

# Phygital Marketing Advantage

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Phygital consumer experiences provide marketers an opportunity to combine and leverage the benefits of in-person shopping with digital payment in ways that are already transforming the modern retail shopping environment.

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## 1. Introduction

The concept of “phygital” consumption experiences is relatively new, reflecting the novelty of the emerging digital technologies that empower them <sup>[1][2]</sup>. Phygital marketing involves crafting a consumer journey that integrates physical and digital experiences in a seamless way, creating experiences that are only possible due to the rise of emerging digital technologies <sup>[3]</sup>. For example, popular phygital approaches involve incorporating contactless payment systems, interactive touch screens, seamless digital payment systems, and augmented reality into the customer experience <sup>[4][5]</sup>. Ultimately, the use of such strategies has a wide application across industries (e.g., education, tourism, banking, etc.), but we focus exclusively on retail applications here.

There is significant excitement about the proliferation of phygital marketing in the future of retail commerce <sup>[6][7]</sup>. While research on the subject is still nascent, early work has found that phygital experiences can be designed to provide a novel and seamless experience that users enjoy, influencing customer perceptions of product value while generating trust and minimizing confusion <sup>[8]</sup>. In this paper, we review relevant findings from the literatures on retail consumer purchasing behavior, including work on the underlying psychology and neuroscience that helps to explain it, in order to better understand the role that technological innovations, including digital sensing technologies and the rise of augmented and virtual reality, can play in compensating for challenges that arise out of the digital purchasing environment. Presumably, these technologies hold potential to combine many appealing features of the “in person” purchasing experience with the ease of digital search and payment, an exciting and increasingly common combination that has recently been referred to as a “phygital revolution” <sup>[9]</sup>.

Implicit in the excitement about phygital marketing is that physical experiences provide unique value above and beyond what can be offered via digital means. However, the specific sources of this marketing potential remain undertheorized, and the factors determining the appropriateness of such strategies from the standpoint of their capacity to increase sales and net ROI remain unclear. In this paper, we review relevant theoretical models and research findings in consumer psychology and consumer neuroscience with direct application to these issues. Grounded by this literature, we develop a theoretical framework to help explain the potential power of phygital marketing experiences, accounting for their unique value. In doing so, our overarching goal is to equip academics and practitioners with a scientific and practically useful understanding of the dimensions contributing to the potential value of such approaches when integrated as part of a company’s retail marketing strategies. Based on the findings of our review, we develop an account isolating two elements of the consumer experience as particularly important factors contributing to phygital marketing’s power: the pre-purchase product experience and the payment experience. Specifically, we argue that these dimensions comprise a primary source of phygital marketing’s contribution to mental gain and loss calculations dictating retail consumers’ purchasing decisions. We conclude by outlining a more general set of criteria contributing to these calculations, based on the extensive review of relevant literatures, and pose further questions for direct empirical testing and research.

## 2. Phygital Ideal Types

The general category of phygital product experiences includes a potentially vast range of permutations. In this paper, we confine our analysis to a pair of “ideal types” representing a large proportion of possible cases.

The first of these involves use of digital sensing technology to automate in-person processes that are often a primary source of consumer dissatisfaction. We refer to such cases in the rest of the paper as *automated sensing technologies*

(“ASTs”). This set of innovations is exemplified in Amazon Go stores, where payment for goods is immediately extracted from the customer’s digital wallet once they leave the store, without need for traditional cashiers or even “self-checkout”. Digital sensing technologies and artificial intelligence combine to track the items removed from shelves by individual customers who are billed to their accounts without any need for additional action on their part. Similarly, some commentators envision a future in which trying on clothes in person is a more seamless experience, with consumers entering a changing room and having access to digital technologies that will allow them to select types, styles, and sizes of clothing and have them directly delivered to try on. In these cases, digital technologies are imported into the in-person experience, helping to alleviate some of the most frustrating elements of that environment.

Amazon alone intends to open up to 3,000 Amazon Go stores within the next several years <sup>[10]</sup>. However, they will soon have competition: Alibaba, JD.com, and 7-Eleven are among the hundreds of retailers who already have or intend to deploy similar stores over a similar time frame <sup>[11]</sup>. Alongside Amazon and its contractors, there are currently over 150 companies focused in different technological areas working on automated, cashierless, brick and mortar retail <sup>[11]</sup>. Over the long term, these systems offer opportunities to reduce overhead costs, improve the efficiency of inventory management, gather shopper data, and improve customer satisfaction due to reduced wait times. Furthermore, consumers who try the experience overwhelmingly report enjoying it: of the 28 percent of respondents to a nationwide survey who said they had gone to an Amazon Go, fully 89 percent reported enjoying the experience, while more than half of all respondents said they would like to see a similarly tech-enabled store near them <sup>[10]</sup>.

However, digital sensing technologies can facilitate a more efficient in-store experience in other ways as well. For example, in the wake of COVID-19, makeup retailers Sephora and Ulta have decided to prohibit customers from physically testing products on their skin. Though the logic of the decision is primarily dictated by safety concerns, the introduction of in-store AR alternatives by both brands has not only addressed those concerns but helped open up a wider array of alternatives to consumers who no longer need to apply and remove makeup in order to see how it will look, but instead can use in-store kiosks to trial millions of shades and brands. For example, Ulta’s tool—called “GLAMlab”—has seen a seven-fold increase in engagement rates since the advent of the pandemic and now boasts more than 50 million shades of foundation for consumers to try before they buy <sup>[12]</sup>.

A second, no less impactful set of phygital innovations relate to the use of augmented and virtual reality technologies to “import” digital artifacts into the physical world for consumers to interact with and evaluate in person before purchasing. We refer to these as *simulated in-person experiences* (“SIPs”). In such cases, consumers can have a simulated experience of goods in the comfort of their homes without giving up the ease of digital searching and payment. Rather than try on clothes in person, for example, customers can see what they look like in 3d and even “try them on” using AR and VR technologies. These technologies may be put to similar use with other kinds of products, including housewares or appliances, which may be visualized within the home environment, or technology products themselves, which users will be able to handle and “use” before they are even released to the public.

Consumers have demonstrated considerable openness to using AR/VR technologies to enhance their shopping experiences both online and in person. In a recent Neilson global poll, global consumers listed AR/VR as “the top technology they’re seeking to assist, amplify, and augment their daily lives” <sup>[13]</sup>. In fact, in the same poll, 51 percent of respondents specifically indicated they are willing to use such technologies to assess products prior to purchasing. Furthermore, these technologies have proven to be effective sales tools: the e-commerce company Shopify reports that interactions with products through AR technology resulted in 94 percent higher conversion rates than in those using conventional imagery and video to market products <sup>[12]</sup>. In another study, marketing campaigns using AR were found to have an average dwell time of 75 s (traditional radio and TV ads have dwell times of just 2.5 s), and 71% of shoppers claim they would shop at a retailer more often if they were offered AR. The retail industry’s spending on AR and VR is expected to increase at a compound annual growth rate of 238.7%. As a result, it will become the sector spending most on AR and VR by the early 2020s <sup>[14]</sup>.

## **3. The Psychology and Neuroscience of Purchasing Behavior**

### **3.1. Product Experiences**

The first of the two major dimensions involved in the consumer purchasing experience relates to the product experience preceding such decisions. There are two main dimensions to such evaluations: the appeal of the product itself for any given consumer and the sense of attachment to the product, generated by having interacted with it in anticipation of purchase. The former can certainly be affected by how the product is presented for consideration to consumers: the appeal of a product itself will depend on how well its features are showcased through its mode of presentation <sup>[15][16]</sup>.

However, our primary focus here is not on the effective illustration of product attributes, but on how consumers' physical as opposed to digital interactions with a product will tend to promote a more powerful sense of connection or ownership over it that can affect their likelihood of purchasing it.

### 3.2. Payment Experience

A second primary dimension contributing to the power of deploying phygital strategies to influence the consumer's product purchasing experience is the payment process. Whereas interaction with products and anticipation of ownership are generally pleasurable experiences, paying for goods is generally associated with psychological pain and discomfort. This is captured in brain-based studies, which indicate that the contemplation and exercise of payment for consumer products activates the insula, a part of the brain connected with anticipation of physical pain and negative arousal more generally [17][18]. Naturally, the degree of pain scales with cost, with large purchases tending to generate greater pain than smaller ones. As pain of payment increases, the likelihood that a purchase will be completed tends to diminish [17].

### 3.3. The Phygital Advantage

By combining the visceral connection with consumer goods experienced through in-person interaction with the reduced pain of payment facilitated by digitization, phygital marketing creates an environment that will often increase the probability of purchase for consumer products.

## 4. Additional Dimensions of Phygital Impact: A General Framework

As we have seen, the decision-calculus undertaken by such customers involves consequentialist calculation of the anticipated "gains and pains" of buying goods. While our attention has so far been focused on the relationship between consumer product attachment and the general phenomenon of "pain of paying", we survey work on several additional considerations that enter into that broader process here. Taken together, these considerations culminate in a more general theoretical framework grounded on a review of primary and secondary research findings from consumer psychology and consumer neuroscience to explain the potential power of phygital marketing experiences, account for their unique value, and provide a platform for future research. The elements of this framework are illustrated in **Figure 1**.

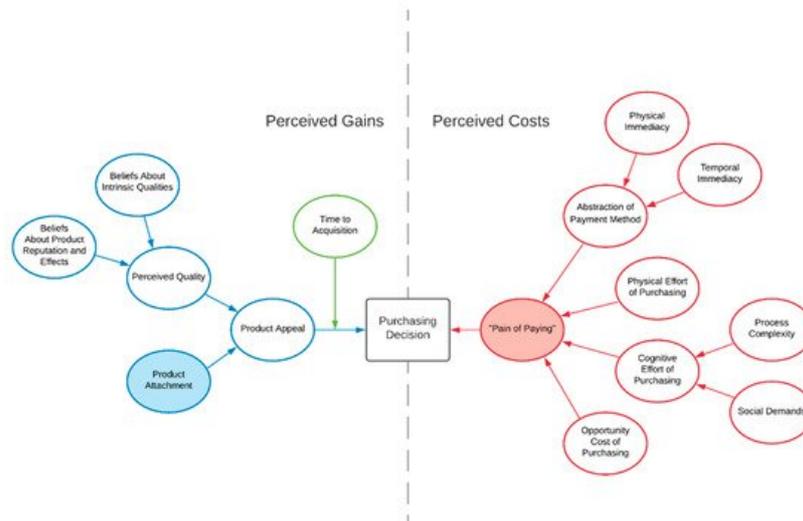


Figure 1. Gain/Loss Calculation Factors.

### 4.1. Anticipated Costs ("Pain of Paying")

We begin with a more fine-grained analysis of the elements contributing to consumer calculations regarding the anticipated costs of buying goods and of phygital's potential impact on them, when applicable. As we have seen, these costs are described in terms of the "pain of paying" within dominant psychology and neuroscience literatures on consumer behavior. Existing research suggests that four main elements (captured on the right hand side of **Figure 1**) contribute to such calculations, each of which may be comprised of multiple dimensions: abstraction of payment method, physical effort of purchasing, cognitive effort of purchasing, and opportunity cost of purchasing. A description of each dimension along with lists of potential measurement variables, key questions, and relevant resources are provided in **Table 1**.

Table 1. Anticipated Costs ("Pain of Paying").

Dimension	Description	Measurement Variables	Key Questions	Related Research
Abstraction of payment method	Does the purchase take place through a direct exchange of currency for goods, or are there vehicles for indirect transacting involved?	Physical immediacy (e.g., cash vs. debit payment)	How does the physical means of transacting affect purchase likelihood and associated brain function?	[19][20][21]
		Temporal immediacy (e.g., immediate cash/debit vs. credit/financing payment; paying in advance vs. paying upon receipt of good or service)	How does the temporal separation of purchase and payment (i.e., the degree of “coupling”) during the process of transaction affect purchase likelihood and associated brain function?	[22][23][24][21] [25][26][27][28] [29][30][31][32] [33]
Opportunity cost of purchasing	The amount of time it takes to complete a purchase (e.g., do customers have to wait in a real or virtual line?)	Average time to completion of purchase	How does the real or anticipated amount of time it will take to complete an initial purchase affect purchase likelihood and associated brain function?	[34][32][35][36] [37][38]
Physical effort of purchasing	The degree of physical “strain” required to complete the purchase (e.g., does it take physical exertion to search for products or present them for purchase?)	Time spent engaging in physical vs. virtual product search, extent of physical labor involved in act of purchasing	How does the real or anticipated amount of physical effort it will take to complete a purchase affect purchase likelihood and associated brain function?	[33][39][35][40]
Cognitive effort of purchasing	The degree of cognitive “strain” required to complete the purchase	Process complexity	How does the complication and complexity of the purchasing process affect purchase likelihood and associated brain function?	[6][41][32]
		Social demands	How does the amount of social interaction involved in the purchasing process affect purchase likelihood and associated brain function?	[6][42][43][44]

## 4.2. Anticipated Gains

At least three dimensions (captured on the left hand side of **Figure 1**) may predict the anticipation of gains among retail consumers at the point of purchase. Two of the three—perceived quality and product attachment—fall into the broad category of “product appeal”, while a third, time to acquisition, will often mediate product appeal through mechanisms like time discounting. A description of each dimension along with lists of potential measurement variables, key questions, and relevant resources are provided in **Table 2**.

**Table 2.** Anticipated Gains.

Dimension	Description	Measurement Variables	Key Questions	Related Research
Product appeal (perceived quality)	Consumer beliefs about a product’s level of quality	Consumer beliefs about a product’s intrinsic qualities (e.g., “intrinsic quality” dimensions might include perceived attractiveness, durability, functionality, etc.)	When, for whom, for what types of products, and to what extent do consumer beliefs about a product’s “intrinsic qualities” affect purchase likelihood?	[45][46][47] [48][49][50] [51]
		Consumer beliefs about product reputation and associated effects (e.g., what do others think about the product and what will owning the product lead others to think about me?)	When, for whom, for what types of products, and to what extent do consumer beliefs about product and/or brand reputation affect purchase likelihood?	[49][50][51]

Dimension	Description	Measurement Variables	Key Questions	Related Research
Product appeal (product attachment)	The extent to which a given means of showcasing the product provides consumers with experiences that generate product attachment or a sense of "psychological ownership"	Consumer attachment levels as evidenced by, e.g., self-report, willingness to exchange for a product of equal perceived quality, increased valuation relative to pre-exposure levels	For a given level of perceived product quality, how (if at all) do different types of pre-purchase "exposure" to the product (e.g., image vs. video vs. AR/VR interaction vs. first-person use) affect product attachment and purchase likelihood? How are these effects mediated by product and customer type and/or time to acquisition?	[17][52][32] [53][54][55]
Time to acquisition	The length of time a customer must wait between completing the transaction and receiving the good or service	Consumer beliefs about time to product acquisition after completion of initial transaction	How does the anticipated time to product acquisition affect purchase likelihood? How are these effects mediated by product and customer type?	[56][57][58]

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