Brand Damage from Product Harm and Corporate Social Irresponsibility – How Deep and How Long?

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BRAND CRISSES SEEM EVERYWHERE NOWADAYS

I’m Not Lovin’ It
BY AARON THIER    JULY 24, 2015

bp

FIFA
BRAND DAMAGE EFFECT FORM PRODUCT HARM CRISIS MAY BE SEVERE – BUT WHAT ABOUT CORPORATE SOCIAL MISBEHAVIOR?

• Severe damage to trust and confidence consumers place in brands from brand crises (Cleeren et al. 2008, *JAMS*).
• Extant research demonstrates damage to brand and firm performance from product harm crises.
• Managers take product failure seriously and react promptly (e.g., product recall).
• Attention to events of corporate social misbehavior is not at the same level. Why?
• What is the impact of a corporate social irresponsibility crisis on customer-based brand equity?

**Definition:** Brand crisis events as unexpected events that threaten a brand’s perceived ability to deliver expected benefits thereby weakening brand equity (Ahluwalia et al., 2000; Pullig et al., 2006; Roehm & Tybout, 2006; Dawar & Lei, 2009; Dutta & Pullig, 2011)
RESEARCH QUESTIONS

- Does corporate social irresponsibility damage brand equity differently than product-harm?
- How strong are the effects?
- Is the damage persistent?
- How long do the effects last?
- Which moderators amplify or attenuate brand damage effects?
TYPES OF CRISIS EVENTS

**Product harm crisis**
Information primarily aiming at a brand’s ability to provide functional benefits

- Deviations from product quality or inadequate service that leads to service failure, product defect, production stop, product recall, and other actions

  - Blackberry outage crisis 2011
  - Toyota gas pedal crisis 2009 - 2010

**Corporate unethical behavior → CSIR crisis**
Social or ethical issues that affect a brand’s ability to deliver symbolic benefits

**Product recall/ product defect / production stop**

**Violation of fair operating practices**
- Management misconduct relating to corruption such as bribery, breach of trust, money laundering, price-fixing or consumer fraud

**Violation of human rights / working conditions**
- Violation of compliance with human rights and conditions of employment

**Environmental scandal**
- Violation and endangerment of environmental surroundings including nature, animals and humans

**Corporate unethical behavior**
- Microsoft - 2000
- HP corporate spying scandal in 2006
- KIK employee crisis in 2010
- Deutsche Bank libor manipulation scandal in 2006
- BP deep water horizon crisis in 2010

**Social or ethical issues**
- Non-compliance with the law
- Violation of fair operating practices
- Violation of social responsibility
- Breach of trust among stakeholders
CONCEPTUAL FRAMEWORK

Crisis event

• Product-harm event
  (Product recall, production stop, service failure)

• CSIR event
  ➢ Violation of fair operating practices violation
  ➢ Violation of human rights / working conditions
  ➢ Environmental scandal

Crisis characteristics

• Media coverage
• Immediate firm reaction
• Crisis origin

Moderators

Short- and long-term effects

Brand & firm characteristics

• Prior brand strength
• Crisis history
• Firm size
• Product type

Controls

Confounding events

Customer-based brand perception

• Brand attention
• Brand strength

• Brand advertising
• Industry brand attention
• Industry brand strength

Brand attention

Brand strength
### MEASURE OF BRAND PERCEPTION:

<table>
<thead>
<tr>
<th>Brand perception</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand attention</td>
<td>&quot;About which of the following brands have you recently heard anything positive/negative through media, advertising, or WoM?&quot;</td>
</tr>
<tr>
<td>Brand strength (BrandIndex score)</td>
<td>Aggregate score of items below, between -100 and +100 based on comparison with other brands within industry</td>
</tr>
<tr>
<td>Brand quality</td>
<td>&quot;Which of the following brands do you think represents good/poor quality?&quot;</td>
</tr>
<tr>
<td>Brand value</td>
<td>&quot;Which of the following brands do you think represents good/poor value for money?&quot;</td>
</tr>
<tr>
<td>Brand Satisfaction</td>
<td>&quot;Of which of the following brands would you say that you are a satisfied/dissatisfied if you are or were a customer?&quot;</td>
</tr>
<tr>
<td>Brand trust</td>
<td>&quot;Which of the following brands would you recommend or avoid to a friend or colleague?&quot;</td>
</tr>
<tr>
<td>Brand reputation</td>
<td>&quot;Which of the following brands would you be proud/embarrassed to work for?&quot;</td>
</tr>
<tr>
<td>Brand impression</td>
<td>&quot;Overall, of which of the following brands do you have a positive/negative impression?&quot;</td>
</tr>
</tbody>
</table>
### DATA FOR MEASURING MAGNITUDE AND DURATION OF BRAND DAMAGE EFFECT

<table>
<thead>
<tr>
<th>Variable</th>
<th>Data</th>
<th>Period</th>
<th>Characteristics / Indexation</th>
<th>Source</th>
</tr>
</thead>
</table>
| **Focal brand attention and focal brand strength** | • Weekly YouGov attention measure  
• Weekly YouGov BrandIndex® | • 2008 - 2012  
• 254 weeks for more than 95% of brands | • See definition of BrandIndex before | [YouGov](http://yougov.com) |
| **Explanatory variables**                     |                                                                      |                               |                                                                                                |                         |
| **Industry brand attention and brand strength** | • Weekly YouGov measures for industry (excluding focal brand) | • 2008 - 2012  
• 254 weeks per industry | • See definition of BrandIndex before | [YouGov](http://yougov.com) |
| **Crisis event**                              | • Product-harm and CSIR events covered in press                       | • 214 crisis events           | • Binary variable for week when crisis event covered in press first time                     | Press research / online database |
| **Advertising expenditures**                  | • Weekly advertising expenditures on focal brand                    | • 2008 - 2012  
• 254 weeks for more than 90% brands | • Weekly advertising expenditures in € in major media channels (TV, Radio, Print, Outdoor, Online) | [eBiquity](http://ebiquity.com) |
## Data for Measuring Drivers of Brand Damage Effect

<table>
<thead>
<tr>
<th>Moderators</th>
<th>Variable</th>
<th>Realization / data</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Crisis type</strong></td>
<td>• Dummy variable indicating type of crisis</td>
<td>• Fair operating practices violation (base)</td>
<td>Press research / online database</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Human / working rights violation</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Environmental scandal</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Product-harm crisis</td>
<td></td>
</tr>
<tr>
<td><strong>Media coverage</strong></td>
<td>• Count variable</td>
<td>• Number of media that cover crisis event</td>
<td></td>
</tr>
<tr>
<td><strong>Crisis history</strong></td>
<td>• Count variable</td>
<td>• Stock of remembered prior crisis events</td>
<td></td>
</tr>
<tr>
<td><strong>Immediate firm reaction to event</strong></td>
<td>• Dummy variable classifying firm reaction to crisis event</td>
<td>• Deny: deny of blame others (base)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• No reaction: no reaction or be passive</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Rebuild: apology, admission of guilt</td>
<td></td>
</tr>
<tr>
<td><strong>Product type</strong></td>
<td>• Dummy variable indicating product type of brand</td>
<td>• Durables (base)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Non-Durables</td>
<td>Retail</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• International (base)</td>
<td>National</td>
</tr>
<tr>
<td><strong>Crisis origin</strong></td>
<td>• Dummy variable indicating geographic dimension of crisis</td>
<td>• International (base)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• National</td>
<td></td>
</tr>
<tr>
<td><strong>Prior brand strength</strong></td>
<td>• Brand perception score of focal brand prior to crisis event</td>
<td>• See definition of BrandIndex before</td>
<td>YouGov</td>
</tr>
<tr>
<td><strong>Firm size</strong></td>
<td>• Number of employees</td>
<td>• Number of employees (Source: Compustat)</td>
<td>Compustat</td>
</tr>
</tbody>
</table>
EXEMPLARY TIME-SERIES FOR BRAND ATTENTION AND BRAND STRENGTH

**BP**
(Global oil and gas company)

**Brand attention**

**Brand strength**

**Crisis event:** Environmental scandal
Explosion and sinking of oil rig caused major environmental catastrophe (Date: April 2010)

**Toyota**
(Global automobile manufacturer)

**Brand attention**

**Brand strength**

**Crisis event:** Product-harm crisis
Toyota recalled millions of vehicles due to unintended acceleration problems (Date: January 2010)
EMPIRICAL STRATEGY

1. Identify product-harm and CSI events
   - Comprehensive press search for relevant articles in Germany in 2008-2012
   - Exclude crisis events with confounding events

2. Test for model free evidence
   - Conduct difference-in-difference tests with controlled, quasi-experimental design

3. Test for conditions of persistent effects
   - Test for unit root in brand perception of focal brand and industry, brand advertising expenditures, and consumer interest
     - Individual tests: Augmented Dickey-Fuller Test, Phillips-Peron test, Kwiatkowski–Phillips–Schmidt–Shin test
   - Test for cointegration for evolving variables using residual-based Pedroni and Kao cointegration tests

4. If no evidence for persistent effects provided, estimate immediate and cumulative brand crisis effect
   - Estimate error-correction model (ECM) for each brand time-series
   - Obtain immediate and cumulative effects for each brand crisis event from parameter estimates

5. Estimate the impact of moderator variables on immediate and cumulative crisis effects
   - Regress estimated immediate and cumulative brand-crisis-event effects on set of moderator variables
DESCRIPTIVES & FIRST INSIGHTS HOW DEEP AND LONG CRISIS EFFECT LAST

**No. of crisis events in sample**
- Total crises events: 214
- Brands: 69
- Industries: 12
- Product types: 4

**No. of crisis events by brand**
- Average: 3.1
- Median: 2.0
- Min: 1.0
- Max: 15.0

Average* impulse response function of brand perception to crisis event

- Ø duration of brand damage effect = 2.6 months

Examples of individual brand strength responses to crisis event*

- Range of duration of brand damage effect = .5 – 9.5 months

* Average = weighted sum of brand-specific parameters (weights = inverse of standard error)

* Random selection of 15 crisis events
## BRAND ATTENTION EFFECTS (SIMULATION OF GAINS AND LOSSES)

<table>
<thead>
<tr>
<th></th>
<th>Immediate effect</th>
<th>Cumulative effect</th>
<th>Duration of effect (in months)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0%</td>
<td>50%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Base scenario</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Crisis type</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Product-harm</td>
<td>6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CSI</td>
<td>14%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Media coverage</td>
<td>44%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Crisis origin</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>International</td>
<td>7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>National</td>
<td>12%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Reaction</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No reaction</td>
<td>18%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deny</td>
<td>7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accept</td>
<td>8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Brand strength</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Firm size</td>
<td>4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crisis history</td>
<td>9%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Significant effect**
- **Non-significant effect**

- Base scenario measure the grand mean by keeping all variables at their sample mean.
- Analysis simulates increase in brand attention if focal moderator variable takes on value of new category or increases by 100%.
- Duration is estimated based on cumulative effect relative to grand mean.
- Colors indicate whether estimated coefficients are significant with respect to 2nd stage WLS regression.
## BRAND STRENGTH EFFECTS (SIMULATION OF GAINS AND LOSSES)

<table>
<thead>
<tr>
<th></th>
<th>Immediate effect</th>
<th>Cumulative effect</th>
<th>Duration of effect (in months)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-120% -80% -40% 0%</td>
<td>-120% -80% -40% 0%</td>
<td>0 2 4 6 8</td>
</tr>
<tr>
<td><strong>Base scenario</strong></td>
<td>-13%</td>
<td>-59%</td>
<td>2.2</td>
</tr>
<tr>
<td><strong>Crisis type</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Product-harm</td>
<td>-7%</td>
<td>-36%</td>
<td>1.2</td>
</tr>
<tr>
<td>CSI</td>
<td>-19%</td>
<td>-87%</td>
<td>3.4</td>
</tr>
<tr>
<td>Media coverage</td>
<td>-21%</td>
<td>-109%</td>
<td>4.3</td>
</tr>
<tr>
<td><strong>Crisis origin</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>International</td>
<td>-3%</td>
<td>-46%</td>
<td>1.6</td>
</tr>
<tr>
<td>National</td>
<td>-16%</td>
<td>-64%</td>
<td>2.4</td>
</tr>
<tr>
<td><strong>Reaction</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No reaction</td>
<td>-15%</td>
<td>-53%</td>
<td>1.9</td>
</tr>
<tr>
<td>Deny</td>
<td>-27%</td>
<td>-86%</td>
<td>3.3</td>
</tr>
<tr>
<td>Accept</td>
<td>-2%</td>
<td>-42%</td>
<td>1.5</td>
</tr>
<tr>
<td><strong>Brand strength</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-11%</td>
<td>-48%</td>
<td>1.7</td>
<td></td>
</tr>
<tr>
<td><strong>Firm size</strong></td>
<td>-10%</td>
<td>-54%</td>
<td>2.0</td>
</tr>
<tr>
<td><strong>Crisis history</strong></td>
<td>-12%</td>
<td>-74%</td>
<td>2.8</td>
</tr>
</tbody>
</table>

- **significant effect**
- **non-significant effect**

- Base scenario measure the grand mean by keeping all variables at their sample mean.
- Analysis simulates loss in brand strength if focal moderator variable takes on value of new category or increases by 100%.
- Duration is estimated based on cumulative effect relative to grand mean.
- Colors indicate whether estimated coefficients are significant with respect to 2nd stage WLS regression.
KEY FINDINGS

• The crisis effects are asymmetric. While brand attention increases, brand strength drops.

• CSIR crises are deeper and last longer than product harm crises.

• Cumulative effect in brand strength equivalent to 87% (37% for product harm) loss in brand perception rating.

• Damage may last more than 9.5 months.

• Prior brand strength protects.

• The effect aggravates if the firm denies responsibility, the event is a national event, and more media report on the news.
LINKING THEORY TO PRACTICE

In today's volatile work environment, avoiding disaster is more important than ever. Appropriate crisis management helps managers identify, manage, and prevent potential crises:

“All this brings us to the one aspect of the ignorable moment [crisis event] that is, for a strong leader, positive and priceless. It is so dramatic and disruptive that it demands the attention of the entire organization. Thus, good leaders recognize unignorable moments as opportunities to have unprecedented influence. The way they handle them can change the course of their organizations’ futures – as well as determine their own legacies.“
O’Conner & Dornfeld, Harvard Business Review, 10/07/2014
Online: https://hbr.org/2014/10/when-your-company-has-a-problem-it-cant-ignore

• Tracking the public perception of brands across the world on a daily basis helps management to find out in real-time how consumers perceive and rate their brand.

• Secondary data regarding consumer-based brand metrics typically exist as yearly or quarterly data, at best.

• The daily time-series structure of our applied dataset allows to investigate brand effects in multiple observed actual crisis situations.

• Metrics like the BrandIndex provided by YouGov continuously measure public perception of thousands of brands across dozens of sectors.
IMPLICATIONS FOR MANAGERS

- Be aware of devastating effect on brand from corporate misbehavior
- Sales loss may not be immediate but unfold over time (sticky brand equity effects, Hanssens et al. 2014, *MktgSc*)
- Best response to crisis depends on individual characteristics but denial of responsibility as worst option
- Invest in brands to protect against danger of crisis
- Monitor media coverage to predict crisis depth and duration

Limitations

- Sample limited to German consumer perceptions and crisis events
- Advertising expenditures as proxy for all marketing-instruments (e.g., price promotions are not included in our dataset)
Questions or comments?

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