

# Individual Capstone Assignment

MQM Marketing 552Q: Market Intelligence  
Professor Allison J.B. Chaney

## Submission Requirements

Please prepare a report submitted as a PDF document. The report should answer all the following questions and mirror the numbering system used below under the deliverables section.

## Honor Code

You may not consult your teammates or anyone except the TAs and Professor Chaney. You may use the internet for general questions (e.g., related to Python), but you may not 1) post on a forum (or similar) asking for help or 2) use answers that others have posted for this assignment. If you accidentally encounter posted answers, please report them immediately.

## Background

Athena Softworks, Inc. is a video game developer and publisher. They specialize in premium role-playing games (RPGs) for PC play and have had published eight games to date. Athena distributes its games exclusively using Steam, the world's largest distributor of PC games, which takes up 75% of the global market share. It is early 2020 and Athena is considering acquiring a new game title and there are three candidate games.

You are a part of the marketing analytics team at Athena, but you have not been involved in the exploration of acquiring a new game title until recently. Another group of individuals within your team has owned the process of gathering and analyzing data for this decision, but your manager has tasked you with an independent analysis to safeguard against mistakes. You need to provide recommendations on three key aspects of this decision process.

## Candidate Games

**Warrior Guild** is a multiplayer battle arena game that can be played in duel, team (groups of 2, 3, 5, or 7), or guild (groups of 12) modes. Players compete as one of seven classes: Vanguard, Mage, Shapeshifter, Marksman, Healer, Rogue, and Berserker.

**Seraph Guardians** is an immersive single player RPG with extensive strategy and puzzle elements. Players work to discover the mythology of the Seraph through strategy, problem-solving, and combat. There is more than one way to accomplish every goal, but not all methods are equally efficient.

**Evercrest** may be played in single player or multiplayer modes as players work to save the titular land. Players should prepare to be met with challenges that require upmost creativity as they explore this fanciful world, encountering compelling characters and narrative.



## Financial Details

In all instances, Athena would pay 5% in royalties (on gross) to the original developer and spend \$7 million in fixed costs to acquire and market the game; each game would have unique additional costs to finalize development (\$6 million for Evercrest, \$5.5 million for Seraph Guardians, and \$5 million for Warrior Guild). Budget constraints dictate that only one game may be acquired. Any game not acquired by Athena may be released by another publisher.

Steam is digital video game distribution service which holds about 75% of the PC game global market share with approximately 18 million users. For games sold on Steam, parent company Valve takes 30% of gross sales up to the first \$10 million. For all sales between \$10 million and \$50 million, Valve takes 25%. For every sale after the initial \$50 million, Valve takes 20%. You may assume that the majority of games sales occur within the first year of release and that all games sold by Athena Softworks are sold via Steam.

## Resources

- SuperData 2019 Year in Review
- Newzoo's Gamer Segmentation
- Quantic Fountry's Gamer Motivation Model
- Quantic Fountry's Gamer Segmentation
- Gamasutra's Personality And Play Styles: A Unified Model
- Survey Data

## Deliverables

1. [5pt] There are three key decisions to make in conjunction:
  - Which game should Athena pursue, if any?
  - How should the game be priced?
  - How should Athena position this game?Before performing any analysis, **define the action alternatives and action standards for the first two decisions.**
2. [5pt] Using any of the resources from the class or the resources included with this assignment (but no external sources), determine the following.
  - a. What is the market size for the types of games Athena sells in 2019? How did you determine this number and which resources did you use?
  - b. What do you project the market size to be in 2020, ignoring COVID-19? Why?
  - c. How would you expect COVID-19 to impact this market? (No analysis, just a thoughtful response.) Moving forward, you may ignore any effects of COVID-19 on the market.
3. [20pt] Your coworkers conducted a survey conducted with a sample of prior customers. The survey contained a series of 40 statements and participants rated these on a 7-point Likert scale; the survey statements may be found on page 4. As you investigate this data, may use any of the provided resources as a guide on substantive content (e.g., if you are not familiar with the video game industry), but note that the results may not map cleanly to these secondary resources.
  - a. To identify potential segments in the market, first perform factor analysis. Include the factor loadings in your report. Name and interpret the factors. Identify the most relevant survey statements for each factor.

- 
- 
- 
- b. Next, perform cluster analysis using K-means clustering to identify segments. Include the cluster centers in your report. Name and interpret these segments based on these cluster centers. Identify the most relevant factors for each segment.
- c. Finally, use cross tabulation and regression analysis to investigate the relationships between the segments and various demographic attributes (gender, age, income, location). Identify any significant relationships **and** describe each of the resulting segments in terms of their demographic attributes (% female, average age, and average income) regardless of statistical significance.
4. [25pt] Next, investigate another part of the survey: Gabor Granger responses for each game. Each respondent was randomly presented with one of the three games and the survey identified the maximum price point at which each respondent would “probably purchase” the presented game.
  - a. Some data is missing here. Provide details on your approach to dealing with this problem.
  - b. For each game, show the two Gabor Granger plots: percent customers willing to pay and predicted revenue as a function of price. What is the ideal price point for each game?
  - c. Use linear regression to predict which segment is most interested in each game (willing to pay the most). Which segments are most and least interested in each game?
  - d. Assume that only 30% of respondents who indicated they would “probably purchase” at a given price will actually do so within the first year. Also assume that the survey sample was representative of the approximately 10 million active Steam customers who have expressed interests in similar types of games. What would be the gross and net revenues for each game in the first year?
5. [10pt] The final portion of the part of the survey asked respondents to rank six games with 1 being the most preferred choice. The six games include the three candidate games and three games that competitors have already announced will be on the market.
  - a. Assuming all the games are priced equally, that the surveyed customers are representative of the market, and that each customer purchases only one game, calculate the percentage of the market share Athena would have under each of the action alternatives.
  - b. Discuss which of the assumptions above you might want to change, and in what ways, to generate more realistic estimates of market share under each of the action alternatives.  
**Extra Credit:** modify your simulation to actually change some or all of the assumptions you discuss and share the results.
6. [10pt] Provide your final recommendations for each of the key decisions (part 1). As part of your recommendation on positioning, indicate whether you recommend targeting particular segment(s) or a non-targeting strategy. If you recommend a targeted approach, indicate which segment(s) should be targeted and justify your response. If you recommend a non-targeted approach, similarly justify your response.

shorthand	statement
imp.challenge	Importance: Taking on difficult challenges that may take many tries to succeed
imp.unlocks	Importance: Getting every possible star / trophy / unlock in a game
imp.customize	Importance: Having many customization colors, styles, skins, and options
imp.difficulty	Importance: Playing the game at the highest difficulty level
imp.characters	Importance: Characters with interesting back-stories and personalities
imp.storyline	Importance: An elaborate storyline
imp.mastery	Importance: Taking the time to practice and master a game
imp.backstory	Importance: Getting to know all the main characters and their backstories
imp.dominate	Importance: Dominating other players
imp.completion	Importance: Completing all possible missions and achievements in a game
imp.wealth	Importance: Accumulating large amounts of in-game resources / currency
imp.fantasy	Importance: Pretending that I am someone / somewhere else
imp.items	Importance: Acquiring powerful weapons and artifacts
imp.power	Importance: Becoming as powerful as possible
imp.offbeat	Importance: Discovering offbeat or unconventional ways to play the game
imp.collect	Importance: Making an effort to get every collectible item in the game
enj.excitement	Enjoyment: Gameplay with constant action and excitement
enj.destruction	Enjoyment: Being an agent of chaos and destruction
enj.others	Enjoyment: Grouping up with other players
enj.react	Enjoyment: Gameplay that requires quick reaction times
enj.duels	Enjoyment: Going up against other players in duels or matches
enj.strategy	Enjoyment: Gameplay that requires long-term planning and strategy
enj.roleplay	Enjoyment: Taking on the role of another character / person
enj.competition	Enjoyment: Competing with other players
enj.decisions	Enjoyment: Gameplay that requires careful decision-making
enj.common.goal	Enjoyment: Working towards a common goal with other players
enj.planning	Enjoyment: Gameplay that requires a lot of thinking and planning
enj.immersion	Enjoyment: Being immersed in another world / place
enj.helping	Enjoyment: Helping other players
enj.fast	Enjoyment: Gameplay that is fast-paced and intense
enj.guns	Enjoyment: Using guns and explosives
enj.gore	Enjoyment: Gameplay with lots of blood and gore
enj.blow.up	Enjoyment: Blowing things up
freq.explore	Frequency: Explore the game world just for the sake of exploring it
freq.experiment	Frequency: Experimenting with objects in the world just to see what happens
freq.study	Frequency: Study other players to improve my own gameplay
freq.char.creation	Frequency: Put a lot of thought and effort into the character creation process
freq.stats	Frequency: Primarily focused on increasing your stats/level
freq.customize	Frequency: Put considerable time into customizing my characters / cities / spaceships
freq.test.world	Frequency: Try out many different things to test what the game world lets me do