shopper marketing: *the discipline.*

Shopper marketing can be thought of as a coiner off insights and understanding shoppers.

Shopper marketing: *the approach.*

Shopper marketing can be thought of as a spontaneous understanding of shoppers upon which retailer and manufacturers can act and react.

The shopper is in the center of the universe. The shopper helps retailers and manufacturers align in term of their understanding of their shoppers and the ability to deliver the in-store experience that connects the best with them. Thus, in the world of shopper marketing, shoppers must also benefit from the initiatives we spoke about in the “win-win” situation. Successful shopper marketing programs and organization is triple-crown. We now speak about a “win-win-win” outcomes aiming for sustainability of shopper marketing programs. (Shankar, 2011). *See figure 3.*

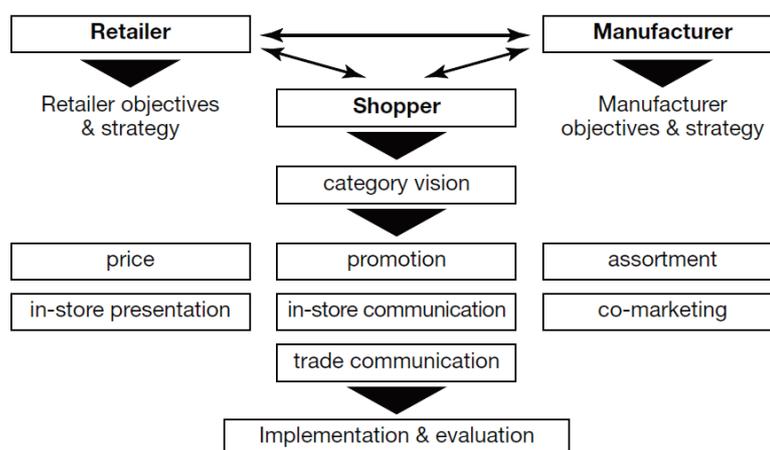


Figure 3: Shopper marketing framework

Source: Luc Desmedt. *Seven steps towards effective shopper marketing.* In Markus Stahlberg and Ville Maila. *Shopper Marketing: How to increase purchase decisions at the point of sale.* London: Consultant editors and individual contributors, 2010, pp.23.



III. SHOPPER MARKETING EXECUTION: THE STATE OF ART

Now that we've traced the history behind the emergence of shopper marketing practice, unfolded its definition to being both a discipline and an approach and inscribed its DNA as threefold which initiatives should benefit three actors: the shopper, the retailer and the brand, in this section, we will draw the state of art of shopper marketing execution through initiatives that can be analyzed using the framework shown in figure 4.

The emersion of shopper marketing, as we discussed previously, was supported by the significant changes in shopping behavior, still evolving. Although it is a young area of retail marketing (Shankar, V. 2011), several environmental forces are shaping the practice to see continuous initiatives and innovations. In the thick of those factors, we find regulation which translates to the heightened competition that is no surprisingly forcing retailers and brands to enter the game of creativity to find unique ways to market to shoppers (Kopalle et al.,2009). Another driver would be globalization. Powerful retailers, here again I would want to take Amazon as an example, are soothing their dominance all over the marketplace. The heightened level of their creative thinking is influencing shopper's behavior especially within the store. On the other hand, smaller companies are trying to enforce their shopper marketing programs to be part of the big picture. We will then stop at the most significant driver of innovations in shopper marketing: technology. With internet, shoppers are now taking the lead of their decisions. This has opened up more opportunities for brands and retailers to reach out to shoppers through new touchpoints across their path to purchase, influence their behavior and attitude (Shankar and BalasuBramanian 2009), particularly in-store (Shankar et al., 2010).

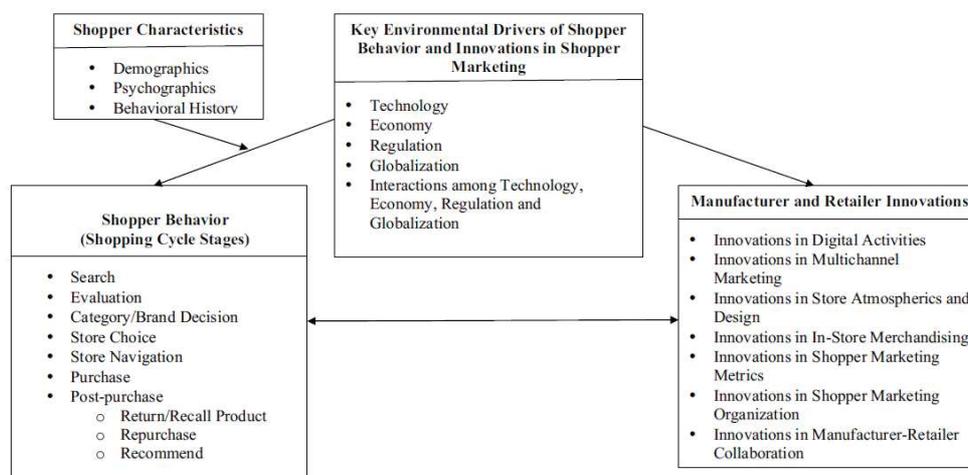


Figure 4: A framework for analyzing innovations in shopper marketing

Source: Shankar et al., "Innovations in Shopper Marketing: Current Insights and Future Research" Issues Journal of Retailing



Shankar's conceptual model on innovations in Shopper Marketing metrics reminds us that shopper behavior also supports these innovations, which in turns, remold shopper behavior. Major areas of focus have emerged to serve the changing shopping environment:

- Personalization has appeared to be a major innovation in shopper marketing. That is, meeting the unique preferences of the different profiles of shoppers is a way to influence their perceptions into taking decisions as regards brands or channels.

Challenge: every shopper has got a unique profile, different needs and preferences.

- In-store innovation began with the acknowledgement that shoppers lean towards exciting shopping atmospherics and in-store designs (Kaltcheva and Weitz, 2006)

Challenge: How should retailers gear their stores' design toward their shoppers need for convenience and familiarity?

- Customized sensory experiences. Shoppers react differently to sensory cues (music, color, odor, lighting, etc.) (Mitchell, Kahn, and Knasko, 1995). The role of marketers is to come up with creative ideas to influence shopping behavior in-store.

Challenge: today's shoppers are seeking similar store experience as they find online.

- Aisle placement, shelf facings and in-store merchandising. Appropriate categories placements in different aisles can improve retailers' overall sales (Bezawada et al. 2009). This is a great opportunity for marketers to glean shopper insights on shelf facings by tracking shoppers' navigation in-store (Chandon et al., 2009). Eye-tracking is one of the electronic tracking that can be deployed for this matter.

Challenge: the external influence that deprive retailers from taking sound decisions. Controlled experiments are highly needed.

- Displays. In-store promotions play an important role in influencing shoppers' decisions in-store, particularly when it comes to unplanned purchases (Stilley, Inman and Wakefield, 2010a, b).

Challenge: measurement and implementation of displays are still a black box.

In short, Shopper marketing is set as a strategic priority and an enabler of growth. According to Deloitte Consulting shopper marketing study results, 53 percent of the manufacturers identified shopper Marketing as a strategic enabler of growth. Nevertheless, it is quite challenging for most



consumer goods companies to successfully implement it. For marketers to know which programs are the most compelling and potent is still very difficult with the complex path to purchase. That is, shopper marketing lacks performance metrics that are aligned with the changing environment. They have been investing their time and money on shopper research to understand shoppers' behavior and test their reactions to new ideas and concepts. The fact that shopper marketing involves three parties (i.e., figure 3), the performance metrics of a party is different from the other and thus there is a confusion on how to measure the effectiveness of shopper marketing programs. Thereof, the existing metrics of retailers (i.e., store traffic, conversion and eventual sales) or of manufacturers (i.e., purchase frequency, reach, impression, etc.) need to merge and converge toward metrics that address the overlapping effects of rational, emotional and environmental aspects on shopping (i.e., shoppers' natural behavior patterns, attention, consideration, nature of purchase, occasion of purchase, and other cross effects).

To sum up the state of art of shopper marketing initiatives in 3 important points:

- The resulting insights of the current shopper research methodologies (including implicit measurements which answer partly some of shopper marketing metrics) are granular and complex to integrate with other marketing information and thus convert into actionable initiatives. The complexity intensifies when it's about time to combine shopper insights with forecasting and sales planning. And that explains plainly the confusion around the performance of shopper marketing programs.
- Manufacturers and retailers are still dreaming of breakdowns of shopper behavior in his "real shopping mode" carrying out shopping trips just like what they would normally do.
- They are in a constant search of agile research methodologies that would help them save time, money and get valuable shopper feedback.

CHAPTER 3 – THE NEED OF NEW SHOPPER INSIGHTS: HOW DOES SHOPPER RESEARCH CURATE?



WWA² defines Shopper Insights as “any insights necessary to understand the shopping experience including shopper need states, shopping occasions, shopper behavior in-store, drivers behind the purchase decision at the shelf and reaction patterns to particular in-store stimuli.”³

Before examining the current practice of shopper research most managers currently employ, it is useful at this point to make the difference between Shopper Insight and Consumer Insight.

I. SHOPPER INSIGHT VS. CONSUMER INSIGHT: THE DIFFERENCE.

The first obvious difference is the subject of the study: the “shopper” and the “consumer”. When you are at the supermarket shopping for tonight’s BBQ party and choosing which type of steak to buy, how many of it you need to buy, which side dishes you want, etc. the “shopping mode” is on. When at your house backyard, grilling the same steak, music on, picking up on your friend’s last embarrassing anecdote, you are in a “consumption mode”. Nevertheless, there is a reason why I have been using both terms interchangeably. When it comes to seeing people throughout their path to purchase, they are incarnated in both roles. But, when it comes to the use of market research, it is requisite to point out the distinction between Consumer Insights and Shopper Insights because of two main reasons:

- The data collection differs due to the questions being asked by the clients. In general terms, market research (qualitative and quantitative) studies are conducted among consumers. The key learnings are about how, how often, when and why they use a specific product or service. Brand perceptions, need fulfillment, attitudes are also subjects of study. The findings guide clients through marketing and communication questions as well as concept and/or new or existing product tests. On the other hand, a more targeted research will have an exclusive focus on shoppers. The key learning would be about how, when, where, with whom, why they buy in the category. Studying shoppers’ behavior and attitude when they are in-the-moment of the shopping mode gives insights on brand loyalty as they are purchasing from a channel. Here, the key findings give edification on which is the right target group, the right time to influence them throughout their path to purchase, the right message and marketing tactics to use to provide the right store experience and drive sales in-store.

² WWA: Wiston Weber & Associates, a Food Marketing Institute which provides its clients with strategic planning on shopper insights/marketing and category management evolution.

³ Shopper Insights And Marketing Transformation,” Winston Weber & Associates, 2012 <http://www.winstonweber.com/manufacturing/shopper-insightsmarketing/>



- Market researcher agencies need to find themselves well positioned to answer different business questions averaging the right methodologies and tools to deliver guidance and actionable insights on the resulting marketing actions taken.



Figure 5: SHOPPER INSIGHTS: KEY AREAS OF FOCUS

Source: Chart created to illustrate the previous discussion.

After having set clear the distinction between Shopper Insights and Consumer Insights in the context of Market research, we'll dive into the current practice of the shopper research techniques most managers sign off.

II. THE CURRENT PRACTICE: WHERE DOES IT FALL SHORT?

Before unpacking the different research approaches, I think it would be very useful to set a framework to serve as a facilitator into understanding the different business questions that an executive researcher deals with. The framework I will be using for the rest of the paper is twofold:

- Macro Level: refers to questions inherent to store design, traffic flow, adjacencies, etc.
- Micro level: refers to the extension of the previous questions to come down to the product, category, displays and signage.

Now let's start from the beginning. Let's take an example of a manufacturer X wanting to test a new product concept before carrying it to market on a national level.

A. Controlled Test Markets

Traditionally, this is how market researchers would test a new concept and its marketability. The client would create a sample run of the product. The sales team would introduce it to a typical test market. The point of sale data would be gathered by the point of sale data scanner (i.e., the first introduction to Data collection, see "The Big waves" of the evolution of shopper Marketing). The purpose of this data is to largely track sales traffic and market share. This methodology is known by its



“high external validity”⁴. That is to say, that this methodology delivers a veracious representation of the product’s potential once rolled out in the market.

Challenges of the methodology:

- Real Tests Markets has got a slow process. The latter can take six months to a full year to execute the product test. Matter of fact, getting the sample run onto the shelves solely often takes 30 to 60 days.
- The other issue subsumes the cost of the execution phase which can run in the millions.
- There’s also this problem of revealing to the competitors what we are up to. Once they find out the test scenarios, there is a high chance they would try to disrupt the test by rushing extra promotional activities or clone the idea and roll it instead to market.
- Last but not least, the biggest challenge is in the resulting Insights. Given the lengthy process and by the time the research reach its late stages, the market will have changed and the consumers’ purchasing patterns will have been remolded.

In short, this approach makes it hard for researches to determine and pace the effects of particular marketing gimmicks. Another Marketing research option would be to use surveys, in-depth interviews or focus groups.

B. Questionnaires, in-depth interviews and focus groups

If we go back to our manufacturer X who wants to test his new product concept potential into market. The most common methodology for researchers would be to use is Focus groups⁵. The participants would then discuss their reaction to the new concept⁶. The latter would take the format of a written or verbal description and at best a rough sketch.

⁴ Real Test Markets has a *high external validity* as marketers like to call it. This means that the methodology provides the natural competitive context where the product’s sample run is sold to representative group of consumers.

⁵ A group of six to ten people, brought together at research venue to discuss their point of view, perceptions and share their reactions and standpoints about a certain topic, a new product or service with the help of a moderator. The resulting discussions are tape-recorded and transcribed for the analysis.

⁶ It could also be a new product after launch, a new packaging or any promotional material.



Challenges of the methodology :

- The lack of realism of the resulting insights. The latter are not representative of the broader population.
- The second problem has to do with the marketing *stimulus*. The format of the new product concept used in this approach can't realistically stir participants' acceptance or rejection because this usually depends on the real execution of the marketing program.
- Focus Groups lack realism for not taking into consideration the competitive context even though participants/consumers are asked to compare the new product concept with the existing products or with their MOPP⁷. The non-representativeness of the resulting feedback can mislead managers with their marketing programs.
- There is also this problem with the measurement of the shopping behavior. Sure thing, it is a qualitative method and it aims at understanding and not quantifying. However, quantifying the consumer purchase behavior is what managers need in order to set sales and market share estimation, as well as the profit drawn from the adopted marketing programs.

In short, focus groups as well as the in-depth interviews and surveys show a lack of realism for not taking into account the surrounding environment and thus can easily lead managers into unsound decisions. These limitations have led market researchers to seek for a new way to simulate the retail outlet in a control and confidential environment.

C. STM: Simulated Test Market

STMs⁸ came as an alternative to the previous methodologies which have proved critical limitations inherent to the expensiveness, the slow process and the non-confidential settings (Clancy et al.,1994). The setting of the shopping environment is quite simple this time. The simulated market is located in one of the research facilities. Participants are given the mission to shop the test product from a mock-up shelf, stocked with other products from the same category or not, which can be found in a normal setting of any retail market. STMs include the notion of the *shopping experience* that could only be found in controlled test markets. The incentives are free samples of the test products, every time they get selected by participants in a shopping mission.

⁷ MOPP : Most Often Purchased Product.

⁸ Simulated Test Markets include services and tools used by a variety of market research agencies to analyze the resulting data, to know: Designor, Assessor, Bases II, etc.



The data collection goes as follow: the trial and repeat rates are entered into the analytic models supported by a specific tool (i.e., Designor⁹) to which researchers add up sales expectations, advertising and promotional operating costs and the distribution and pricing pipelines.

What might seem an advantage of this approach is the high reach and use from the consumer packaged-goods companies¹⁰. As many as 95 percent of the products' tests using STMs were conducted by FMCG companies, which makes the approach out of reach by the other industries. A number stated by the Advertising Research Foundation¹¹ in a study result. Nevertheless, this only shows one side of the severe limitations of the approach.

Challenges of the methodology:

- Participants' shopping behavior is totally decontextualized. They shop in a "laboratory" setting and thus the shopping experience has little to none resemblance to the real-life scenarios. The generated feedback is then biased.
- To conduct a Simulated Test Market, this assumes the presence of a *physical* representation of the test product. The latter takes the format of a mock-up or prototype that can be placed on the mockup shelf. This leads us to the third problem.
- Market research agencies charge between 100.000€ and 150.000€¹² to test a single new product test¹³. That leaves it an option which out of reach of most of the companies, except for the bigger players.
- The development of the prototype of the mock-up takes a lot of time and is costly. This means that...
- The STMs results cannot be available in early stages of the PD¹⁴ because of the brake element of the must-provision of the physical test product which is time consuming.

⁹ As it is the tool used at Ipsos Marketing.

¹⁰ This is to remind how I articulated the focus of this paper toward the FMCG industry in the introduction.

¹¹ The ARF is a nonprofit market research firm which uses education, events and networking to share knowledge and improve the practice of marketing and advertising
https://en.wikipedia.org/wiki/Advertising_Research_Foundation

¹² An approximate estimation based on experience.

¹³ STMs are also used for any marketing stimulus or programs. Product tests was only set as an example to delineate the current state of art of the different approaches used in shopper research.

¹⁴ PD: Product Development



In short, STMs is a good alternative of the previous methodologies which show nothing but severe limitations into having fast, smart and profitable shopper insights. However, STMs also fear shortcomings which implications are manifest. Cost, speed, time are valuable elements for managers to keep up and cope with the changing shopping patterns and marketing environment. thus, STMs jeopardize its adoption as managers and researchers are seriously considering advanced research models that can interpose at early stages of the PD when managers, whether retailers or manufacturers, are just exploring new ideas and concepts.



Figure 6. SHOPPER RESEARCH METHODS: The shift

Source: Chart created to illustrate and synthesize the previous discussion.

III. SHOPPER RESEARCH TO LEVERAGE TECHNOLOGY ADVANCEMENTS

Walt Disney once said:” You can’t beat pigs with pigs”. The ever-changing retail environment results in a mind-shift among marketing managers and retailers. Shopper Marketing’s focal point will be more centered into a deeper understanding of the shopper behavior. The latter is now the only hunting ground into a greater host of opportunities in-store. Understanding the actual shopper behavior rather than the accepted behavior will unlock rooms for improvement in order to provide purposeful solutions which align with the shopper’s needs and preferences.

As mentioned beforehand in this paper, Shopper Marketing is still in its infancy. The model of how the practice works is still a big mystery. With the research methodologies that we depicted previously and the undeniable need of PD managers and retailers to see their marketing programs perform and



top the marketplace, there has to be a milestone where the answer lies in a new effective and efficient way to analyze shopper behavior in their “natural habitat” rather than in a “laboratory” environment.

Thereof, researchers might ask themselves the following questions:

- How can we collect the right data that would give rise to deep and meaningful insights and harness faster, smarter and profitable shopper marketing actions?
- What kind of new research methodology can enable rational, emotional, financial and environmental drivers overlap when trying to map shoppers’ path to purchase and scrutinize their shopping behavior?

The answer to these underserved questions finds itself in the numerous technological advances. We once spoke about the video intelligence which used facial recognition to capture shoppers’ emotional response to new products, signage and displays. Nowadays, all what we speak about are those “cool” immersive experiences. 3D technological advances are poised to transform how we see the world. Virtual Reality literally drops you into your favorite video game, your favorite destination or behind the wheel of your favorite car. Although it is still evolving, the technology is promising greater opportunities in different industries.

For market research, Virtual reality projects to unlock new opportunities and will offer new hope for simulated test marketing shortcomings. And this is what we are about to unravel in part two.



PART 2

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VIRTUAL REALITY RESEARCH: CONVERTING BEHAVIOR INTO DATA



CHAPTER 4 – VIRTUAL REALITY IS NOT A FAD



Figure 7: the View Master toy

Now who remembers the VIEW-MASTER stereoscopic toy? I came to think about it because it merely makes me think that Virtual Reality started a long time ago. It was my favorite toy back then. Do you remember how it used to be ‘cool’? the excitement that you get by putting those reels in the View Master cardboard? You got to have exactly 7 stereoscopic 3-D photographs on film and mine were all nice travel destinations.

Source: Image downloaded from [http://www.pocketgamer.co.uk/r/Virtual+Reality/View-](http://www.pocketgamer.co.uk/r/Virtual+Reality/View-Master/news.asp?c=63902)

[Master/news.asp?c=63902](http://www.pocketgamer.co.uk/r/Virtual+Reality/View-Master/news.asp?c=63902)

By the way, did you know that in February 2015, Mattel¹⁵ collaborated with Google as they came up with a new version of the View-Master called the “View-Master Virtual Reality Viewer”. This new iteration used VR¹⁶ on smartphones. The photographs that we used to see in those reels of 3-D films are now displayed on the smartphone screen. And instead of inserting the reels directly to the View-Master cardboard, a new AR¹⁷ interface scan the content of the reels to give more immersive 360° panoramas. How impressive are technology advances to bring back a part of my childhood!?

You might have seen people doing VR Sky Diving, going over the most impressive places to explore a particular local life or even surmounting some fears like height or insects in a “horror-themed” VR experience setting. Virtual Reality opens up real opportunities into experiencing the world in a way that we wouldn’t be able to before. But what is Virtual Reality?

I. WHERE TO START: THE DEFINITION OF VIRTUAL REALITY

VR is definitely not something new. It turns out that term virtual reality has emerged in the mid 80s when VR cardboards and goggles first appeared on the scene (e.g., The View-Master toy). VR had a crude start. It first came to life in the 50s when some visionaries believed in the opportunities to see things endlessly on a screen. There was no technology to back the idea which seemed crazy at first and the term “visuals” was then used to justify it. By the time PC (Personal Computer) was booming, the concept of VR was revisited by several inventors in the late 80s and early 90s. However, the chasm between the digital immersive experience VR had to offer and real-life environment was so big and the available technology back then couldn’t deliver what the concept had to unfold. In the mid 90s, VR

¹⁵ Mattel, Inc. is the American multinational toy manufacturing company which took over the View Master toy after several mergers and acquisitions. <https://en.wikipedia.org/wiki/Mattel>

¹⁶ VR : Virtual Reality

¹⁷ AR : Augmented Reality



as an industry was completely forgotten as Internet overshadowed all technological initiatives. Then, not long ago, the broken pieces of the concept were put together with the development of the Oculus Rift¹⁸ which was initiated as a kickstarter¹⁹ campaign in 2012 to be later sold to Facebook in 2014.

VR is certainly having a moment now with the likes of Oculus Rift, PlayStation VR integrated in the gaming system PlayStation 4, google Cardboard that can be used with iPhones and Android smartphones, HTC VIVE and Samsung Gear VR.



With predictions of millions of headsets and billions of dollars of entertainment revenue, VR is coming back on track. It is estimated that by 2020, 76 million headsets will be sold worldwide²⁰ and consumer will have spent around \$3.3 billion on VR for entertainment²¹

Figure 8: VR headsets Sales (Worldwide)

Source: created to illustrate the previous statistics.

SO, WHAT DOES VIRTUAL REALITY MEAN?

There is not just one exhaustive definition of Virtual Reality. Nletter,N (1993) attempted to define it as “any medium in which one is immersed in data that simulates another world so accurately that one feels as though one had been transported into it and is not just viewing it on a video screen” while Brooks (1999) delimited its account to “any experience in which the user is effectively immersed in a responsive virtual world”.

Therefrom, the definition of Virtual Reality has evolved to gain more in breadth and subsume the construct of the technology. WARC²² has made it simple to understand as they defined Virtual reality as “an artificial, computer-generated simulation or recreation of a digital environment. it completely immerses the user, making them experience the simulated reality first hand, primarily by simulating

¹⁸ Oculus Rift is a VR headset hatched by Oculus VR, currently a division of Facebook. It was released in March 2016

¹⁹ Kickstrater is a crowdfunding platform which supports creative independent projects <https://www.kickstarter.com/>

²⁰ Source: W&V: Dossier VR im Marketing: Die Zukunft von Virtual Reality liegt im Kurzformat <https://www.wuv.de/dossier/virtual-reality-im-marketing/die-zukunft-von-virtual-reality-liegt-im-kurzformat>

²¹ Piers Harding-Rolls on a press release <https://technology.ihf.com/584349/>

²² Source: Global news 2016 <http://globalnews.ca/news/2436229/ces-2016-samsungs-gear-s2-smartwatch-to-work-with-iphone-volkswagens-microbus-goes-electric/>



their vision and hearing, but increasingly also enabling movement within the 3D environment and in some cases even touch.”

Let’s see. So, there is an immersive multimedia which is the computer simulated environment that a user can experience through almost all his senses. This experience is often delivered with the help of a headset with sensors or a screen monitor (computer).



Figure 9: Image from CES 2016 that shows attendees engaged in a Virtual Reality Roller Coaster experience

the photo on the left is from 2016 CES Convention²³. I chose this picture because it legitimately unpacks the definition of VR as we see attendees’ high level of engagement and immersion in a virtual route wooden roller coaster experience delivered in VR.

VR is very known by its unprecedented core strength which is the unmatched level of interactivity. It has an incredible ability to fully surround and engulf the user into different life experiences if not a gaming environment. I have tried it several times before and made other people try it as well and they were ultra-excited about it as they felt literally transported into the VR experience.

Too good to be true, is Virtual Reality a fiction?

II. VIRTUAL REALITY IS NO MORE A HYPE

As curiosity grows to dig more around the technology, individuals and organizations have now seriously brought into the idea that VR is not just for the gaming industry or broadly for entertainment solely. Gartner totally agrees with that. If we take a look at the freshly recent Hype cycle for emerging technologies (see, figure 10), we can clearly see that Virtual Reality is positioned in the *Slope of Enlightenment*. That largely means that the technology is widely understood and that it stirs more and more adoption from organizations. That means one thing and not more, VR is moved over to a more mature technology. It hasn’t gone mainstream yet but that’s about it. This should be a sufficient answer to the debates as to whether VR technology can be used in Business to good effect²⁴.

²³ The Consumer Electronic Show (CES) is one of the huge conventions which takes new technologies to the consumer. It takes place in Las Vegas at the beginning of each year.

²⁴ Forbes report. Ford, *Where VR Is Already Manufacturing Reality* <https://www.forbes.com>

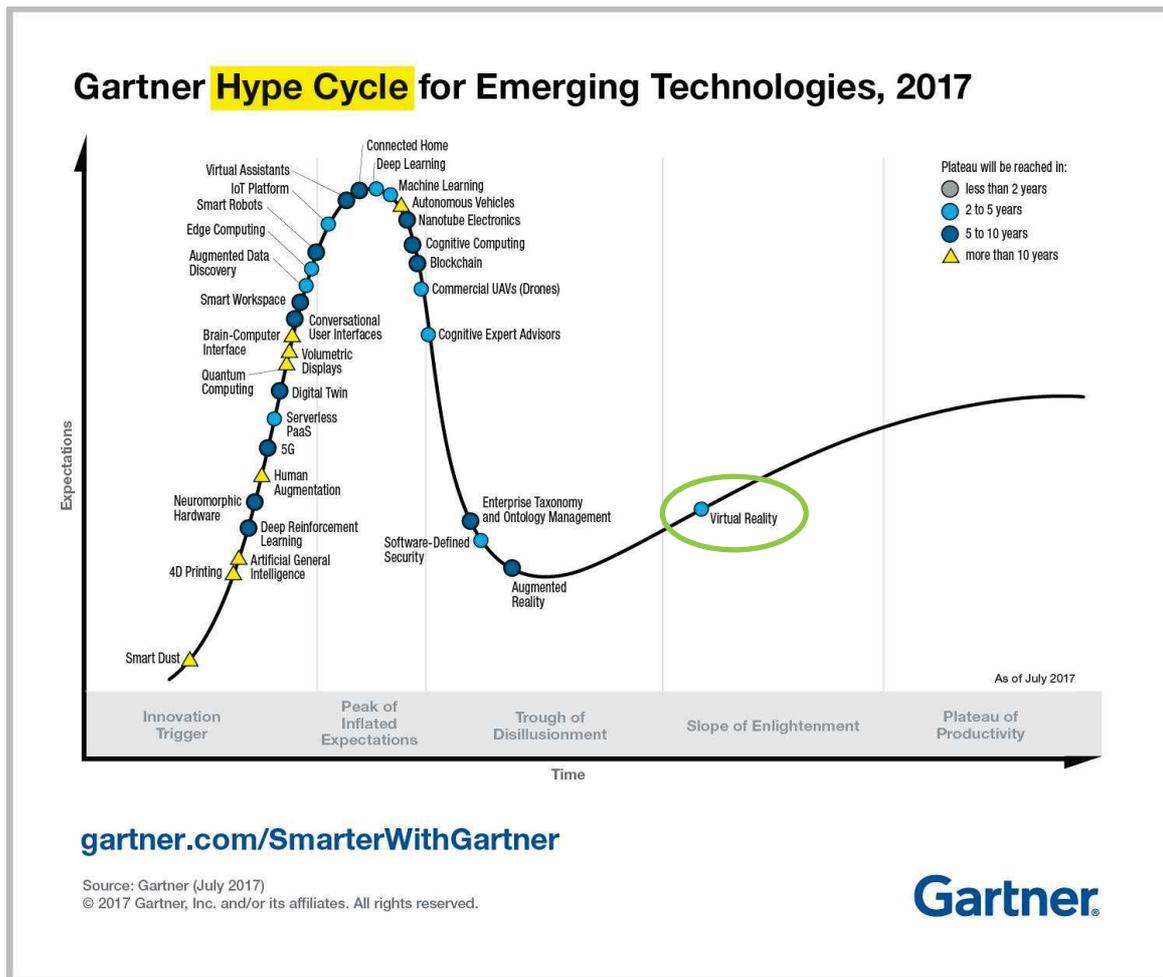


Figure 10: Gartner hype cycle for emerging technologies,2017

Source: © Gartner (July 2017) www.gartner.com/SmarterWithGartner

Just like experiencing VR for entertainment to think that those 360° videos and images are fantastic to the extent that it feels totally real, we can imagine that being transferred into something a little bit more practical. We mentioned previously that VR is known by its ability to fully engulf the user in a hyper realistic experience. The technology is particularly interesting to view what people/users visualize, understand what it's like for them to see, feel and experience things in the moment and then potentially connect with them. This is something that can utterly be modeled on Market Research.

It turns out that Virtual Reality has been used as research tool for decades. Large companies like Procter & Gamble, ConAgra Foods and Intel Corp. have been experimenting VR in their research with different rudimentary versions of in-store simulations to trace and analyze consumer behavior in-store, since the early 1990s. However, because there was this belief that technology might simply just be something of a fantasy and one of the million trends out there blocked its wide-spread use especially for market research, so, the rhythm of its adoption has been slow to latch on. On the other hand, the technology never stopped growing and maturing and is setting up a battle of adoption in various industries for its unique features which can be turned into competitive advantage.



In Market research, to give the ability to participants in a study to interact with a new store concept, a new product idea or any marketing stimuli in an immersive in-store simulation opens up opportunities for researchers to gain valuable insights into shoppers' behavior and test the potential and marketability of new products in the context of the store.

CHAPTER 5 –SHOPPER RESEARCH: THE VR APPROACH

Shopper Data is everywhere, and it's more granular and complex than ever before. Brands and retailers are now looking for 'the' game-changing insights to read through their shoppers. They need 'the' feedback that can enable them to be faster than ever, cheaper than ever, simpler than ever, more confidential in a 100 percent, controlled research environment. they want to be able to synthesize behavioral data across shoppers' decision journey in-store and across products and/or categories. Because one thing is for sure, trying to adapt marketing programs to the fluctuations in shopper behaviors can take a long time to ideate new concepts, test their potential and roll them out in the market, what's more, we can't even be sure that those new ideas will resonate with our shoppers and translate into a ROI.

In this chapter, we will dive into the application of VR in shopper Research, to stop at its added value compared to the traditional methods we delineated in a first part.

I. CONVERTING BEHAVIOR INTO DATA (1/2) – WHAT VIRTUAL REALITY FORMATS DO WE HAVE?

Virtual Reality as a research tool will disrupt the collection data phase. The rest of the process of the research will more likely stay the same. Because shopper research studies are often conducted with a quantitative approach, this will lead us to stick to the quantification part of shoppers' behavior.

So, what format can be used in the data collection?



The most known format of Virtual reality uses a kit of headset and headphones. The latter need to be connected to a computer in order to run an application of a simulated experience or a pre-recorded 360 video. For in-store Virtual Reality simulations, gears and glasses will then be used to get immersed in a programmed store outlet environment application. In a studio or research venue facility, instead of having a mock-up shelf built in a room, participants will just need to use the headset and glasses to get plunged in the store which looks quite real and use the empty space in the room to move freely in order to walk through and navigate the simulated store aisles. The choice of the kit will



be highly dependent on the metrics to be measured in the store and the level of immersion and interactivity needed with the marketing stimuli. (as shown in figure 11)

Gloves or controllers (also called Pain Points) fitted with sensors are also used to enable participants select products off the shelf and view them on the loose to explore the product, its design and all the information on the pack. In this case, the participants will be accompanied by a moderator who will give instructions (e.g., shopping mission) and interview them in the moment after the purchase. This format is called in Market research: In-Studio Virtual Reality research.

Nevertheless, there is going to be roughly two limitations of this format. At least what I come to think of. The first limitation concerns what it does to us, as human bodies. There are some people who gets motion sickness when putting on the headset and getting immersed in the experience. Headset makers recommend to take breaks of 10 minutes every half an hour when experiencing Virtual Reality²⁵. The second limitation concerns the scalability of a market research study. In-Studio Virtual Reality Research cannot break the location constraints when trying to reach a global sample. This means that it can only be used with a relative small sample respecting restricted geographic characteristics.

Type of VR glasses	Possibility of 360° Panorama-Views	To teleport / To start a function by device or eye-tracking control	Controlled movement (Controller)	Move freely in the room	Enables to use your hands: <ul style="list-style-type: none"> • Grab • Show • Move • Close... 	Sound
 GOOGLE CARDBOARD	✓	✓				
 SAMSUNG VR GEAR	✓	✓				
 OCULUS RIFT VR	✓	✓	✓		✓	✓
 HTC VIVE	✓	✓		✓	✓	

Figure 11: VR headsets functionalities

Source: Recapitulatory table created based on the current offerings of VR headset kits



The other Virtual Reality format for store simulations is a 3-D programming of the store or self-outlet that can be accessed with internet using any kind of device; PCs, tablets and smartphones. It is optional in this case to use the VR glasses. This is called: Online Virtual Reality. This format comes as an answer to the In-Studio VR limitations. It doesn't require a research facility because

²⁵ The Guardian news press release on Virtual Reality challenges. <https://www.theguardian.com/technology/2016/jan/07/virtual-reality-future-oculus-rift-vr>



it has a mere online entryway through which participants can still experience the store setting in a 3-D cloud-based²⁶ simulation and walk through the aisles with the help of the arrow-scroll keys shown in the monitor. This format can have rudimentary benefits when it comes to reach a broader sample size on a local or global level which can help discern different shopping patterns across various locations.

Regardless of the format used to observe and understand shoppers' behavior in a given scenario, Virtual Reality has got various implications in different areas of shopper research.

II. CONVERTING BEHAVIOR INTO DATA (2/2) – VIRTUAL REALITY FIELDS OF APPLICATION

If we go back to the macro-level and micro-level framework we set for ourselves in the previous part, we can presume that VR can be utilized in 2 ways:

- Macro Level: where questions are inherent to store designs, traffic flow, adjacencies, etc., VR can be used to provide a realistic retail outlet setting to observe shopper behavior while walking through the store (E.g., supermarket, hypermarket, drugstore, variety store, etc.) to eventually capture his/her reactions to product concepts, new packaging, displays, signage, etc.
- Micro level: which is the extension of the previous level to come down to the specific marketing stimulus (product, category, displays and signage, etc.). in this case, VR can play an important role of providing the natural retail setting where the product is supposed to be.

VR's most important function would be to provide the in-store context that traditional methods do not provide, at the exception of Controlled Test Markets but at a really slow rhythm and a high cost.

When it comes to shopper studies, a great number of RFP²⁷ come down to the 4 questions below:

- How can we drive penetration for our brand(s)/category?
- How can grow the category and brand across products and channels?
- What tactics are needed in terms of product assortment, shelving, pricing strategy, promotion...etc.?

²⁶ "Cloud-based is a term that refers to application and information resources made available to users on demand via the Internet from a cloud computing provider's servers." Webopedia dictionary <http://www.webopedia.com>

²⁷ RFP: Request for proposals, a document that quests proposals from different Market Research agencies on how they can answer their business question(s) and through a bidding process, the client would commission the study for the most attractive proposal.



- What kind of experience my store needs to provide in order to resonate with our shoppers?

Business questions are of course translated into a host of narrow research questions which will steer the appropriate methodology that can, in short, give the best answer. For that, VR can be used in the following shopper research footprints.

Orientation study or Store experience study.

This area enfolds the entire shopping concept. It provides brands and retailers a holistic understanding of how shoppers experience the brand in its natural environment. Shoppers are now faced with a lot of choice. They find themselves confused with the numerous goods assortment and they are bombed with in-store messages. Shoppers are looking for simplicity and convenience as we have mentioned in a previous part. In order to model their online experience to the store, in an omnichannel context, orientation systems can help clarify their perceptions about the shopping experience and about the brands.



Figure 12: Capture of an immersive 3D store environment scene

Source: Image from an internal Virtual Reality supplier

how shoppers orient themselves inside the store. Do they perceive any signage at all? Do they get the message and understand the content? How much time do they spend before finding what they are looking for and what kind of elements unleash their impulsive behavior.

Virtual Reality Implication: the idea behind using VR in this kind of research is to unravel the shoppers' standpoints and perceptions vis-à-vis a brand. Having stores consider themselves as brands as well and not just a medium channel to purchase, VR can help researchers understand the unvoiced strengths of the brand through the combination of Virtual Reality and implicit measurement. It aims at gathering data on

This measurement can be complemented by leveraging the sequence of behavior data that can be now collect in VR. The latter can help researchers get a mapping for store/products review by understanding where does the shopper journey start, what component are reviewed and in what order. Capturing the sequence behavior is actually important to understand the whole shopping process as a "concept" to eventually be able to optimize the shopping experience. In fact, 3-D computer simulations open up the possibility to create a new store concept wherein VR can average walk-throughs with a full immersive navigation into the store to eventually study the dwell-time of the



different areas and the resulting behavior. This is a starboard for retailers and brand to optimize clear guidance for shoppers as they visit the store and get it done right with Virtual Reality first.

Shelf tests and assortment optimization study.

Brands are looking to balance products scope and depth to optimize their category assortment. Category assortment helps brands sustain shoppers' interest and retailers decides on which products need to be pressurized, substituted or definitely eliminated from the shelf to uplift the sales.



Figure 13: an example of a Virtual reality shelf simulation

Source: Image downloaded from <http://www.kantarretail.com/virtual-reality/>

Virtual Reality implication:

“unseen is unsold” is a widely used expression used in Market research when it comes down to studying categories assortment. VR can help researchers and clients understand shoppers' logic of orientation at a specific

shelf. To validate new shelf solutions at an early stage, shelves can be created in Virtual Reality. The latter gives the possibility to shoppers to interact freely with the shelf as what they would normally do, meaning seizing products off the shelf and visualize them close up by turning them around to read the ingredients and whatnot. Therefrom, the exercise would end with normal check outs of the purchase. The reinvention of the shelf is absolutely quick as it only requires 3D images/planograms of the products. As for the overall settings, Market research agencies and Virtual Reality suppliers have most of the common outlets already programmed to make the process faster and easier. The approach also gives a great possibility for clients to change the shelf assortment in real -time according the different scenarios they have set for the study.

What's more, the resulting data are reliable to guide clients to have a high visibility onto the shelf and a proper product placement since the approach takes into account the competitive landscape including competitors' product in the shelf along with their prices.

Product launch and product design test study.

Here again with the disruptive shopping behavior and quickly evolving shopper preferences, companies are trying to follow up the change with innovations and new concepts. However, they need confidence that their new ideas will fit shoppers' needs and confidence they can roll them out in the market quickly and affordably. Virtual Reality says STOP to sample runs and mock-ups to test a new product concept and STOP to costly and slow processes to execute the test phase in Controlled Market Tests or STMs.



Figure 14: An example of Virtual Reality pack evaluation

Source: Image from an internal Virtual Reality supplier

Virtual Reality Implication: Concept and product tests are often assessed using online surveys. The latter includes metrics inherent to the relevance and differentiation of the concept/product as compared to a brand funnel where each respondent tries to see the differences in specific needs fulfillment. The resulting reactions are based on a written format

and at most times, concepts are badly written which blocks concepts from seeing the light even if they bear a great potential. Most questions leverage respondents' recall which can generate unreliable data and offers limited learnings without behavioral response.

Virtual Reality can simulate a new product concept in the context of the store, where exactly it is intended to be merchandised. In this approach, 'real' shoppers asked to carry out a shopping mission in a virtual in-store simulation. This active environment will definitely solicit reactive behavioral response on what shoppers would do when faced with the new concept. The resulting data goes beyond the priced and unpriced purchased intention metrics, which are hard to translate into action. It includes behavioral, attitudinal and sales data, enabling a profound understanding of the How and Why of the purchase.

Same process goes for new packaging tests and POSM²⁸ optimization. About packs evaluations, instead of having them shown as simple images in surveys and ask respondents to click on the areas that they do like or dislike, in VR they can be shaped in an interactive 3D format to assess every single hot zone possible of the pack. This will result in deliverables that benchmark how well the new packaging performs in standing out versus its competition, how well the pack communicates the brand name and therefore depict the brand linkage that shoppers experience while interacting with the pack in the context of the store. Brands want to increase the visibility and findability of their products and want to make sure to choose the optimal POS material to maintain the shoppers.

Shopping decision Tree.

Shopping decision tree is used in U&A²⁹ studies of a specific product category. U&As are foundational studies that provide an understanding of a particular market. In fact, clients are more often interested into understanding the category segmentation based on actual shopping behavior,

²⁸ Point Of Sale Materials (POSM) are used to execute advertising campaigns and product promotion.

²⁹ Usage & Attitude (U&A)



capturing dynamics along the path to purchase and simulating out of stock situations to generate and measure product substitutability feedback.



Capture substitution behavior or walk-rate when a product is unavailable

Figure 15: Virtual Reality simulation of out of stock situation example

Source: Image from an internal Virtual Reality supplier

Shopper are asked to shop naturally for a product in a specific category. We will then capture their behavior as they're shopping. After having purchased one of the product, a pop up instruction will ask them to imagine that what they purchased earlier is no more available. Shoppers will either decide on a different product from the category or cancel the purchase if no other offer interests them, they will then leave the Virtual Reality store. The process can be complemented with questions to explain their behavior with attitudes captured in-the-moment after the purchase, for example, why they chose product X instead of the existing offerings.

In this section, we have delineated the different implications that Virtual Reality can have in various fields of shopper research studies leveraging behavior-driven data and replacing traditional in-store shopping metrics with real-world measures which can translate well in the real marketplace. This enables manufacturers and brands make sound decisions and plans for their marketing programs. So, how does Virtual Reality as a research tool transcend traditional research methods?

CHAPTER 6 – SO VIRTUAL REALITY HAS WHAT TRADITIONAL RESEARCH METHODS MISS

Virtual Reality is disrupting the data. it is now the research tool that can help manufacturers and retailers change the way they innovate and tackle strategic issues, keeping the shopper at the forefront of their decision making. How is that?

A CHANCE TO TEST EARLY AND OFTEN: VR ADVANTAGES

***IT IS FAST.***

Instead of store buildouts and products mockups that can take months to prototype, Virtual Reality creates an alternative of hyper realistic universe where new ideas and concepts can be iterated on the fly. 3-D stores or shelves simulations can be set up in a question of couple of days where 3-D planograms are simply imported in the software. This also gives managers the possibility to quickly edit the setting while on field. The latter is estimated to take no more than a few weeks (4 weeks at most). Shopper behavior can also be analyzed on-the-spot which saves a lot of time as compared to traditional methods where the marketing test execution average several phases that range from prototyping to collecting data which can sum up to months of research.

IT CUTS COSTS.

It is logical to think that VR saves money if it manages to save time. At the end of the day, time is money. Virtual Reality marketing testing reduces the costs of building out mockups and prototypes, sending out invites for surveys and monitoring the field or facilitating interviews and focus groups.

IT KEEPS NEW IDEAS OUT OF SIGHT

With Controlled Test Markets, new ideas and concepts are transparent to competition. Virtual reality keeps them under wraps. They can be tested in a virtual store which simulate real shopping situations. This results in valuable insights on their performance before they are taken to the marketplace. Privacy is a big theme in retail and Virtual Reality helps manufacturers ideate and iterate new concepts in a fully controlled research environment until they are at the ready.

IT LAYERS ATTITUDINAL DATA OVER BEHAVIORAL DATA

The emergence of Virtual Reality as a research tool ensues that traditional methods fall flat on several aspects. One of the key differentiator of VR to previous methods is the linkage between behaviors and attitudes. Integrating attitudinal data to the VR store experience helps researchers find out immediately the why behind the how of the shopping behavior the moment after the purchase. This gives predictive data that will change the way concepts and products are evaluated before going to market.

Another great addendum to behavioral and attitudinal data is the implicit measurement. Observing what draws shoppers' attention when facing a shelf or walking through the store says a lot more on their conscious and subconscious shopping behavior. Current research techniques do not discern both behaviors and at most times what shoppers state in surveys or say in interviews differ greatly from what they really do in-store. VR gives researchers the ability to observe both behaviors which is essential to understand properly shoppers and their behavior.



IT IS RISK-FREE

Virtual Reality palliates risk. Currently product concepts are launched based on metrics like priced and unpriced purchase intention which, at most times, fall flat and don't translate well in the real world. There is a high chance that managers get misled using traditional concept tests (e.g., the failure of clear colas, Diet burgers, etc., even though they scored well in the test). That's why they still question Virtual Reality store simulations on the accuracy to predict sales. However, to palliate the concern of VR as a predictive tool, results from a parallel study supported by the Marketing Science Institute revealed that sales in virtual stores correlate with sales in real stores.

Testing in VR puts the shopper at the front and center of the research. This enables managers decide on winning concepts in early stages of the Product Development, based on the shopper behavior. It minimizes the risk of rolling out a product which doesn't resonate with the shopper's need. It also helps optimize POS materials and hedge the risk of splurging money on promotions and advertising that will not maintain the shopper nor uplift sales.

IT REACHES A GLOBAL SAMPLE SIZE

Done using 3-D cloud-based simulations online, Virtual Reality helps researchers reach a global sample since participants can just login from home or work and shop in a simulated store environment. It helps eliminate location and geographic barriers which will in turn save time and costs. What's more using a diverse sample, Virtual Reality gives the possibility to generate accurate cross-country behavior patterns or across local areas and cities when the study is limited to a national level. This will assist manufacturers better market their offerings to their wide-spread target.

Virtual Reality research appears to have several expedencies that can get beyond the elements we delineated, which can transform into competitive advantages. If we attempt to complement the missing part of our figure 6 "Shopper Research: The shift", it will look like so.



SHOPPER RESEARCH METHODS: THE SHIFT



Figure 16: SHOPPER RESEARCH METHODS: The shift (2)

Source: Created to synthesize the previous discussion



PART 3

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VIRTUAL REALITY APPROACH IN ACTION – CASE STUDIES, TAKEAWAYS, WATCH-OUTS AND MORE



CHAPTER 8 – CASE STUDIES

In this section, we will plunge into three case studies that I got the chance to encounter during my internship at Ipsos, which used the Virtual Reality approach to test various shopper concepts. After which we will stop at some of the takeaways of in-store shopper intelligence.

I. VR APPROACH IN ACTION 1: POS DISPLAY TESTING

Objectives:

Manufacturer X is looking to accelerate their time to market (TTM)³⁰, reduce cost of innovation and drive growth based on their trade spend³¹ on a display fixture in-store. They were wondering how to convert shoppers at the point of sale.

The study aimed at identifying the impact of the POS display, which alternative has the best visibility and stand-out and which one has got the highest uplift.

Method used:

Three designs were tested monadically in a Virtual reality store simulation: simple (least expensive), medium and complex (most expensive).

Shoppers were given a mission to shop from the category and were exposed to one of the three displays. Behaviors and attitudes were captured on the spot.

Outputs/results:

Before the study went on field, the promotion team had the gut feeling that the complex design would have a higher impact and visibility as it has various design features (e.g., lighting, graphics and a lot of content). However, through the VR simulation, manufacturer X learned that the simple display would perform the best and the complex one would result in poor sales since it didn't draw shoppers' attention.

Using virtual Reality as a research tool in this case indicated that the most important aspect of display is the clear communication of the deal and the products offered in the deal. Simplicity is what shoppers are looking for.

³⁰ Time to market refers to the period it takes from the conception of a product until its availability for sale. Encyclopedia <http://www.encyclopedia.com/economics/encyclopedias-almanacs-transcripts-and-maps/speed-market>

³¹ Trade spend, also called trade promotion refers to the marketing techniques used to stir demands for goods in retail stores. Wikipedia [https://en.wikipedia.org/wiki/Trade_promotion_\(marketing\)](https://en.wikipedia.org/wiki/Trade_promotion_(marketing))



II. VR APPROACH IN ACTION 2: CONCEPT/PRODUCT TESTING

Objectives:

Manufacturer Y wanted to test the performance of the new packaging as compared to the competitors.

The key challenge was to identify if the new pack design resonates with the consumers' needs and if it impacts their purchase decision. Is it more visible compared to existing concepts as well as competitor products? Does it fit with brand's equity and communication strategy?

Method used:

Two different product categories were tested: Body lotion and shower gel. Using In-studio virtual Reality simulation of a pre-recorded 360 video of the store, product concepts were overlaid with existing and new products.

Eye tracking was integrated into each experience to build out a picture of dwell times and capture the subconscious behavior.

Outputs/results:

The real benefit appeared to be the fact that manufacturer Y could test different categories and multiple concepts of each category product in one realistic environment.

The eye tracking made the result more robust and gave a better understanding of how to optimize shelf positioning.

The VR setting gave the participants more flexibility and time to provide rich feedback on the different product concepts and ultimately which one they would choose from each category.

III. VR APPROACH IN ACTION 3: STORE LAYOUT TESTING

Objectives:

Retailer Z wanted to know which store layout would affect the category (juice drinks) and uplift the store brands sales.

The objective of the study was to develop different retail merchandising standards to use in-store, to identify the most effective sales method in promoting the clients' branded products and to understand how changes in the layout will affect the category and the own brands sales.

**Method used:**

Two different store environments were built out in Virtual Reality simulation: low value store and standard supermarket. Both virtual environments hosted the clients' different product concepts along with competitors.

Each participant completed several shopping trips in the virtual reality stores settings.

Outputs/results:

Some of the key results of the study were: the reinforcement of products' placement in the center of an aisle and at eye-level resulted from the frequent shopping behavior captured in the Virtual experience, and in a horizontal layout versus vertical in order to sell more than one item.

When it came to merchandising stands, most shoppers did not notice the 'novelties' or offerings on the packaging.

The important takeaway here is that the store needed to find the balance between "ease of shopping" and product variety to maintain the shoppers' attention.

From these three case studies, there is one important takeaway to consider when using Virtual Reality Research. The results drawn are usually not what clients expect or have predicted in a pre-stage. They used to invest time and money to come up with new in-store concepts and test it using controlled Test Markets or STMs. Therefore, the expectations on the performance of the new concepts are, most of the time, positive. However, Virtual Reality research is proving that it is not always the case. Sure thing, it might not come up with the results clients hoped for but it can certainly generate feedback that can tell clients what not to do, hedging the risk to roll out a concept that does not resonate with the shopper at all.

CHAPTER 9 – VIRTUAL REALITY RESEARCH METHODOLOGY: SOME ISSUES TO CONSIDER

As we unraveled the potential benefits of Virtual Reality in shopper research as a research tool, there are still some areas in the manipulation of the simulated store environments which need fine tuning and special attention in order to unleash the full potential of the technology to eventually produce tried and true behavioral data.



I. THE VIRTUAL REALITY STORE ENVIRONMENT IS NOT REAL BUT CLOSE TO REAL...

The challenge for market research agencies or Virtual Reality suppliers is to simulate precisely the store environment to make shoppers shop and behave just like the way they do in a real store. Some of the considerations include:

- The starting point of respondents' in the shopping mission. With a sample size that exceeds 300 respondents, various scenarios of the experience need to be thought through so that the results aren't biased based on where they start shopping. If we take an example of the soup aisle, we can have ready-to-heat soups are displayed at the first end of the aisle and condensed products at the other end. Because the starting point of the shopping can influence purchase decisions, shoppers who enter from the first end are more likely to buy ready to heat products and vice versa.
- The shoppable area of the store. Researchers need to logically think how much of a shopping trip needs to be simulated in VR to flawlessly address the objectives of the study. Therefore, they need to know how much of the store outlet need to be 'shoppable' for the given scenario and what categories, products and other marketing materials need to be subsumed.

II. THE IMPORTANCE OF THE SHOPPING MISSION: A MINIMUM CONTROL OF SHOPPERS' BEHAVIOR IS REQUIRED

The biggest challenge in Virtual Reality shopper research is to give a clear description of the shopping mission to virtual shoppers. They need guidance on why they are at the store, for which occasion, where they are and what category they need to shop from. Is the mission simply to shop for instant coffee? Is it to shop for soft drinks on the way home after work?

Researchers must describe the situation accurately to ensure that participants are fully and mentally focused on the task so that they behave accurately. Another consideration in the virtual shopping mission includes the shopping budget. When conducting virtual research, shoppers are not given any money to spend for fear of biasing their actual behavior. For example, if we give them an important amount of money and ask them to shop for coffee, they would purchase more packs while they typically buy 2 packs of coffee.

In short, a minimum control is required when conducting Virtual Reality Research. Giving clear directions to virtual shoppers, contextualizing their shopping mission and monitoring their behavior in a realistic shopping simulation can provide sharper shopper data that addresses accurately the business objectives.

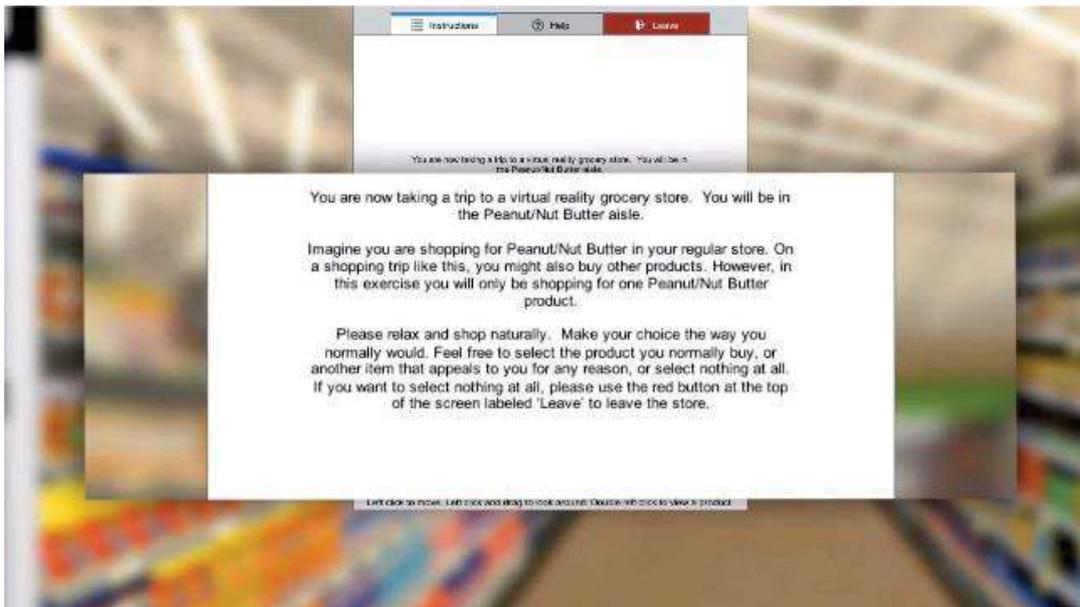


Figure 17: Shopping Mission example in a VR store simulation

Source: Image from an internal Virtual Reality supplier

CHAPTER 10 – NEXT STEP: IMMERSIVE REPORTING

Story telling has recently become a big theme in Market Research. Over time, PowerPoint presentations transformed into a mass production of charts, bars and pies shown in a hundred of slides with a lot of information to process.

Clients need a comprehensive story that will enable them to communicate clearly and accurately the results of the study to their stakeholders. In shopper studies, brands need to gain buy-in with retailers and sell well to the market, and retailers need a successful execution of the concept in-store. In the near future, reporting findings will be in the format of:

Virtual Reality movies

With the help of virtual reality videos, tested 3-D shopping experiences are brought to life. The final presentation will take the format of a movie that integrates research findings and virtual simulations with voiceovers, graphics, music and whatnot.

Full immersion Virtual Reality reports

Reporting with powerful and impactful walkthroughs, which bring tested in-store concepts in Virtual Reality store simulations to a VR headset, can deliver an unsurpassed in-store perspective of a new display, new shelf orientation and a new store design. Using immersion in reporting the findings of a study, the client will instantly understand and easily execute new shopping experiences.



CONCLUSION

Today's shopper is different from yesterday's and probably wouldn't relate to tomorrow's. Changes in shopper behavior is creating major challenges for retailers and manufacturers. In an era where shoppers are connected and ultra-knowledgeable, guiding them from advertising to purchase has become complex. They use different channels to get what they want, whenever they want. We might also think that they are shifting to e-commerce wherein they have more options than they never had before. However, that would be oversimplifying the situation and most likely it is not true. Consumers still want to purchase in-store even in the omnichannel context. Purchase decision making happens considerably in-store. This is where the First Moment Of Truth happens...I mean the Complex Moment Of truth where shoppers can fall through the cracks between online and offline shopping. They're looking to find in-store the experience that they find online. This is more true to the Fast-Moving Consumer Goods industry where consumers' needs are largely fragmented. And this is how brands and retailers understood that shoppers need to be put at the front and center of their marketing strategies in order to thrive and upsell them.

With the fast-changing demands and the ever-shifting shoppers' behavior in-store, brands and retailers are trying to figure out better ways to improve the in-store shopping experience. Shopper Marketing is the area of focus when it comes to dealing with shoppers. Even though it is a young substantive area, the 'new normal' of the shopping mode demands innovations and new strategic decisions. The latter need to be informed and grounded in a deep understanding of shoppers' behavior. New insights are then needed on what shoppers are experiencing in-the-moment, what drives them and how decisions are made. So, how does Market research curate to the change?

In a first part, we have delineated the shortcomings of traditional shopper research methods and others that are currently employed by clients to test shoppers' reactions and appreciations of new ideas in areas such as new products concepts, Point Of Sale materials and merchandizing. Ranging from controlled Market Tests to Simulated Test Markets, these research methods are revealed to be expensive, slow, vulnerable, contrived and unrealistic to not reckon with the changing retail environment.

Market research methodologies are now offered a new hope with the proliferation of technology. The answer was found in the technological advances in Virtual Reality that are opening up great opportunities for researchers to gain sharper insights with the Virtual Reality shopping simulations. Real shoppers are given a shopping mission to carry out in a 3-D simulated store environment, realistic



enough to observe and understand shoppers' behavior and attitude toward a given scenario in areas such as, new products, promotions, packaging, displays, signage and all the way up to new store design concepts. We agreed to say that VR's most important function in shopper research is its ability to provide the in-store context with the competition landscape integrated in the simulation, and this is mostly where traditional methods fall flat. Leveraging VR store simulations says 'stop' to sample runs and mockups to test a new product concept which revealed to be expensive to prototype and slow to process in the test phase. It also helps researchers understand the unvoiced strengths of the brands, map shoppers' path to purchase with the help of the sequence of behavior data, better visualize the shopper decision tree with the presumable possibility to layer attitudinal data over behavioral data and most importantly replacing current metrics that aim at testing the marketability of the new concepts like purchase intention with Virtual Reality sales.

Therefrom, we ensued the evidence that harnessing VR in shopper research results in gaining valuable feedback into shopper behavior. The why behind the how of the shopper decision journey in-store is finally unknotted. This will enable brands and retailers gain powerful insights, test their new concepts at an early stage way before they invest and move them from design to decision in a faster, smarter and more profitable way.

As a matter of fact, the adoption of VR in market research is still in its infancy stages. What market research agencies need to acknowledge in 2017, is that Virtual Reality is not a fad nor a 'stuff' of science fiction but a 'real' research tool. It turns out that wherever there are consumers, there are going to be innovations and the need of new insights.

VR technology continues to advance, improve at high-speed and broaden the future perspectives of Market research industry. Soon enough, there is going to be initiatives using Augmented Reality technology where computer generated data overlay physical environment in real time. This will enhance by far and large the shopping experience. What's more, efforts are now geared to the fusion of both technologies VR and AR to come down to a Hybrid Reality that blends the real world and the virtual world together. That is only to say that maybe a first step for Market research agencies is to be more adaptive and agile to the technological and environmental changes, so that when the next new thing hits...maybe tomorrow...they are better fit to make capital out of it.



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TABLE OF FIGURES

FIGURE 1: THE INTERRUPTED PATH TO PURCHASE	12
FIGURE 2: RETAIL MARKETING - THE BIG WAVES	19
FIGURE 3: SHOPPER MARKETING FRAMEWORK.....	21
FIGURE 4: A FRAMEWORK FOR ANALYZING INNOVATIONS IN SHOPPER MARKETING	22
FIGURE 5: SHOPPER INSIGHTS: KEY AREAS OF FOCUS	26
FIGURE 6. SHOPPER RESEARCH METHODS: THE SHIFT.....	30
FIGURE 7: THE VIEW MASTER TOY.....	33
FIGURE 8: VR HEADSETS SALES (WORLDWIDE)	34
FIGURE 9: IMAGE FROM CES 2016 THAT SHOWS ATTENDEES ENGAGED IN A VIRTUAL REALITY ROLLER COASTER EXPERIENCE.....	35
FIGURE 10: GARTNER HYPE CYCLE FOR EMERGING TECHNOLOGIES,2017	36
FIGURE 11: VR HEADSETS FUMCTIONALITIES	38
FIGURE 12: CAPTURE OF AN IMMERSIVE 3D STORE ENVIRONMENT SCENE	40
FIGURE 13: AN EXAMPLE OF A VIRTUAL REALITY SHELF SIMULATION	41
FIGURE 14: AN EXAMPLE OF VIRTUAL REALITY PACK EVALUATION	42
FIGURE 15: VIRTUAL REALITY SIMULATION OF OUT OF STOCK SITUATION EXAMPLE.....	43
FIGURE 16: SHOPPER RESEARCH METHODS: THE SHIFT (2).....	46
FIGURE 17: SHOPPING MISSION EXAMPLE IN A VR STORE SIMULATION	53



APPENDIX

Appendix 1: How Ipsos models Virtual Reality on its core values	68
Appendix 2: Virtual Reality various fields of application in market research.....	69
Appendix 3: Possible questionnaire flow using virtual reality shopping simulation	70



APPENDIX 1: HOW IPSOS MODELS VIRTUAL REALITY ON ITS CORE VALUES

SIMPLICITY
No **location** constraints
Money saving
No **dummy** production

SPEED
Real time research and insights
Large samples
Quicker results

SUBSTANCE
Different **scenarios**
Easy implementation of **new** products & pack designs

SECURITY
Controlled test environment

GAME CHANGERS



APPENDIX 2: VIRTUAL REALITY VARIOUS FIELDS OF APPLICATION IN MARKET RESEARCH





TABLE OF CONTENTS

ACKNOWLEDGMENTS.....	7
SUMMARY	8
TABLE OF CONTENTS	9
INTRODUCTION.....	11
PART 1: - THE COMPLEX MOMENT OF TRUTH: THE EVER-SHIFTING LANDSCAPE OF SHOPPER INSIGHTS.....	15
CHAPTER 1 – UNDERSTANDING SHOPPER BEHAVIOR: THE IN-STORE BATTLE	16
I. The chasm between online and offline retail: is this the death of brick-and-mortar stores?.....	16
II. What do academic researchers and practitioners alike have to say?.....	17
CHAPTER 2 – THE CALL FOR SHOPPER MARKETING	18
I. From category management to shopper marketing: the mark of 20-year-long history of retail marketing.	19
II. Shopper Marketing: the discipline, the approach.....	20
III. Shopper marketing execution: the state of art.....	22
CHAPTER 3 – THE NEED OF NEW SHOPPER INSIGHTS: HOW DOES SHOPPER RESEARCH CURATE?	24
I. Shopper Insight vs. Consumer Insight: The difference.	25
II. The current practice: where does it fall short?	26
III. Shopper Research to leverage technology advancements	30
PART 2 - VIRTUAL REALITY RESEARCH: CONVERTING BEHAVIOR INTO DATA	32
CHAPTER 4 – VIRTUAL REALITY IS NOT A FAD	33
I. Where to start: the definition of Virtual Reality.....	33
II. Virtual Reality is no more a hype	35
CHAPTER 5 –SHOPPER RESEARCH: THE VR APPROACH	37
I. Converting Behavior into Data (1/2) – What Virtual Reality formats do we have? ...	37
II. Converting Behavior into Data (2/2) – Virtual Reality fields of application.....	39
CHAPTER 6 – SO VIRTUAL REALITY HAS WHAT TRADITIONAL RESEARCH METHODS MISS	43
A chance to test early and often: VR advantages	43
PART 3 - VIRTUAL REALITY APPROACH IN ACTION – CASE STUDIES, TAKEAWAYS, WATCH-OUTS AND MORE	48
CHAPTER 8 – CASE STUDIES.....	49
I. VR approach in action 1: POS Display testing	49
II. VR approach in action 2: Concept/product testing	50
III. VR approach in action 3: Store Layout testing	50
CHAPTER 9 – VIRTUAL REALITY RESEARCH METHODOLOGY: SOME ISSUES TO CONSIDER.....	51
I. The Virtual Reality store environment is not real but close to real.....	52
II. The importance of the shopping mission: A minimum control of shoppers’ behavior is required... ..	52
CHAPTER 10 – NEXT STEP: IMMERSIVE REPORTING	53
CONCLUSION.....	54



REFERENCES.....	56
SITOGRAPHY	59
TABLE OF FIGURES.....	62
APPENDIX	63
APPENDIX 1: HOW IPSOS MODELS VIRTUAL REALITY ON ITS CORE VALUES	64
APPENDIX 2: VIRTUAL REALITY VARIOUS FIELDS OF APPLICATION IN MARKET RESEARCH	65
APPENDIX 3: POSSIBLE QUESTIONNAIRE FLOW USING VIRTUAL REALITY SHOPPING SIMULATION	66



SUMMARY

Today's shopper is different from yesterday's and probably wouldn't relate to tomorrow's. The way shoppers shop has changed with the proliferation of technology. More connected and knowledgeable, they gained the power over brands and retailers. This dynamic is sending shockwaves through companies who turn to Market Research to better understand their shoppers in order to upsell them and thrive.

The purpose of this paper is to contextualize the need of new Shopper Insights whilst the fast-changing demands and the ever-shifting shopper behavior with a mere given attention to in-store where a great deal of decision making is made, examine the state of art of current shopper research methods employed and delineate where they fall short to eventually instance how technological advances in Virtual Reality enable researchers garner faster, realistic and reliable feedback into shopper behavior.

Keywords: shopper behavior, Virtual Reality, Virtual Reality Market Research, Shopper Insights, technology advancements