Vigilant marketing: Catching fleeting opportunities for growth spurts

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Abstract Marketing executives are constantly seeking opportunities to grow their brands, but find the task more challenging as their brands become bigger and the market more mature. In fact, brand sales in established markets tend not to grow gradually, but rather in spurts, ie short periods of growth alternating with longer periods of stability. These growth spurts come with either foreseeable events that businesses usually plan for, or unforeseeable opportunities that often relate to external events such as positive product reviews or celebrity sightings, which make a brand temporarily more attractive to its customers. For businesses to catch these unforeseeable, fleeting opportunities, this paper advocates a vigilant marketing practice, and discusses persistence analysis, a time-series method for it. To be vigilant, businesses need to be managerially prepared with opportunistic spending and analytically equipped with market intelligence tools. Using the aforementioned time-series method, this paper illustrates the unforeseeable opportunities for creating growth spurts and the need for vigilant marketing on several brands in the digital single-lens reflex (DSLR) camera market.

KEYWORDS: vigilant marketing, growth spurt, persistence analysis, opportunistic spending

INTRODUCTION

Business executives are under constant pressure to grow their brands, be it to satisfy the returns expected by their shareholders, to compensate and motivate their key employees or to keep their competitors at bay. Insofar as they rely on organic growth, much of the growth burden falls on marketing, broadly defined here as the set of business activities to acquire, retain, cross-sell and up-sell customers. Despite all efforts to spend marketing dollars wisely, brand managers often find the effectiveness of their marketing decreasing over time as the brand/firm grows in size and the market becomes mature, sometimes to a point that additional marketing spending ceases to generate profitable growth. The causes are mainly the diminishing returns to marketing and the market stability of mature markets.

The challenge of diminishing returns to marketing

Analytically speaking, a key challenge to creating profitable business growth through marketing is that marketing investments are subject to the laws of diminishing returns to scale. Thus it is relatively easier to increase brand awareness by 5 percentage points, for example through aggressive advertising, if the brand's beginning awareness level is 20 per cent than when it is already at 90 per cent. As a result, as the firm or the brand grows in size, it becomes progressively more expensive to achieve the same growth objectives through marketing.

The challenge of market stability

The small annual growth of a mature market offers limited room for individual brands to extend, and defines brand's competition as a zero-sum game — one brand's gain is another's loss. As a result, competitors guard their market share tightly, and often react fiercely to any competitor's move. Established brands often develop sufficient market knowledge and intelligence on the market and their competitors so that no market secret or advantage can be kept long. Likewise, competitors often move in concert to market opportunities. As a result, mature markets typically exhibit a relatively stable competitive structure with occasional shifts.

The importance of timing

Correspondingly, brand sales in established markets tend not to grow gradually, but rather in spurts, ie short periods of growth alternating with longer periods of stability. As such, the timing of marketing actions becomes crucial to marketing managers, ie investing in marketing spending when critical opportunities arise, either to grow the brand or to restore it to previous highs.

As an example, during the airing of the 2013 Super Bowl, a totally unexpected electrical blackout interrupted the game, much to the consternation of millions of viewers (the blackout lasted 34 minutes). During this time, one brand, Nabisco's Oreo, immediately seized the opportunity to launch an internet advertising campaign with the theme: 'You can still dunk in the dark'. The campaign generated a large following and was praised for its originality and timeliness.

Unexpected events of all kinds may present fleeting marketing opportunities. After a sudden snow storm, the quality of the skiing experience at a winter resort may be significantly enhanced, allowing any advertising for the ski resort to enhance its impact. Similarly, if a celebrity such as Michelle Obama or Princess Kate opts for a dress of an affordable or little known brand, this will create a sudden marketing opportunity for that brand.

Many opportunities are less apparent and require careful marketing analytics to reveal them. Today's markets are characterised by multiple supply and demand forces, empowered consumers, quick communication media and significantly higher volumes of data. As a result, opportunities can be buried in a myriad of information sources, and are subtle for marketing managers to interpret. For example, a raving professional review for a newly launched movie or for the next generation of a high-technology product may significantly increase their appeal to the buying public; similarly, a viral social media message or a new product, eg Pokémon Go, can infuse customer tastes and preferences. Such developments are even more valuable because they are difficult or impossible for competitors to react to. Indeed, the best opportunities often (1) enable not only significant, but also sustainable growth, and (2) cause no or little reaction by competitors.

Brands/firms can prepare themselves well in planning and carrying out marketing activities for events on their radar, such as the seasonally high demand for toys before Christmas. At the same time, they fall short in identifying, recognising and responding to unpredictable opportunities that are gaining frequency and value as the internet of things (IoT) becomes integrated in many markets. Indeed, most marketing managers are constrained by their pre-existing budgets and allocation plans. These often stand in the way of quick reaction to unforeseeable opportunities, a business practice that this paper will call 'vigilant marketing'. Vigilant marketing is a new marketing management philosophy and practice, fitting to today's rapidly changing environments. It requires businesses to change their traditional marketing budgeting and planning practice, allowing for opportunistic spending and decision automation at lower levels of the marketing hierarchy, in order to respond nimbly to market opportunities to grow the brand. Indeed, today's advanced data techniques and marketing analytics can help businesses identify such opportunities, which one would expect to be different for different sectors.

This paper explains vigilant marketing and discusses the analytics that brands can use to identify external marketing opportunities. The key approach is to examine the brand's base demand evolution, ie the level of sales in the absence of marketing stimuli, and to identify when and under what conditions the brand gains momentum. Compared with assessing marketing lift (ie effectiveness of marketing spending), which has been the central attention of marketing analytics to date, a brand's base demand is less straightforward and requires proper analytics to understand. When the brand gains momentum, it presents a unique opportunity to generate *sustainable* growth. This means that marketing in these opportunity windows can be highly profitable — much more so than the same marketing executed outside these time windows. This study will apply these analytics on several brands in the digital single-lens reflex (DSLR) camera market in the USA. It will illustrate the nature of fleeting market opportunities for different camera brands and the consequences of either acting or failing to act on these opportunities.

VIGILANT MARKETING

Vigilant marketing refers to the practice of continuously scanning the brand's external environment in order to act quickly when business opportunities occur. It does not replace traditional marketing planning and execution, but rather complements it, and thus requires downstream budget and authority to act on such opportunities.

There are three distinct competencies that are required for successful vigilant marketing. First, and foremost, the brand needs *sensing capability*, ie environmental scanning, to identify market changes in a timely manner. In the digital environment of the 21st century, such scanning can increasingly be performed by information technology. For example, employing sentiment analysis, web analytics and other business intelligence tools, firms can closely monitor the competitive environments to detect underlying market changes and upcoming trends. Statistical techniques for outlier detection can be implemented on daily sales data collected at hundreds of stores or websites to identify unusual business conditions that invite management attention.

Secondly, the brand needs *diagnostic capability* to evaluate the significance of a change in the brand's environment for its performance, and thus identify threats and opportunities. The wide range of market indicators brands may collect through environmental scanning are not of equal importance. Brands in different market categories or segments, and with different characteristics, respond to different market indicators, eg some are more sensitive to product reviews, others more to web traffic. Brand managers need to evaluate the implications of market changes and select the most important ones to focus on. For example, a brand may need to infer that (1) store sales are positively related to recently published product reviews, and (2) a highly positive product review was published in a medium close to a store that witnessed a sharp sales increase.

Finally, *decision and budget authority* must be available in order to take advantage of business opportunities. Management must allocate marketing resources that can be executed quickly and, in some cases, exceed previously allocated brand budgets. The Oreo example described earlier is a good example: someone at Nabisco sensed an opportunity to draw attention to Oreo at a time when millions of prospects and customers were known to be idle in front of one medium, with no ability to plan forward. To allow for instant execution, both budget and authority to execute had to be available immediately. It took a culture and management approach of marketing vigilance within the company to enable the quick action. As the facts suggest, no other organisation was able to do this.

To achieve the best results, brands need to balance traditional marketing and vigilant marketing. Indeed, in one extreme, if the brand's business environment is always stable with no opportunities for growth spurts, no budget should be allocated to vigilant marketing. Conversely, brands whose sales results are mainly driven by momentum-generating events need a high proportion of their marketing budgets to be allocated to vigilant marketing. Table 1 summarises

Table 1: A comparison of traditional and vigilant marketing

	Current/traditional marketing	**Vigilant marketing**
Goal	Compatible with/supporting strategic goal	Flexible
Nature of opportunities	Predictable events	Unpredictable events
Purpose	Maximise value of an event	Quick action; grab the opportunity
Spending	Budget setting	Opportunistic spending
Data focus	Historical (medium or long-interval) data used to predict the future	Ongoing and short-interval data used to generate immediate market intelligence
Initiation	Planned, proactive	Data/event-driven, reactive
Process	Integrated, focused	Decentralised
Implementation	Hierarchical, central management	Responsible units, dispersed
Assessment	Plan completion; plan effectiveness	Nature of opportunity; response actions

the key differences between traditional and vigilant marketing.

ANALYTICS TO IDENTIFY OPPORTUNITIES

Various analytical methods and tools are available for brands to enhance their diagnostic capability. For the purpose of seeking market opportunities to maximise growth potential, these methods examine the relationship between a market indicator and a brand's sales performance. There are two aspects of sales performance: base demand and marketing lift. Marketing lift is marketing effectiveness, eg sales lift attributable to adverting. Base demand is sales without advertising support. Both marketing lift and base demand can fluctuate over time, for both endogenous and exogenous reasons.

Marketing lift

The evaluation of marketing lift focuses on its impact with various targets, media, message contents and spending scales. Several metrics, response models and estimation methods have been developed for this purpose. One popular impact metric is elasticity, for example the percentage increase in sales attributable to a percentage increase in advertising spending. To raise marketing impact, brands follow their targets tightly and create appealing messages. As an example, if the target audience for a certain marketing message shifts from print media (magazines, newspapers) to digital media (websites, apps), then it makes sense for an advertiser to follow that trend and allocate relatively more funds to the digital media. Many examples exist of brands that have achieved higher profitability through reallocating their marketing toward the channels or media with greater impact.

Base demand

By contrast, relatively little analytical work has focused on base demand for a product or service. Base demand may fluctuate considerably over time and across markets, and herein lies an opportunity for vigilant companies, especially those in fast-moving business environments. Base demand is characterised by its level (high/low) and momentum (whether a change can be sustained over time). If base demand is stable over time, it may not matter much *when* to advertise. On the other hand, if base demand evolves, for example it is trending upward or has a cyclical pattern, then — all else being equal — it pays to advertise in periods of high base demand, and vice versa. Table 2 illustrates the difference using a simple numerical example based on a typical advertising elasticity of 0.1, unit price of US$8 and 50 per cent gross profit margin. Profit in the table refers to contribution to overhead (ie sales revenue × gross margin – advertising spend).

Different from marketing lift, which managers sometimes sense intuitively or can gauge relatively easily by tracking immediate sales performance, base demand performance is unobserved and complex, and thus depends on proper marketing analytics. Persistence modelling, which is addressed in the following sections, is a unique method for base demand analysis.

General budgeting rules

Marketing analytics readily demonstrate that both marketing lift and base demand

Table 2: A numerical example

Base demand (units)	Optimal advertising spend ($)	Revenue ($)	Profit ($)
60,000	73,604	1,472,080	662,436
100,000	129,837	2,596,749	1,168,537

momentum affect the optimum marketing spending. Indeed, all else being equal, and following the logic of the above illustration:

- the higher the marketing top-line impact or effectiveness, the more can be spent on marketing profitably; and
- the higher the base demand momentum, the more can be spent profitably.

Companies should allocate their advertising dollars according to these rules, whether intuitively or driven by formal analytics.

Analytics of persistence modelling

Persistence modelling — a unique method for brands to enhance their diagnostic capability — offers base demand analysis to assess whether or not base demand exhibits momentum. Generally speaking, base demand does not exhibit momentum, ie as commonly seen in the marketplace, sudden changes to sales or market share are usually short-lived. Without continuous additional marketing efforts, sales performance quickly returns to its usual level. For example, in the four to five weeks after a sales promotion campaign, the resulting surge in sales dissipates and the brand returns to the sales level observed before the campaign started. With momentum, however, changes to sales are 'absorbed' into base demand and create a momentary trend toward that direction. For example, the superb skiing experience in a winter resort right after a snow storm creates a boost in customer satisfaction which leads to higher levels of customer repeat buying (ie returning to the same resort). This provides an excellent opportunity for marketing because a short-lived, limited marketing effort can generate long-lasting effects.

Analytically, base demands with and without momentum are called sales evolution and stationarity, respectively, and their distinction is studied in marketing persistence analysis[1] using time-series techniques.

A common technique, popular in economics study, is unit-root testing, which determines whether a time series variable is non-stationary. In its simplest form, the following regression of a variable X can be examined against its own past:

$$X_t = \phi X_{t-1} + \mu + e_t, \qquad (1)$$

where μ is a constant and e_t is a random shock. When the response parameter $\phi < 1$, the impact of past shocks diminishes and eventually becomes negligible. Hence, each shock has only a temporary impact. The series has a fixed mean $\mu/(1-\phi)$ and a finite variance $\sigma^2_e/(1-\phi^2)$. Such a series is described as stable or stationary. When $\phi = 1$, however, the series no longer has a fixed mean. Instead, each random shock has a *permanent* effect on the subsequent values of X. The variable does not revert to a historical level, but instead wanders freely in one direction or another, ie it *evolves*.

A unit-root test, for example on sales performance, reveals that it is either stable or evolving, but it does not identify the *cause* of any evolution. For example, is the evolution due to external market changes, or due to more aggressive brand marketing? This is of particular importance to marketing managers, as they need to understand sales performance in a more comprehensive responsive equation, for example:

$$S_t = c + \alpha S_{t-1} + \beta M_t + e_t, \qquad (2)$$

where S_t is sales at a given time t and M_t represents marketing expenses at time t. The model assumes that sales decay over time at a decay rate $(1-\alpha)$, c is a constant, β is the effectiveness of M_t, and e_t represents market noise. Base demand momentum is characterised by $\alpha = 1$, known as intrinsic evolution (as opposed to marketing-induced evolution) in persistence analysis. Intrinsic evolution represents major marketing opportunity where temporary marketing can generate persistent effects. To identify intrinsic evolution, Wang and Zhang[2] present a framework that turns univariate unit-root testing into a multivariate test involving marketing spending and possibly other drivers of demand.

Marketing persistence analysis thus offers useful concepts and analytics to understand base demand performance, and can be incorporated into a brand's periodic (weekly, daily) market evaluation.

A CASE STUDY IN THE DIGITAL CAMERA MARKET

This study now uses the previously discussed base demand analytics on several brands in the digital single-lens reflex (DSLR) camera market. The analytics make it possible to reveal the fleeting, unrecognised opportunities in the market that call for vigilant marketing practice.

The DSLR camera market is a category with frequent product innovations and intensive consumer search, due to the high price point and technological sophistication of the products. This study considers weekly sales and the marketing mix of the six leading brands in the USA, between 2010 and 2012. Brand sales and price data were purchased from NPD, which tracks the point-of-sales data of major retailers. Advertising data were purchased from AC Nielsen, which tracks national advertising expenditures in the cameras category across all media types. The data cover six major DSLR brands with 95 models, representing an average of 98 per cent of the DSLR market. In addition, the study uses the quantity and valence of product reviews in this category from Amazon.com. Product review quantity and valence fluctuate considerably over time, which implies that the business environment for these brands is in a continuous state of flux.

Methodology

An important methodological consideration is the choice of a relevant time period. In each time period, management may aspire for future growth, but such growth is by no means guaranteed. Thus, identifying windows of opportunity is a *forward*-looking task which calls for a *moving-time window approach*, where the assessment is made at time T, using only information available up to time T. By moving the assessment period forward, one obtains a series of assessments that are managerially relevant, similar to the identification of marketing regime shifts seen elsewhere.[3] Thirty periods are selected as the base window length and robustness tests are conducted with longer and shorter lengths. Naturally, the shorter the window length, the more opportunistic windows will be identified; however, the statistical reliability will be lower.

Equally important is to control for events that may create opportunity windows that are readily *predictable*, at least for brand decision makers. One such time factor is *seasonality*, which increases baseline DSLR demand significantly in the last five weeks of the calendar year (coded with a value 1 in the tests, 0 otherwise). The other is *new product introductions*, which coincide with planned launch programmes that are also known in advance to management. Following the recommendations of category experts, new-product introductions are identified (NP = 1, 0 otherwise) during the first eight weeks of distribution for low-end models (priced under US$1,000), and the first 16 weeks for expensive models. Finally, *competitive activity* could dampen the positive brand effects of vigilant marketing, so must be included in the response models. By controlling for these factors, the tests identify the opportunistic, as opposed to anticipated, time windows that are the focus of the research.

The following three tests are conducted in moving windows:

1. Unit root tests on unit sales: do sales evolve?

   $$Sales_t = c + \alpha Sales_{t-1} + \varepsilon_t$$

2. Wang-Zhang tests controlling for advertising, price, competitive advertising, new-product releases and seasonality: do

these variables explain the presence of evolution in sales?

$$
\begin{aligned}
Sales_t = C + \alpha Sales_{t-1} \\
&+ \beta_{adv} In(Adv_t) \\
&+ \beta_{price} In(Price_t) \\
&+ \beta_{cp} In(CompetitiveAdv_t) \\
&+ \beta_{NP} NP_t + \beta_{season} Seasonality_t + \varepsilon_t
\end{aligned}
$$

Log transformations of advertising, price and competitive advertising are taken in order to represent their nonlinear effects. The results of this test will reveal the intrinsic evolving time windows, which are unanticipated opportunities for brand marketing.

3. Wang-Zhang tests controlling for the variables in test (2) plus the quantity and valence of customer reviews ($ReviewActivity_t$ and $ReviewValence_t$): is product review an important driver for intrinsic evolving time windows?

$$
\begin{aligned}
Sales_t = C + \alpha Sales_{t-1} \\
&+ \beta_{adv} In(Adv_t) \\
&+ \beta_{price} In(Price_t) \\
&+ \beta_{cp} In(CompetitiveAdv_t) \\
&+ \beta_{NP} NP_t + \beta_{season} Seasonality_t \\
&+ \gamma_{activity} ReviewActivity_t \\
&+ \gamma_{valence} ReviewValence + \varepsilon_t
\end{aligned}
$$

A comparison of the test results in tests (2) and (3) will reveal the intrinsic evolving time windows that are created by review buzz. For example, an opportunity window identified in (2) is associated with review buzz if it is no longer an opportunity window after controlling for review activity and valence in (3) and vice versa.

Empirical evidence

The details on the estimation results and their implications may be found in Hanssens, Wang and Zhang.[4] Overall, they may be summarised as follows:

- As expected in this well-established product category, the predominant time-series pattern of sales is stability. Thus most of the time, various marketing and competitive activities create only temporary sales lifts for the brands that engage in them.
- Nevertheless, there are frequent incidences of temporary regimes of sales evolution. Most of these (86 per cent) are induced by marketing efforts, but some (14 per cent) are not. Smaller brands in particular benefit from windows of opportunity that are not related to marketing spending. Specifically, over the 76 weeks in the sample, Panasonic enjoyed 12 such opportunistic weeks and Sony had nine weeks. By contrast, the dominant brands Canon and Nikon had two and seven weeks, respectively.
- Importantly, favourable intrinsic evolving regimes can be created by movements in customer reviews. Among these movements, review valence is the most important factor, causing 67 per cent of the intrinsic evolving cases. Sales evolution can also be generated either by review valence or quantity (22 per cent), but rarely by review quantity alone (11 per cent). The Pentax and Sony brands, in particular, benefit from such review-generated windows of opportunity.
- Despite these business growth opportunities, most brands do not take advantage of them, ie when their products receive favourable reviews they do not increase their advertising spending. Conversely, most of the observed spikes in advertising spending do not correspond to opportunity windows.

These findings suggest most fleeting growth opportunities are left untouched, which is a form of suboptimal marketing behaviour. There are two possible reasons for this: one is a lack of awareness of the growth opportunity windows, offered by movements in product reviews or other factors, suggesting brands' weak sensing and/or diagnostic capabilities; and two, even with such awareness, the advertising budget setting and media-buying process may cause inertia in spending behaviour, suggesting inflexible and slow decision and budget authority. Indeed, brands with traditional marketing management of preset budgeting rules and central authority cannot respond well to unanticipated market opportunities.

CONCLUSIONS

The best marketing is marketing at the right time, reaching the right customer or prospect, using the right medium, supplying exactly the messages potential customers need. As the exchange of information is accelerating and competitors are better prepared with anticipated events, traditional marketing management focusing on planning and budgeting is unlikely to help brands gain competitive advantages. As such, this paper advocates vigilant marketing that calls for more market intelligence based on data analytics and quick response by the brand to seize unpredictable opportunities. Vigilant marketing requires some changes in management philosophy and systems, is critical in improving brand/firm marketing capability and market-orientation, and can lead to highly effective and profitable marketing results.

Brands need three distinct competencies to implement vigilant marketing successfully: sensing capability, diagnostic capability, and decision and budget authority. The fast development of information technologies enables a wide range of new tools and metrics, such as web analysis and sentiment analysis, to enhance brands' sensing capability. To enhance the diagnostic capability, brands traditionally make use of analytical tools that examine sales performance with a focus on marketing lift, but lack attention and methods to explore market opportunities through base demand analysis. This paper discusses persistence modelling, a unique diagnostic tool for base demand analysis.

Using persistence modelling, brands can identify sales evolution, an excellent opportunity when a short-lived, limited marketing effort can generate long-lasting effects. Using this technique, a study on several brands in the DSLR camera market — a mature market — shows that temporary windows of opportunity exist that allow brands to achieve sustained growth without proportionally increasing marketing spending. However, without proper diagnostic tools or decision/budget authority, most brands do not presently take advantage of such windows, resulting in a major opportunity cost. Through vigilant marketing, brands can identify and catch these unpredictable, fleeting opportunities, and grow their performance in mature markets.

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