Reflection Analysis Paper

An Entrepreneur's Approach to Strategic Positioning using Behavioral Finance

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I love seeing things work: software, gears, spreadsheets, and any other complex systems. The domain of finance is appealing to my curious nature, but has seemingly limited utility to me. I want to pursue entrepreneurship, and complex financial magic is not germane to strategy. Behavioral finance is different. I am going to make a case for how behavioral finance can be used to gain a competitive advantage in positioning a company against the *five external forces*.

A business' external strategy is defined by how it deals with the forces of industry competition, new entrants, suppliers, buyers, and substitutes (Porter, 2008). I demonstrate that advantages can be gained against these forces by wielding status quo bias, conjunction fallacy, mental accounting, endowment effect, and the certainty effect, respectively.

This analysis will be conducted through the lens of an actor looking to maximize firm value. Normal ethical boundaries will be followed, but subjective moral limitations will be disregarded. Jeffery Pfeffer argues that most of what is done in the pursuit of power will be forgotten, if successful (Pfeffer, 2022).

This is a high level discussion, with explicit tactics and industry details being left out for brevity. Execution of this strategy must take into consideration the value of relationships, moral implications, and the most recent consensuses within behavioral finance. For me, this paper is only the start of a lifelong journey exploring the application of behavioral finance in business.

Force One: Industry Competitors

Starting a business largely begins with entering a market and considering the competition landscape. Incumbents are going to be challenging to displace. The difficulty in moving customers in complex markets can be described with status quo bias (Ackert, 2022a).

The act of controlling an unoccupied market is known as the blue ocean strategy, and

well known to provide extended market dominance to the incumbent through status quo (Pisano, 2015). *Figure 1* demonstrates the new customers accessed within a blue ocean market. The challenge is that this positioning requires an innovative product or an innovative business process (Kim, 2004). A strong innovation plan is necessary for a blue ocean to be possible.

Force Two: New Entrants

In spite of the status quo benefits enjoyed by the incumbent of a blue ocean, power attracts competition (Pfeffer, 2010). The best strategies for dealing with new entrants will block their attempts to enter the market as early as possible.

Business is hard, so any way to decrease the perceived chance of success for competitors is a great defense. Luckily, there's a tool to help with this: the conjunction fallacy. Here, subjects are inclined to believe that a set of related but independent events have a higher probability of occurring together (Ackert, 2022b). Narratives of failed competitors may lead entrants to fall victim to conjunction fallacy. Consider *Figure 2*, where conjunction fallacy deters new entrant competition. In this case, *Equation 1* demonstrates how new entrants will have a heightened expectation for failure, possibly becoming reluctant to compete. It's worth noting that a good story is required for the conjunction fallacy to take hold effectively (Kahneman, 2013).

Force Three: Suppliers

Blue oceans and beating down new entrants is only the beginning: partners, vendors specifically, also bring external force dynamics. Power can be gained over vendors that have made concessions, by then brandishing a threat of leaving, known as *hostage taking* (Hill, 2016).

Principles of mental accounting can be used to increase the investments made by vendors into the relationship by influencing the total perceived gains or losses from their series of concessions (Ackert, 2022c). Consider *Figure 3*, where suppliers concede and lose power from

mental accounting. *Equation 2* shows how segregated accounting increases the perceived cost for a vendor's incremental concessions. Controlling the dialog with vendors, to promote integrated accounting, will promote investment on their part and reduce their power in the relationship.

Force Four: Buyers

Similar to the vendor forces, customer forces must also be managed. A popular marketing concept has created a strong position for the company in this relationship: the subscriber model.

The subscriber model, if done effectively, can expand the customer base by reducing their perceived upfront costs in some way; the benefit comes by taking advantage of the endowment effect to get regular payments for continued usage of the product or service (Ackert, 2022d). Consider *Figure 4*, where the endowment effect promotes customers making regular premium purchases to service their existing assets and investments. *Calculation 3* demonstrates that, through the endowment effect, customers will require a higher expected utility to consider leaving a product they already own. This phenomenon can be used to justify offsetting a higher relative customer acquisition cost with the expectation of higher recurring service revenue.

Force Five: Substitutions

The last external force to consider is substitutions: the risk of customers finding an alternative solution. The diversification heuristic suggests that consumers are predisposed to trying alternatives when their choices are not mutually exclusive (Ackert, 2022e).

Once the customer has taken ownership of the product or service, the certainty effect helps keep customers disinterested in substitutions. Consider *Figure 5*, where the certainty effect works to discourage the customer from alternatives. *Calculation 4* shows that the expected utility of a substitution must exceed that of the current solution to be considered. This is unlikely if the total cost of a switching prospect is made to be sufficiently high.

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Appendix

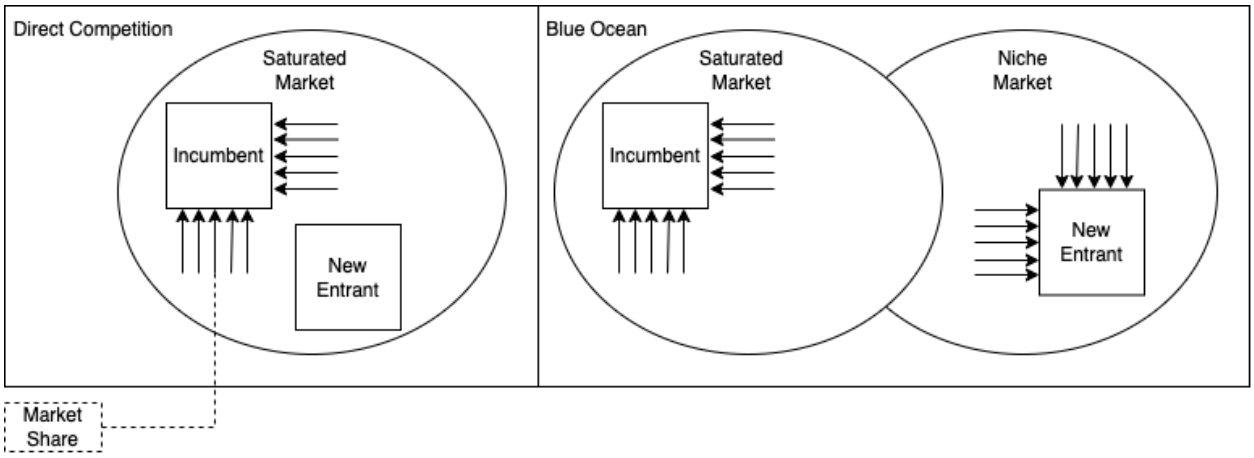

Figure 1*: Blue Ocean Strategy Overcoming the Status Quo Bias Present in Direct Competition Within Existing Markets.*

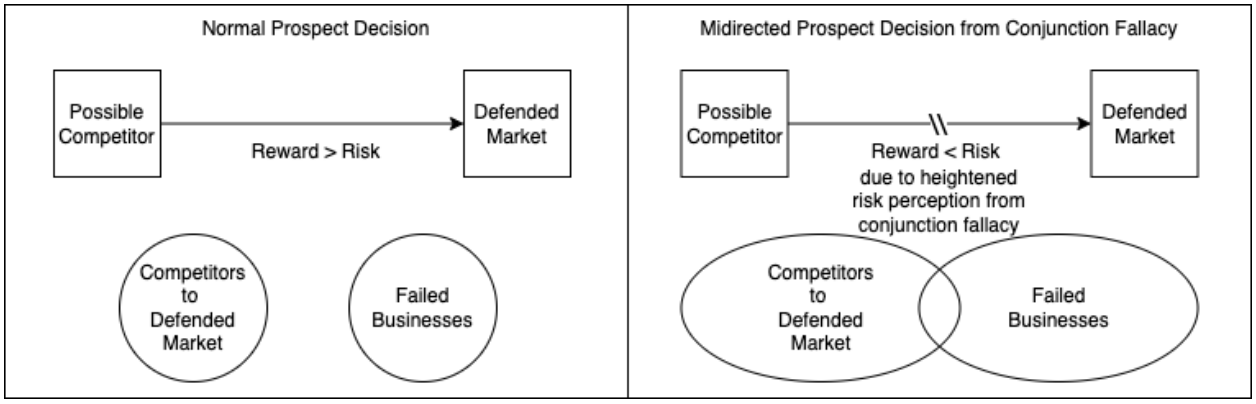

Figure 2*: Conjunction Fallacy Detering New Entrant Due to Increased Perceived Risk.*

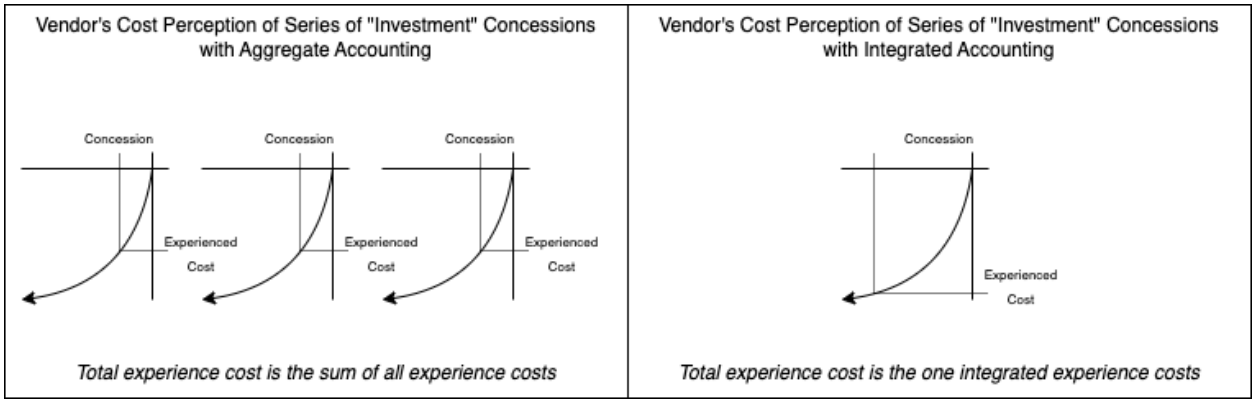

Figure 3*: Sum of Aggregate Accounting Showing Larger Experienced Cost Than Integrated.*

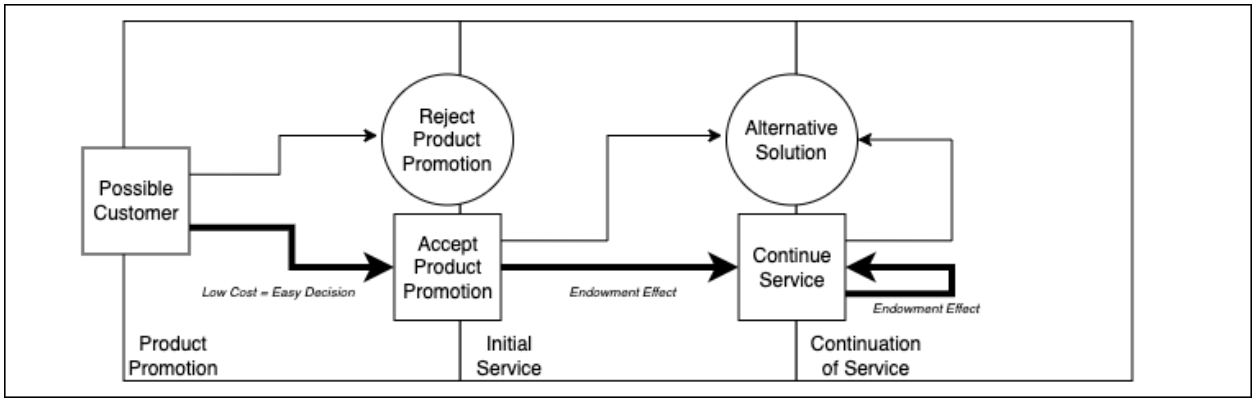

Figure 4*: Customers Acquired with Promotion and then Endowment Effect Promoting Customers Making Regular Premium Service Purchases.*

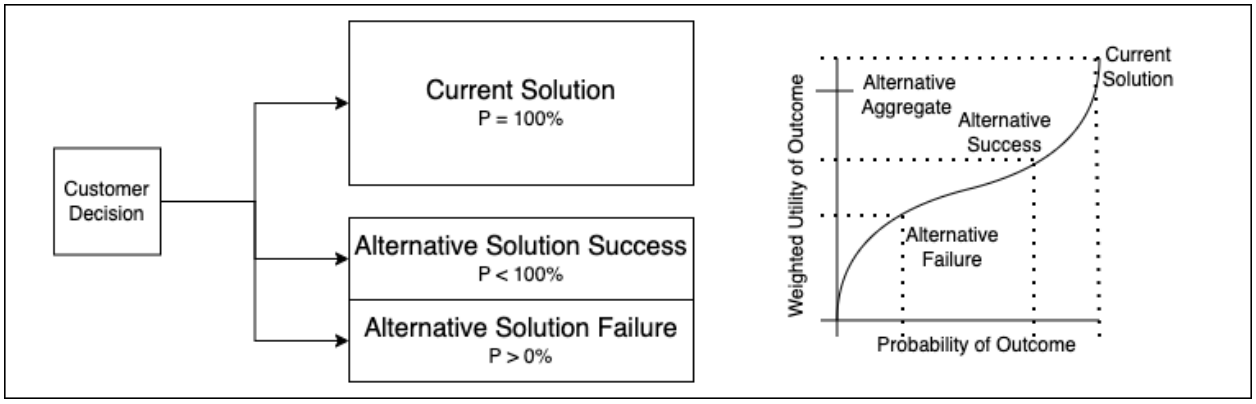

Figure 5*: Certainty Effect Working to Discourage Customers from Alternatives due to Risk Aversion.*

$$
\begin{aligned}
&let\ I := set\ of\ businesses\ that\ are\ identified\ as\ our\ competition \\
&\quad F := set\ of\ businesses\ that\ fail \\
&\quad I' := perceived\ set\ of\ businesses\ that\ identify\ as\ our\ competition \\
&\quad F' := perceived\ set\ of\ businesses\ that\ fail \\
&\\
&Pr[I \cap F] < Pr[I] \\
&\exists I' \mid Pr[I'] > Pr[I]\ and\ I' \subseteq (I \cup F)\ and\ I \subseteq I' \\
&given\ F = (F - I) \cup (F \cap I) \\
&let\ F' = (F - I) \cup (F \cap I') \\
&since\ I \subseteq I' \\
&then\ Pr[I'] > Pr[I] \\
&\quad\ Pr[F \cap I'] > Pr[F \cap I] \\
&\quad\ Pr[(F - I) \cup (F \cap I')] > Pr[(F - I) \cup (F \cap I)] \\
&\quad\ \therefore Pr[F'] > Pr[F]
\end{aligned}
$$

Competition can be influenced to believe that there is an increased probability of business failure, going from $Pr[F]$ to $Pr[F']$, if they are made to believe there is an association between companies that are identified as our competition I and companies that ultimately fail F.

***Calculation 1**: Conjunction Fallacy Being Used Against New Entrants.*

$let\ v := value\ function\ from\ Prospect\ Theory$
$z := wealth\ argument\ to\ value\ function\ from\ Prospect\ Theory$
$V := value\ of\ prospect\ from\ Prospect\ Theory$
$E := expected\ value\ of\ prospect$
$C := set\ of\ many\ concessions\ by\ vendor$
$C_1 := prospect\ of\ many\ integrated\ vendor\ concessions\ C$
$C_2 := prospect\ of\ many\ segregated\ vendor\ concessions\ C$

$consider\ \forall z \mid z > 0,\ |v(-z)| > v(z)$
$and\ consider\ \forall z_i, z_{i+1} \mid z_i \geq 0, z_{i+1} > 0,\ v(z_i) + v(z_{i+1}) > v(z_i + z_{i+1})$
$and\ v(-z_i) + v(-z_{i+1}) < v(-z_i - z_{i+1})$
$then\ given\ the\ following$
$\forall z \in C,\ z < 0$
$|C| > 1$

$$C_1 = \{ z_1 \mid v(z_1) = v(\sum_{z_i \in C} z_i) \}$$

$$C_2 = \{ z_2 \mid v(z_2) = \sum_{z_i \in C} v(z_i) \}$$

$$we\ know \sum_{z_i \in C} v(z_i) < v(\sum_{z_i \in C} z_i)$$

$$V(\{ z_1 \mid v(z_1) = \sum_{z_i \in C} v(z_i) \} < V(\{ z_1 \mid v(z_1) = v(\sum_{z_i \in C} z_i) \})$$

$$\therefore V(C_2) < V(C_1)$$

$So\ we\ can\ see\ that\ when\ vendors\ are\ expected\ to\ make\ concessions\ (z < 0),\ the\ the\ perceived\ total\ cost\ V\ of\ the\ concessions\ is\ lower\ when\ the\ concessions\ are\ integrated\ C_1\ verses\ when\ they\ are\ segregated\ C_2,\ meaning\ that\ vendors\ will\ disfavor\ a\ series\ of\ concessions\ when\ using\ segregated\ accounting.$

***Calculation 2**: Mental Accounting Being Used Against Supplier Forces.*

$let\ v := value\ function\ from\ Prospect\ Theory$
$z := wealth\ argument\ to\ value\ function\ from\ Prospect\ Theory$
$\pi := weighting\ function\ from\ Prospect\ Theory$
$V := value\ of\ prospect\ from\ Prospect\ Theory$
$E := expected\ value\ of\ prospect$
$P_1 := the\ prospect\ of\ staying\ with\ a\ given\ solution$
$P_2 := the\ prospect\ of\ leaving\ for\ a\ competitor's\ solution$
$S_i := set\ of\ success\ outcomes\ for\ prospect\ P_i$
$F_i := set\ of\ failure\ outcomes\ for\ prospect\ P_i$

$given$
$\forall z > 0,\ |v(-z)| > v(z)$
and
$Pr[S_i] + Pr[F_i] = 1$

$so\ for$
$V(P_2) \geq V(P_1)$
$such\ that$
$v(F_i) \leq 0$
$it\ holds\ that$
$\pi(Pr[S_2]) \times v(S_2) + \pi(Pr[F_2]) \times v(F_2) \geq \pi(Pr[S_1]) \times v(S_1)$
$v(S_2) + v(F_2) > v(S_1) \qquad when\ controlling\ for\ certainty\ effect$
$E(S_2) + E(F_2) > E(S_1)$
$\therefore E(P_2) > E(P_1)$

$For\ a\ customer\ to\ consider\ leaving\ their\ current\ solution,\ P_1,\ for\ an\ alternative\ solution,\ P_2,\ it\ can\ be\ seen\ that\ the\ expected\ wealth\ of\ the\ alternative\ prospect\ must\ exceed\ that\ of\ the\ current\ prospect.\ Otherwise\ the\ perceived\ value\ will\ be\ insufficient\ to\ change.\ This\ is\ due\ to\ loss\ aversion\ through\ the\ endowment\ effect.$

Calculation 3*: Endowment Effect Being Used Against Buyer Forces.*

$$
\begin{aligned}
&\text{let } v := \textit{value function from Prospect Theory}\\
&\quad z := \textit{wealth argument to value function from Prospect Theory}\\
&\quad \pi := \textit{weighting function from Prospect Theory}\\
&\quad V := \textit{value of prospect from Prospect Theory}\\
&\quad E := \textit{expected value of prospect}\\
&\quad P_1 := \textit{the prospect of staying with a given solution}\\
&\quad P_2 := \textit{the prospect of leaving for a competitor's solution}\\
&\quad S_i := \textit{set of success outcomes for prospect } P_i\\
&\quad F_i := \textit{set of failure outcomes for prospect } P_i
\end{aligned}
$$

$$
\begin{aligned}
&\textit{given a negligible probability of failure for } P_1\\
&\qquad Pr[S_1] = \lim_{x \to 1} x\\
&\qquad Pr[F_1] = \lim_{x \to 0} x\\
&\textit{and given some risk for the prospect of change } P_2\\
&\qquad Pr[S_2] < Pr[S_1]\\
&\qquad Pr[F_2] > Pr[F_1]\\
&\textit{since } w'(Pr[S_1]) > 0 \ (\textit{past inflection point})\\
&\qquad \pi(Pr[S_1]) > \pi(Pr[S_2]) + \pi(Pr[F_1])
\end{aligned}
$$

$$
\begin{aligned}
&\textit{so for } V(P_2) \geq V(P_1)\\
&\qquad \pi(Pr[S_2]) \times v(S_2) + \pi(Pr[F_2]) \times v(F_2) \geq \pi(Pr[S_1]) \times v(S_1)\\
&\qquad v(S_2) + v(F_2) > z(S_1)\\
&\qquad E(S_2) + E(F_2) > E(S_1) \textit{ given endowment theory holds}\\
&\qquad \therefore E(P_2) > E(P_1)
\end{aligned}
$$

For a customer to consider leaving their current solution, P_1, for an alternative solution, P_2, it can be seen that the expected wealth of the alternative prospect must exceed that of the current prospect. Otherwise the perceived value will be insufficient to change. This is due to risk aversion through the certainty effect.

***Calculation 4**: Certainty Effect Being Used Against Substitution Forces.*