

## Research Summary for Document

Swan theory is an extremely important concept to all industries coined by an NYU Risk Engineer professor Nassim Taleb. There are 3 main types of swan events: black, grey, and white swans. All of these swan events do affect the economy as the stock market becomes volatile and unpredictable. The most unpredictable is the black swan events as this event usually consists of natural disasters through millenniums ago it was financial or social events. Grey swan events are predictable but unpredictable in the sense of after the fact consequences. Lastly, white swan events are predictable in all aspects. It is also to have been said that swan events can tie into human illusions and if we as humans can stay away from falling into this said mindset, we as a society can properly mitigate the consequence. Swan events, of course, have a detrimental effect on our society as this gets into the next part of my research I have done, financials during black swans.

Financials during black swan events can get very technical in terms of understanding statistics. In short concise language, we can understand this simply by comparing the bid volume which is the selling volume to the ask volume which is buying volumes or ask volumes. By understanding the differences and effects of both of these, we then can forecast and predict whether the price will move up or down. In connection with stock prices, there are also many ways people can manipulate the system; either by “hype and dump” or trading manipulations.

Market manipulations are ways traders deliberately disrupt the flow of the market in that person’s favor. For the past decades, the U.S. Securities and Exchange Commission (SEC) has been hunting down and charging traders for their fraudulent scheme. There are so many methods to list but essentially what traders do is by boosting in false statements about their stock, the buyer buys it and the trader sells it quickly, usually causing just a little over 5% of the loss from the investor.

## Research

### Extreme Value Theory

- Market risk and investors care about negative price displacement
- Negative Price Displacement: the percent decrease in prices over a defined period
- We need to focus on price reductions, not price increases
  - Because that’s what risk managers look into
  - Price increase always happens but price reduction happens very limited
- This kind of theory is only related to publicly traded companies not startups

### Extreme Prices

- We need to look at bid volumes when calculating the **price displacement**
  - This is a scalar quantity
  - B: “bid volume”
  - A: “ask volume”
    - B = potential to reduce prices
    - B = highest current price
    - B = selling volumes
    - A = potential to increase prices
    - A = lowest current price
    - A = buying volumes
  - More buying “A” than selling “B” → pushes asset up in price
  - More selling “B” than buying “A” → pushes asset down the price
- After calculating the price displacement we have to consider other aspects like when the bidder doesn’t ask or buy at the same prices → we add an “n” to the equation

### Market Manipulations Types

- “Pump and dump” or “Hype and dump”
  - Boosting the price of the stock through recommendations that are based on false and exaggerated statements
  - Usually, traders use Telegram or Discord to send messages
  - Promoters could be friends or anyone starts to coordinate rumors which increases interest and as a result increases the price of the stock
  - Promoter sells the stock at a high price and quickly sell (the person who bought it) the share and the price drops
  - New investors lose money
  - People who buy into the hype and dump scam lose about 5.25% of their investment in 1-2 days
- Trading Manipulations
  - Churning
  - Wash trading
    - an investor simultaneously sells and buys the same financial instruments to create misleading, artificial activity in the marketplace.
    - an investor will place a sell order, then place a buy order to buy from himself, or vice versa which means it was bought and sold by the same beneficial ownership of the stock
  - Layering
    - A trader that makes and then cancels the order in hopes of purchasing stocks at the lowest price
  - Arbitrary quotes

## Changes to Document

### Measure of Success

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#### Qualitative

- Qualitative Key Performance Indicator (KPI): process or business decision
- How do customers or individuals describe the NYE Livestream experience?
- What kind of interactive games do customers respond well to?

#### Quantitative

- Purchases of flight tickets
- Clickthrough rate on websites
- Measure partnerships investment using Return on Investment (ROI) performance measure
- Interactivity through likes, shares, comments, and clicks
- Total viewers of the live stream
- Keep an eye on the audience growth rate
- Time spent on the games (important for consumer attention)
- Number of times an object has been picked up
- Discrete KPI: ratings, complaints
- Continuous KPI: measures over time (partnerships, revenue growth, etc.)

#### Broadly

- 11 Types of Key Performance Indicators (KPI)

#### Precisely

- Quantitative Indicators: discrete and continuous (over a time)

Let's assume over 10 million people have interacted with the live stream on New Year's Eve based primarily in North America and Western Europe. Based on the unique nature of our presentation (New Year's Eve), it is estimated to have 2% (200,000) of users continued [90-9-1 – 1% deeply participate in internet culture – the rule of thumb but NYE is a special occasion]. Of that 2% (200,000), users would make a purchase.

- Qualitative Indicators: survey data

Let's assume before the release of our New Year's Eve Livestream experience we will put out a survey that will reach over 10 million people about what they expect in their next experience. About 10%- 15% of people will respond. After the NYE experience, we will survey the users again. Based on the results, about 1-2% of respondents, we can use the Net Promoter Score (NPS) to improve our next experience.

- Leading Indicators: customer service (support), number of interactive games

Let's assume about 1,000 people were in the line of the queue for support. The faster you get to them, the more they will interact and make purchases at the end.

- Lagging Indicators: total number of glitches, amount of cookies used, smoothness in a game (freezing or any other incidents)

Let's assume about 1,000 game users experience a laginess in-game out of 10 million people. In a game, we will have deluxe upgrades and if 1,000 users experience a laginess, we will expect to lose \$2,000/ \$20 million.

- Input Indicators: staff time, equipment used to develop, the budget allocated

Let's assume we have an investment of \$100,000 to develop this game. \$45,000 for gaming softwares, \$30,000 for insurance/legal, \$15,000 for buffer fund, \$10,000 for staff.

- Process Indicators: new implementation time (whether it is customer complaints or customer experience)

Let's assume after researching, we have 5 deluxe upgrades implemented into the game. After the initial survey to the game users couple of months before it's been released, they wanted 4 additional deluxe upgrades. These upgrades won't happen overnight rather about 1 deluxe upgrade in 2-3 weeks.

- Output Indicators: clickthrough rates, profits, purchases of flight tickets, partnerships ROI, viewership

Let's assume we invested \$100,000 into this game. We predict that we will have a return on investments to be 6% at \$6,000. We estimate after the Jan 2 when NYE experience, The Verge, concludes, to have attracted about 8 partners (broadcasting news, travel agency, etc.)

- Practical Indicators: exploring competitors process and experience (live stream companies)

Let's assume that after the NYE Livestream experience, about 8 partners whether local or international has shown interest in your product. The partners want to collaborate with you and hopefully can make the next experience together. It's a benefit for both parties, as each party can share future revenue on the shared project. It is estimated that with partnerships, it can increase your overall revenue by 28% (higher established companies) and 18% (for starters).

- Directional Indicators: evaluating the time of day engagement, which partnerships live stream experience has better viewership, where are the industries moving to

Let's assume

- Actionable Indicators: commitment and follow-through in said changes or processes within specified time frames

Let's assume as part of our development, we want to iterate the game every week for consistency and efficiency. Through these iterations, every team should be ready to present their changes, add ons, or overall business in general. We these iterations, we predict to increase our asset turnover ratio by 15%.

- Financial Indicators: asset turnover ratio, net profit, etc.

Let's assume our initial asset turnover ratio to be 10% of \$100,000 in the first 1-3 years. After 1-3 years, we predict to have an asset turnover ratio to be 15-20%.

## **Misc**

### **Go-to-Market Strategy**

(1) Build an immersive haptic New Year's live stream experience that celebrates the viewer's journey via VR.

(2) Attract eyeball traffic to increase clickthrough rate.

With the use of ads:

- Facebook Ads: clickthrough rate of about 1.91%

The best time for postings is from 1-4 PM (during work hours), weekends, and usually use the desktop when viewing Facebook.

- Instagram Ads: clickthrough rate of about 0.88%

Best time for postings is from 11- 1 PM (during lunchtime), 7-9 PM (after work), Wednesdays gets the highest viewings, mobile phone

- LinkedIn Ads: clickthrough rate of about 0.22%

Best time for postings is from 10-11 AM (during work hours), weekends and some work hours because of recruitment

- Twitter Ads: clickthrough rate of about 0.86%

Best time for postings is from 12- 1 PM (during lunch hours), weekends are the worst times to post, posting during lunch each day would increase engagements

(3) Inspire celebrating the human cycle via different islands; individuals feel like going on an adventure- play through interactive games.

(4) Educate individuals about the annual celebration of life. join in worldwide New Year's traditions via the torus, and review past/future goals.

(5) As we approach a New Year, individuals strive to finish the game-feel experience as a completion of the annual cycle and get ready to face the new year.

(6) Increase revenue (primarily for travel agencies) for all industries. This experience will have different effects on individuals. The average partnership revenue growth rate is estimated to be 17.5%.

[According to current conditions, any projections of income from travel agency bookings should be examined closely.]

(7) Evolve and transform VR live stream experience for more B2B business.

Sales Funnel

|Awareness|

Word of mouth

Partnerships with video stream & broadcast companies
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|Interest|

Novelty of VR
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Immersive worldwide New Year's tradition
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|Action|

Interaction in mini-games
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Educates global New Year's tradition
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|Commitment|

Cost per impression= (Total cost of campaign) / (Total number of impressions / 1000) = \$40,000 / 4,000 x 1,000 = 4 / 400 = 1 / 100
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Successful partnerships
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## Return on Investment

- Investment: \$75K+ Per Site

This New Year's VR live stream experience will educate and entertain. Different haptics available through our virtual reality programming will bring our marketing to fruition. It increases interactivity, viewership in all parts of the world, and minimizes cultural differences in the celebration of the New Year. We will need an estimated 13 weeks to develop a product that is ready for implementation and \$100,000 in financial backing.

With an average household income of the average viewing audience is (\$60,000- \$70,000; average household income for the United States) of which approximately 2.6% (\$1,700) as the

discretionary income. With this discretionary income, we would be able to predict our revenue potential.

## Revenue Potential

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- *Monthly Recurring Revenue* = (Average monthly subscription value per customer) × (Number of customers) = (\$2) × (1,000) = \$2,000
- *Committed Monthly Recurring Revenue* = MRR + Signed Contracts – Expected Churn (expected change) = \$2,000 + 8 - 30% = \$2,000 + 8 - 2.8 = \$2,000 + 5 (\$2,500) = \$2,000 + \$12,500 = \$14,500
- *Average Revenue per User* = Total Revenue / Customer Count = [\$14,500 (12)] - \$100,000 / 900,000 = 0.082 = this is a low ARPC  
If ARPU is small, you need a huge amount of customers. If ARPU is big, you can manage with less.
- Factors that increase revenue potential
  - Email marketing
  - Content marketing
  - Giveaways during the interactive game - the points you earned can be an opportunity to add a special feature that increases a longer duration on the live stream experience