Minimizing Risk with Users Who Embrace it: Innovative Approaches to Online Gambling

Full Paper

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Abstract

In recent years online innovations in Internet content offerings has produced a myriad of highly interactive fantasy sports and gambling sites designed to entice users to wage funds. Although factors such as accessibility and anonymity help motivate people to bet online, many hesitate to wager for reasons that must be examined if online betting websites (OBW) are to continue to innovate and grow. Our research examines how OBW users’ past experiences and perceived reputation influences psychological contract violation (PCV) and perceived institutional effectiveness as they pertain to OBW offerings. We also investigate the effect of institutional effectiveness on users’ concerns and betting behavioral intention. Initial results suggest that OBW users have concerns about transactional information even though they tend to be less risk adverse than non-OBW users. This study also found that psychological contract violation minimizes users’ perception about overall OBW structures’ effectiveness developed to protect online gamblers.

Keywords

Psychological contract violation, strategic risk minimization, risk perception, privacy perception

Introduction

A large body of research exists that measures the impact of psychological contract and privacy violations, as well as perceived risks on how users interact and maintain relationships with ecommerce websites (Pavlou and Gefen 2005). Studies have proven that maintaining a strong relationship between the user and the site, whether Amazon.com or eBay, is a critical strategic advantage within the competitive environment of online ecommerce transactions.

However, most of these transactions involve known goods and services -- for example, a book, a bluetooth speaker, or even a vacation getaway purchase -- for which consumer risk is minimized by incorporating new ways to enable user reviews, virtual experiences to entice purchases, third-party certifications, etc. (Kim et al. 2008; Pavlou 2003). It is within this context we examine how a non-traditional gambling site, which by its function must encourage financial risk for users’ enjoyment and winnings potential, also can simultaneously encourage its users to exchange sensitive information—both personal and financial—to wager funds, while creating an atmosphere of trust and customer loyalty by implementing well-known risk reduction strategies.

To do this, we have implemented a preliminary study to examine the nature and role of psychological contract violation (PCV) in online betting sites. PCV is defined as a buyer's perception of having being
Minimizing risk with users in online gambling

treated wrongly regarding the terms of an exchange agreement with a seller (Pavlou 2003). PCV with the community of sellers is assumed to minimize buyer transaction behavior on an online betting site by directly impacting transaction intentions, information misuse risk, privacy risk, and the perceived effectiveness of institutional structures.

Our preliminary model measures how an Online Betting Site (OBW) user’s experience with a specific gambling website, in addition to the website’s reputation, is impacted by potential psychological trust violations. Much of this is measured via the user’s perceptions of transaction security (Kim et al. 2008), institutional structures, information use and transparency, and privacy concerns (Hong, 2015). These factors do increase the OBW user’s overall intent to gamble on the site as well as potential repeat behaviors. However, we also investigated how, given the public stigma of problem gambling, an OBW user might be influenced by what others thought of his/her online gambling versus his/her enjoyment of it (Mäntymäki and Salo 2011; Sun and Zhang 2006). Finally, we considered how much risk potential—be it loss or sharing of personal data, site trustworthiness, or external opinion—might be minimized by a gambling site’s use of innovative incentives, resulting in a competitive advantage over other sites by maximizing its users’ loyalty. By using this three-pronged approach we intend to unravel the complex interactions that must occur in successful high-risk sites even with less risk-adverse individuals.

In the following sections, we first summarize research studies that influenced the constructs we used to create our model. Next, we describe hypotheses that we tested as well as our overall methodology. We conclude with our findings, our limitations, and an appeal for additional focused studies. Ultimately, we intend to prove how gambling websites can minimize users’ aversion to privacy and other personal risks, and simultaneously encourage users to accept and embrace the gambling risk that comes with wagering funds for enjoyment and potential profit.

Literature Review

As the growth of the Internet continues to impact the way that individuals and businesses interact, companies are forced to bring new online markets to the forefront of their strategic business decisions. In particular, the relatively new Internet medium has coupled with the perpetually contentious gambling industry to inspire newsworthy debate on a near-daily basis (Bernhard and Abarbanel, 2011). In 2016, the global online gambling market was worth $37 billion and is to have a compound annual growth of 11 percent by 2020.

Imagine handing over hundreds or even thousands of dollars to someone you do not know and can communicate with only virtually, and, if your money disappeared, you would have no legal or other recourse to recover it. Despite the oversimplification of such a scenario, millions of U.S. residents gamble daily online without the protection of reliable regulatory structures that would ensure age and identity verification, the integrity and fairness of the games, and responsible gambling features on the online gambling website (Stewart, 2006). Why then do these interactions occur?

The relationship between the confidence that online consumers have in a website and their corresponding website usage is well documented in the ecommerce arena (Gefen et al., 2003; Komiak and Benbasat, 2004; McKnight et al., 2002). Online consumers traditionally are not likely to complete transactions with a website that fails to convey a sense of trust for them. Research findings do suggest that online gamblers have questioned the legitimacy and fairness of online casinos; one survey found that 55 percent of regular online gamblers believe at least somewhat that online casinos find ways to cheat players (Landes, 2007). However, issues of trust do not yet appear to be negatively influencing the industry’s growth. Gamblers continue to hand over large sums of money without indicating a strong trust in online betting sites. Our research undertakes an examination of why this might be the case.

Theoretical Background

According to cognitive dissonance theory, individuals tend to seek consistency among their cognitions (Bhattacherjee and Premkumar, 2004). When there is an inconsistency among individuals’ cognitions (dissonance), they find various means to minimize the dissonance. One of the approaches individuals use it to is to change their attitude in order to minimize the dissonance. In the context of online gambling, users have specific expectations from online betting websites (OBW). These expectations can be
correlated into the Psychological Contract Violation (PCV) construct. PCV refers to how OBW users perceive whether the website treated them in accordance with its agreement with them (Pavlou and Gefen 2005). Therefore, PCV can be viewed as the dissonance between users' expectations and their actual experience with the OBW. Users following the aforementioned approach remove the inconsistency between expectation and performance. Thus, perceptions of OBW users are influenced by their PCV.

According to the theory of reasoned action, individuals' behaviors are influenced by their intention and their attitude toward the behavior (Ahuja and Thatcher, 2005). So, we would argue that OBW users' perception of the overall effectiveness of the OBW institutional structure influences their other perceived concerns about the security and privacy of an OBW. Based on the theory of reasoned action, the OBW users' perceptions would impact their intention to bet on these websites. Finally, those users who are more inclined to bet are more likely to complete this behavior. Based on this reasoning, we hypothesized the research model shown in Figure 1.

**Figure 1: Research Model**

**Hypotheses**

Our hypotheses start with the premise that OBW users’ perceptions regarding the extent to which the OBW violates its agreements with them could be influenced by users’ past experiences with the site and their perception of its reputation. OBW users' past positive experience refers to the quality of the users' experience with the site (Pavlou and Gefen 2004, 2005). In other words, users who had positive experiences with the OBW tend to trust that the site's performance will be consistent in other aspects with their past experiences (Bansal et al. 2015). In addition to users’ past experience, the site's reputation influences users' PCV. The site's reputation refers to the overall evaluation of users about all site aspects (Li 2014). Therefore, perceived OBW reputation influences how users evaluate the site in almost any aspect. One of these aspects is the extent to which the website treats users based on the user agreements. Thus, we hypothesize that:

H1: OBW users’ past positive experiences minimize their perceived psychological contract violation.

H2: OBW users' perceived reputation of the OBW minimizes their perceived psychological contract violation.

Perceived effectiveness of institutional structures refers to the extent to which the OBW provides appropriate conditions to ensure successful interactions between it and its users (Pavlou and Gefen 2005). Users' perceptions of institutional structures may influence users' concerns and consequently their
behavior (Reichheld and Schefter 2000). As a result, psychological contract violations impact the inconsistency or dissonance between users’ expectation from the OBW and their perceived experience (Pavlou and Gefen 2005). According to cognitive dissonance theory, individuals who perceive dissonance between expected performance and actual performance change their beliefs to minimize the existing dissonance (Lim et al. 2005). OBW users who perceived inconsistency between their expectations and the OBW performance are more likely to have a negative perception about the site’s institutional structures. Consequently, we posit that:

$$H_3:$$ OBW users’ perceived psychological contract violation minimizes perceived effectiveness of institutional structures.

OBW users who perceive that the site’s institutional structures are in an appropriate condition to facilitate successful interactions are more likely to place bets. These institutional structures protect users from a variety of threats in an online environment (Fang et al. 2014; Pavlou and Gefen 2005). Therefore, users’ intention to bet will increase because of the OBW’s perceived support. Finally, according to the theory of reasoned action, behavioral intent to perform a behavior is the primary antecedent of the actual behavior. Thus, users who have greater intentions to bet online are more likely to place a bet on the site. Therefore, we suggest that:

$$H_4:$$ Perceived effectiveness of institutional structures positively influences intention to bet among OBW users.

$$H_5:$$ Intention to bet positively influences betting behavior.

Effective institutional structures reduce the individual’s perceived risks during the transaction (Pavlou and Gefen 2004). In this research, we define “perceived effectiveness of institutional structures” as a second order formative construct. In a second order construct, each first order construct signifies a unique aspect of the higher order construct (Chin 1998). Institutional effectiveness also affects users’ perception about future possible threats. The rationale is that users, who perceive that a particular OBW built effective structures to protect them, should not be concerned regarding their interactions with the site. According to procedural fairness theory, individuals who perceive fair procedures to protect their information have fewer concerns regarding their interactions (Dinev et al. 2013). An OBW with effective institutional structures could be viewed by users as a website with fair procedures. Consequently, effective institutional structures decrease users’ perceived concerns. Of course, there are different concerns for users in an online interaction; however, the major concerns during the online betting tend to be the privacy of user information collected and the security of the transactions. Thus, we hypothesize that:

$$H_6:$$ Perceived effectiveness of institutional structures negatively influences OBW users’ transaction security concerns.

$$H_7:$$ Perceived effectiveness of institutional structures negatively influences OBW users’ privacy concerns.

There are several ecommerce researchers who suggest that online privacy concerns are an important construct that result in negative outcomes such as low intention in an online environment (Ackerman et al. 1999; Miyazaki and Fernandez 2001; Mousavizadeh et al. 2016). Another important concern by OBW users is transactional security. Transactional security concern refers to “concerns about potentially malicious individuals who breach technological data protection devices to acquire consumers’ personal, financial, or transaction- oriented information” (Miyazaki and Fernandez 2001, p. 34). Users who perceive that transactions on OBW are risky are less likely to perform any transaction online. Therefore, they will not bet:

$$H_8:$$ OBW users’ transaction security concerns negatively influences their intention to bet.

$$H_9:$$ OBW users’ privacy concerns negatively influences their intention to bet.
Methodology

Measurement and Data Collection

We used a plethora of previously validated scales for most of the study’s constructs (Table 1). Data was collected from students at two U.S. universities in diverse geographical locations to one another. The total number of the participants in the survey was 90 after incomplete or non-gambling participant responses were removed. Table 2 displays the demographics of the participants.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Source</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Positive Past Experience</strong>'</td>
<td>Pavlou and Gefen (2005)</td>
<td>PPE1: My past experience with the fantasy sports and gambling sites was positive.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PPE2: In general, I have been satisfied with the fantasy sports and gambling sites.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PPE3: The fantasy sports and gambling sites did a good job in the past.</td>
</tr>
<tr>
<td><strong>New item</strong></td>
<td></td>
<td>PPE4: Based upon my experience, the fantasy sports and gambling sites are doing the best to satisfy all users.</td>
</tr>
<tr>
<td><strong>OBW Reputation</strong></td>
<td>Kim et al. (2008)</td>
<td>REP1: The fantasy sports and gambling sites are well known.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>REP2: I am familiar with the name of fantasy sports and gambling sites.</td>
</tr>
<tr>
<td><strong>New item</strong></td>
<td></td>
<td>REP3: The fantasy sports and gambling sites are popular online betting sites.</td>
</tr>
<tr>
<td><strong>Psychological Contract Violation</strong></td>
<td>Pavlou and Gefen (2005)</td>
<td>PCV1: In general, the fantasy sports and gambling sites met their contractual obligations to me during our transactions.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PCV2: In general, the fantasy sports and gambling sites have done a good job of meeting their contractual obligations to me during our transactions.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PCV3: In general, the fantasy sports and gambling sites have fulfilled the most important contractual obligations to me during our transactions.</td>
</tr>
<tr>
<td><strong>Perceived Effectiveness of Institutional Structures</strong></td>
<td>Pavlou and Gefen (2005)</td>
<td>PEIS1-Feedback: I feel confident that the fantasy sports and gambling sites feedback mechanisms give accurate information.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PEIS1-Feedback: I believe that the feedback mechanisms in the fantasy sports and gambling sites are effective.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PEIS3-Credit Card Guarantee: I believe my credit-card company/bank will protect me in case of problematic transactions with the fantasy sports and gambling sites.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PEIS4-Credit Card Guarantee: I am confident that my payments are safe in case of disputed betting issues at the fantasy sports and gambling sites.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PEIS5-Trust: As an online betting site, the fantasy sports and gambling sites can be trusted at all times.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PEIS6-Trust: As an online betting site, the fantasy sports and gambling sites have high integrity.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PEIS7-Trust: The fantasy sports and gambling sites are competent and knowledgeable online betting sites.</td>
</tr>
<tr>
<td><strong>Perceived Transaction Security Concern</strong></td>
<td>Kim et al. (2008)</td>
<td>TSC1: I am concerned that the fantasy sports and gambling sites do not implement security measures to protect their users.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TSC2: The fantasy sports and gambling sites usually do not ensure users that transactional information is protected from accidentally being altered or destroyed during a transmission on the Internet.</td>
</tr>
</tbody>
</table>

1 The questions were reverse coded for analysis
Minimizing risk with users in online gambling

Perceived Privacy Concern

Kim et al. (2008)

TSC3: I am concerned with the electronic payment systems of the fantasy sports and gambling sites.
TSC4: I am concerned with using my credit card to place bets on the fantasy sports and gambling sites.
TSC5: I do not feel safe in making transactions on the fantasy sports and gambling sites.

PPC1: I am concerned that the fantasy sports and gambling sites are collecting too much personal information from me.
PPC2: I am concerned that the fantasy sports and gambling sites will use my personal information for other purposes without my authorization.
PPC3: I am concerned that the fantasy sports and gambling sites will share my personal information with other entities without my authorization.
PPC4: I am concerned with the privacy of my personal information during my interaction with the fantasy sports and gambling sites.
PPC5: I am concerned that the fantasy sports and gambling sites will sell my personal information to others without my permission.

Intention to Bet

Chiu et al. (2014)

IB1: I plan to continue using the fantasy sports and gambling sites for online betting.
IB2: I consider the fantasy sports and gambling site to be my first choices for online betting in the future.
IB3: It is likely that I will continue betting at the fantasy sports and gambling sites in the future.

Mousavizadeh et al. (2016)

IB4: I would consider making bets at the fantasy sports and gambling sites.
IB5: There is a strong likelihood that I will bet at the fantasy sports and gambling sites.

Betting Behavior

Koohikamali et al. (2015)

BB1: I bet at the fantasy sports and gambling sites whenever I have time.
BB1: I rarely bet at the fantasy sports and gambling sites.

New items

BB1: I prefer to spend some time every week betting at the fantasy sports and gambling sites.

Table 1: Measurement Items

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Value</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>69%</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>31%</td>
</tr>
<tr>
<td>Age</td>
<td>18 - 24</td>
<td>83%</td>
</tr>
<tr>
<td></td>
<td>25 - 34</td>
<td>14%</td>
</tr>
<tr>
<td></td>
<td>35 or older</td>
<td>3%</td>
</tr>
<tr>
<td>Income</td>
<td>Less than $10,000</td>
<td>53%</td>
</tr>
<tr>
<td></td>
<td>$10,000 - $19,999</td>
<td>27%</td>
</tr>
<tr>
<td></td>
<td>$20,000 - $29,999</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>$30,000 - $39,999</td>
<td>4%</td>
</tr>
<tr>
<td></td>
<td>more than $40,000</td>
<td>6%</td>
</tr>
<tr>
<td>Education</td>
<td>High school graduate</td>
<td>6%</td>
</tr>
<tr>
<td></td>
<td>Some college</td>
<td>60%</td>
</tr>
<tr>
<td></td>
<td>2 year degree</td>
<td>22%</td>
</tr>
</tbody>
</table>
Measurement and Structural Model

For our data analysis, we used Partial Least Squares (PLS) with Smart PLS as our Statistical Analysis tool. In addition, we conducted two analysis steps: (1) we analyzed the measurement model to assess reliability and validity of the measurement items, and (2) we analyzed the structural model to indicate the model’s predictive power and hypotheses statistical significances.

We addressed the importance of the measurement model adequacy by analyzing reliability, internal consistency, and discriminant validity (Hulland 1999). Construct reliabilities were measured by analyzing the Cronbach’s alphas, and composite reliabilities. According to Nunnally and Bernstein (1978), Cronbach’s alphas and composite reliabilities above 0.7 show acceptable reliability (see Table 2). To evaluate convergent validity, we used Average Variance Extracted (AVE). AVE values above 0.7 generally show that the latent variable explains more than half of the variation in the indicators (Table 2) (Fornell and Larcker 1981). The diagonal values in Table 2 represent the root squares of AVE. These values are another measure of convergent validity.

The discriminant validity of the measurement model AVE values on Table 2 should be greater than the off-diagonal correlations (Table 3). In addition, the factor loading of each associated construct item should be lower within the construct loadings (Table 4). Our findings support this for the most part.

<table>
<thead>
<tr>
<th>Item</th>
<th>Positive Past Experience</th>
<th>OBW Reputation</th>
<th>Psychological Contract Violation</th>
<th>Perceived Transaction Security Concern</th>
<th>Perceived Privacy Concern</th>
<th>Intention to Bet</th>
<th>Betting Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPE1</td>
<td>0.784</td>
<td>0.165</td>
<td>0.081</td>
<td>-0.286</td>
<td>0.102</td>
<td>0.022</td>
<td>0.116</td>
</tr>
<tr>
<td>PPE2</td>
<td>0.805</td>
<td>0.245</td>
<td>0.148</td>
<td>-0.190</td>
<td>-0.080</td>
<td>0.265</td>
<td>0.041</td>
</tr>
<tr>
<td>PPE3</td>
<td>0.858</td>
<td>0.048</td>
<td>0.058</td>
<td>-0.137</td>
<td>0.025</td>
<td>0.149</td>
<td>0.016</td>
</tr>
<tr>
<td>PPE4</td>
<td>0.632</td>
<td>0.028</td>
<td>0.147</td>
<td>0.042</td>
<td>-0.348</td>
<td>0.180</td>
<td>-0.053</td>
</tr>
</tbody>
</table>

### Table 2: Demographics

| 4 year degree | 12% |

### Table 3: Measurement Reliability and Validity

<table>
<thead>
<tr>
<th>Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Positive Past Experience</td>
<td><strong>0.833</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. OBW Reputation</td>
<td>0.726</td>
<td>0.833</td>
<td>0.705</td>
<td>0.394</td>
<td><strong>0.791</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Psychological Contract Violation</td>
<td>0.828</td>
<td>0.935</td>
<td>0.896</td>
<td>-0.340</td>
<td>-0.388</td>
<td><strong>0.910</strong></td>
<td></td>
</tr>
<tr>
<td>4. Perceived Transaction Security Concern</td>
<td>0.712</td>
<td>0.925</td>
<td>0.903</td>
<td>-0.379</td>
<td>-0.191</td>
<td>0.406</td>
<td><strong>0.844</strong></td>
</tr>
<tr>
<td>5. Perceived Privacy Concern</td>
<td>0.739</td>
<td>0.934</td>
<td>0.913</td>
<td>-0.204</td>
<td>-0.012</td>
<td>0.290</td>
<td>0.405</td>
</tr>
<tr>
<td>6. Intention to Bet</td>
<td>0.725</td>
<td>0.929</td>
<td>0.906</td>
<td>0.346</td>
<td>0.344</td>
<td>-0.292</td>
<td>-0.148</td>
</tr>
<tr>
<td>7. Betting Behavior</td>
<td>0.791</td>
<td>0.899</td>
<td>0.849</td>
<td>0.034</td>
<td>0.058</td>
<td>-0.092</td>
<td>-0.280</td>
</tr>
</tbody>
</table>

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In our study we assessed the structural model by examining the path coefficients and R-square. The path coefficients explain the strength and the direction of the construct relationships and the R-squares indicate the research model’s predictive power (Figure 2).

**Discussion**

In our study we found that users’ past positive experience and the reputation of the OBW is a critical negative determinant of the site’s psychological contract violation. Second, we determined that perceived psychological contract violation minimizes the user’s perceived effectiveness of the OBW’s institutional structures. Third, we demonstrated that perceived effectiveness of institutional structures positively influences an individual’s intention to bet, which ultimately leads to actual betting. We also found that perceived effectiveness of institutional structures negatively influences users’ transaction security and privacy concerns. Moreover, users’ transaction security concerns negatively impact their intention to bet. Finally, we found that privacy concerns minimize a user’s betting intention.

A significant managerial implication resulting from this study is that OBWs should take steps to reduce psychological contract violation. The site should make certain that it fulfills all expected obligations, such as timely payout of users’ winnings. In addition, the OBW should ensure its transactional requirements are clear and meet its obligations to users. Failure to do so will hamper the site’s reputation and thus deter
potential site users. Interestingly, we found that a loss of privacy was not an issue with OBW users. This contradicts existing privacy research and should be further explored.

Our study contributes to overall research in that it identifies psychological contract violation, perceived effectiveness of institutional structures, privacy, and transaction security concerns associated with the online betting industry. Effectively applying these to the online betting market is an effective strategy because these complementary factors play an integral role in site success. Therefore, these components should be considered as a part of a successful online gambling company’s business strategy.

![Figure 2: Structural Model Assessment Results](image)

**Limitations**

Our study does have limitations. Most of our participants were college students so our demographics are skewed towards younger individuals with minimal disposable funds. In addition, it is cross-sectional and thus limited to the associational interpretation of results, rather than drawing any causal inferences. We plan to extend this study by distinguishing between fantasy sports site users and online gambling site users in order to provide more insights and robust evidence in this research stream. In addition, our future research may explore nuances associated with betting behavior using a more critical lens in addition to the study’s exploratory nature.

**Conclusion**

Our study investigated how a user's experience with a particular gambling website coupled with the website’s reputation was impacted by potential psychological trust violations. In addition, we posed the research question of how institutional structures, information use and transparency, and privacy concerns have an impact on a user’s overall intent to gamble on the site as well as potential repeat behaviors. We surveyed individuals who have been involved in online gambling and found support for all our hypotheses except that online gamblers are not concerned about their privacy. Ultimately, our study contributes to the research on minimizing risks in online gambling sites, thereby assisting businesses who want to increase user participation and transactions.

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