Black Swan Theory of Events and the Impact to Hospitality Operators: Literature Review and Proposed Analysis

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Abstract

The Black Swan theory of events is an incident that deviates beyond what is normally expected of a situation and is extremely difficult to predict (Talib, 2007). Black Swan events impact the hospitality industry in many ways. Weather, widespread illness, civil unrest, terrorism, and loss of utilities are out of the immediate control of the industry's participants but impact their results. Occurrences at the property/corporate level can also impact performance in ways such as: food contaminants impacting restaurants, cruise ships losing power, running a ground, or sinking, experiencing a widespread Nora virus, hotels face fires, strikes, data breaches, boycotts, as well as events such as amusement parks having ride fatalities and animal welfare protests, etc. All of these events are quickly spread by multiple news sources, and consumers are able to search quickly using Google or other search engines to get more details.

Previous studies have looked at the aftereffects of exogenous—or self-inflicted— events, and how management teams reacted or did not react and the impact to operating results (Kosova & Enz, 2012). However, there is a paucity of academic analysis of Black Swan events to determine whether there is a way to reduce the impact.

Keywords: black swan, exogenous events, google trends and hospitality

1. Literature Review

The literature related to this analysis can be divided into four primary areas: (1) background and theory on crisis management in the hospitality sector; (2) analysis of how hospitality participants have reacted to Black Swan events; (3) theoretical models based on reaction to events or the development of a model for future use; and (4) review of case studies that look at how operators react to adverse events.

In the book, The Black Swan: The Impact of the Highly Improbable, Taleb (2007) explained the term Black Swan event: "First, it is an outlier, as it lies outside the realm of regular expectations, because nothing in the past can convincingly point to its possibility. Second, it carries an extreme impact. Third, in spite of its outlier status, human nature makes us concoct explanations for its occurrence after the fact, making it explainable and predictable"

According to Taleb (2007), a "black swan" is not supposed to exist:

> Before the discovery of Australia, people in the old world were convinced that all swans were white, an unassailable belief as it seemed completely confirmed by empirical evidence. The sighting of the first black swan might have been an interesting surprise for a few ornithologists (and others extremely concerned with the coloring of birds), but that is not where the significance of the story lies. It illustrates a severe limitation to our learning from observations or experience and the fragility of our knowledge. One single observation can invalidate a general statement derived from millennia of confirmatory sightings of millions of white swans. All you need is one single (and, I am told, quite ugly) black bird.

This definition seems very appropriate for the crises that hospitality participants face. Essentially the industry needs to expect the unexpected. A review of research on crisis management in hospitality seems appropriate and it similarity to the Black Swan theory of events.

A crisis is defined as a situation that has reached a critical phase, or turning point for better or worse, that is simply characterized by a certain degree of risk and uncertainty (Fink, 1986). However, the probability, frequency and

impact are what is critical. While attempting to examine Black Swan events one should note there are a variety of other crises. For example, one can create a 2×2 matrix to explain crisis defined by probability of occurrence and impact of event (Yu, Stafford, & Armoo, 2005). In a given scenario, operators should be ready for all sorts of events from the relatively mundane, high probability and low impact, such as three days of rain at a beach resort. An illustration of high impact but regular occurrence is the loss of power at a hotel in India. Not only low probability but also low impact can be a shutdown of the factory that makes a specific beer sold on a cruise ship. Finally, the crisis of greatest concern is that of low probability but high impact—Black Swans.

The crisis most frequently examined in the literature is when a low probability, high impact event strikes. This Black Swan event may occur rarely but, when it does, it causes greater damage to business not only because of its severity but also due to its unexpectedness (Yu, Stafford, & Armoo, 2005). Hospitality companies are rarely prepared for these types of events due to these reasons which are characterized by suddenness, uncertainty, and time compression (Lerbinger, 1997). Therefore, even if there may be some early warning signs, the time to react is compressed and the operator must make decisions based on inputs that are oftentimes incomplete, inadequate, or inaccurate (Yu et al., 2005). Lerbinger (1997) created a table that characterizes these events as having two separate major factors: external factors (such as physical environment or human/social environment) and one internal factor (management failure).

Other authors referred to this table as a template for characterizing tourism/business crisis because it breaks down the physical environment into natural disasters (e.g., hurricanes) or technology failure (e.g., oil spill or extended loss of power); and the human or social environment such as confrontation (e.g., boycotts), malevolence (e.g., terrorist attack), epidemic (e.g., SARs), or war/politics (e.g., racial confrontations in Baton Rouge). The other side of the business crisis is management failure such as skewed values (e.g., cruise ships dump waste into ocean), deception (e.g., a restaurant knowingly serves contaminated food), or misconduct (e.g., racial discrimination).

There are four stages to every crisis (Fink 1986):

1. Pre crisis stage is the early warning that there might be something brewing with indicators such as news stories of upcoming strikes or weather forecasts.

2. Acute crisis stage or a point of no return because this is when there is some damage already done to the operations (Yu et al., 2005) and how much damage will partially depend on event as well as how the operator responds.

3. Chronicle stage is the period of self-analysis and recovery when management examines the impact and what they can do to return the business back to normalcy. Fink pointed out that companies without a crisis management plan reported lingering effects of "chronicle crisis" that were two and a half times longer than those who were prepared with plan.

4. Crisis resolution is measured by the return of activities and sales to pre-crisis levels.

Another dynamic of tourism disaster was created by Falkner (2001) and is frequently cited (Henderson & Ng, 2004). Falkner (2001) broke down the phase into: pre-event (action is possible to reduce the impact); prodromal (prevention is no longer possible); emergency (impact occurs and action is essential); intermediate (immediate need have to be met to get back to normalcy); long term (progress towards restoration of status quo); and resolution (return to former routine or improvement). He also indicated that risk assessment is critical for the pre-event phase whereas disaster contingency plans are critical for all other stages.

The number of journal article examining how hospitality was impacted by SARs, 9-11, terrorist attacks (Burritt, 2001), tsunami (Robinson & Jarvie, 2008), and deep economic recessions (Chitiba,Olaru, & Olaru, n.d) are significant and a very well-researched part of hospitality literature. Many cited the theory and crisis management previously reviewed and applied. Several authors reviewed the operating metrics such as hotel RevPAR, occupancy, average daily rates (Enz, Kosova, & Lomano, 2011), inbound/outbound tourism statistics, airlift and utilization, and various other measures to assess the impact and rebound following these Black Swan events. For example, the top travel spender countries during the 2007-2009 economies revealed significant declines with long haul travel the most negatively impacted (Thomas/Pakkeeerappa, 2009).

There have also been a quite a few studies that examined what hotels did to reduce expenses in response to exogenous events. For example, in a study that examined how Washington hotels responded to 9/11, a survey conducted by Yu et al. (2005) of hotel General Managers post the crisis revealed that 72.7% of the operators reduced their staff while another 18.2% reduced benefits for employees. Burritt (2001) broadly looked at the entire industry after 9/11 and noted that cost containment measures were taken such as furloughing, cost reductions, closing food and beverage outlets, reducing the hours for health clubs, gift shops and room service, and even reducing energy

costs. However, the playbook for reducing expenses is straightforward and most hoteliers who have been through a few economic cycles know what to do.

The more interesting parts of these studies were the responses on the marketing front, especially if there were unified efforts. A vital element of a tourism recovery campaign is the formation and implementation of a recovery alliance between major tourism stakeholders (Beirman, 2009). Beirman included national, regional, and local governments and their destination marketing authorities, national and regional tourism industry associations, airlines, land and sea transport carriers which service the destination, tour operators, hoteliers, attractions and related service industries. The marketing program should not only try to offset any wrong negative perceptions (e.g., hotels are still closed, water is still polluted, locals are anti American) but also focus on the recovery process as a newsworthy event (Beirman).

A number of papers reviewed examples of industry participants bonding together to change perceptions. For example, the Tourism Board of Singapore created COOL which hoteliers could display to try and convince the public they were SARS free and SARS Ready (Henderson & Ng, 2004). The Pacific Asia Travel Association moved its headquarters from San Francisco to Bangkok in 1998 to coordinate the travel industry's response to the Bali bombings (Beirman, 2009); and, using similar techniques they applied in response to that Black Swan event, they created Project Phoenix to coordinate regional marketing programs in response to SARS. The literature suggests that, by combing resources, the turnaround in trends was faster than expected. However, one of the shortcomings of many of these papers is there is no "null hypothesis". Thus, it is hard to compare the participants who did something to those who did nothing to offset the negative perception after a Black Swan event.

A number of journal articles attempted to create a theoretical framework for crisis management. For example, Stafford, Yu and Armoo (2005) highlighted two contiguous flow charts. One inner circle chart illustrates preparing internally and externally with crisis training leading to crisis planning to crisis practices and reverting back to crisis training. At the same time another external chart illustrates how hoteliers should operate if a Black Swan event occurs with a flow chart moving from crisis to restoring order to external emergency response. Once the emergency has passed, the flow chart shifts to coordinating stakeholders, reassuring the local community when customers seem ready to return by use of media to market the product.

Another theoretical model for crisis management was proposed by Wang and Ritchie (2010) which they called the Onion model for Strategic Crisis Planning. The model illustrates how multiple layers of onions can interact so that operators start to first think more about strategic crisis planning and then how to put the response plan into action. The theory is that more planning in multiple layers will lead to better responses to negative events.

There are a number of case studies on how to respond to a crisis. One that stands out is Kwortinik (2006) analysis of how hotel employees reacted to the blackout of 2003. In the findings section (nearly half of the pages in the article are devoted to this) the author provides real life examples of how the employees and managers made the guests feel safe and cared for by creating a true sense of hospitality which provides actual examples employed by operators who faced the 2003 blackout and created great service.

2. Proposed Analysis

One source viewed as input was Google Trends/Insights and the other as the output, or statistics, to examine whether changes in Google trends (Gawlik, Kabaria, & Kaur, 2011), fueled by crisis management activities, can impact operating results. As suggested previously, it was posited that when bad news strikes consumers use Google to search for the issue. Google insights are comprised of normalized search volume indices that indicate the number of searches made on a given day by internet uses for a specific question on Google. One can assess the rise and fall of these searches with the implication/assumption that as these searches slow down the negative implications of this issue may decline as they shift away from the consumer consciousness. Gawlik et al. (2011) were among the first to use Google trends to predict tourism rates in specific countries. They used times series regression analysis to predict visitor arrival by incorporating aggregate search volume indices in the regression data. Others have adopted this technique (e.g., web search volume of Hong Kong provided a useful indicator of Hong Kong visitor arrivals) (Gawlik, et al.).

In a paper authored by Google, Israel Labs, Shimshoni, Efron, and Matias (2009) looked at a number of Google searches to determine their predictive capability. The findings revealed that travel has a very high predictive value (65%). Specifically, the researchers examined "Mexico as a vacation destination" and noted that search interest was down 15% versus forecast, while the broader "vacation destination" showed a 1.6% relative decline and "Caribbean Islands" showed a 2.5% relative decline. Thus, the posited that something seemed to be going on in Mexico in 2009

to cause such dislocation. The authors suggested that the outbreak of the swine flu in April 2009 may have been the Black Swan event that caused less interest in Mexico as vacation destination as measured by Google searches. Mexico was the epicenter of the start of the epidemic which very much slowed travel to the market.

3. Conclusion

There are a number of ways to examine the relationships between Google searches, responses to Black Swan events, and operating results. One is to use Google Trends/Insights to look at various events and see if there was a pick-up in searches during a specific period. The amount of searched can then be compared to the operating results of the targeted entity.

The implications for academia of using Google trends as tool for analysis are significant as the search technique does not appear to be widely used as a measure of consumer focus. Nevertheless, it is a very good indicator of what is on top-of-mind.

Regarding industry, this analysis may reveal that providing more information as part of crisis management may be a positive and lead to faster recovery. During crisis management and recovery industry participants may be unwilling to share information as it might cause even greater dismay. However, if the analysis can show that "more is better" as it leads to less, Google queries about the issue and, therefore, as it leads to better results, might change how people react.

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