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Business Analytics Mobile Game

Duke Wong (Wrainbo)

Wrainbo's Magitech is a mobile fantasy game that helps players learn business management and data-driven decision making skills. By casting "business spells" and analyzing "crystal ball data", players will compete with opponents to maximize profits through various business activities, from operations, marketing, to financial management. Featuring immersive gameplay, bite-sized play sessions for both single- and multi-player, and rigorous learning both through simulation and embedded library, Magitech makes adult learning much more engaging and effective.

Game Design Wrainbo's Magitech is motivated by the huge skill gap in business analytics – 1.5 million shortage in US alone by 2018 (Lund, Manyika, Nyquist, Mendonca, & Ramaswamy, 2013). Because business decisions are based both on intuitions and scientific analysis, we want to create a world where players could weave both magic and technology power to compete with others in marketplace. Magitech aims to combine the fun of *Candy Crush* and *Angry Birds* with the rigor of Duke University and McKinsey business analytics. There are three main features to highlight:

- Fantasy fun: Magitech is the first fantasy business game where players could produce, trade, and cast spells to compete with computer AI and other players (Figure 1). Players could immerse in this world to learn and hone analytics skills.
- Dynamic chart: Magitech's chart UI displays relevant analytics based on the decision context players are in (Figure 2), and the chart change dynamically based on internal and external factors. Players will have ample opportunities to solve problems using data analytics.
- Bite-sized levels: Each level or multiplayer session is designed to last around 5-10 minutes (Figure 3). This is different from traditional business simulation games where each meaningful session typically lasts over 30 minutes. The bite-sized levels will suit modern lifestyle well.



Figure 1. Magitech main UI screenshot



Figure 2. Magitech analytics UI screenshot



Figure 3. Magitech bite-sized level

map

Learning Design In Magitech, players will learn the business fundamentals in 20-30 single-player levels and have continuous opportunities to practice via multiplayer gameplay and future level expansions. The learning includes three business foundation fields – Economics, Statistics, Accounting – as well as three applied functions – Marketing, Operations, and Finance. There are three unique features of Magitech learning to highlight:

- Interleaved subjects: Players will learn about various business concepts in an interleaved way, which is proven to be more effective than clustering by topic (Rohrer & Taylor, 2007). For example, in the game, when learning how to conduct promotion to boost sales, players will also be introduced to linear regression technique.
- Spaced learning: Magitech is designed to revisit certain concepts in a spaced manner. For example, while price elasticity may be introduced in the first 10 levels, it will re-appear as a key concept to solve the problem in later levels. Studies have shown that massed practice (doing the same thing repeatedly) is inferior to spaced practice for learning retention (Cepeda, Pashler, Vul, Wixted, & Rohrer, 2006).
- Personalized feedback: Players will have multiple opportunities to receive feedback in Magitech-one is through the trading results and report. The other is through a personal library that will highlight player's strength and suggested improvement areas. Studies have shown that providing feedback to both correct and incorrect choices will lead to better retention (Butler, Karpicke, & Roediger, 2008).

Important Review Notes

- Video footage: <https://www.youtube.com/watch?v=8rONN5ztS8E>
- Android demo: <https://play.google.com/apps/testing/com.wrainbo.magitech>
- iOS demo: available upon request via Apple TestFlight app
- Web demo (PC and Mac; not compatible with mobile browsers): www.wrainbo.com/demo/index.html

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- Chief Designer: Duke Wong
- Level Designer: Naresh Panda
- UX Designer: Hui Liu
- Artist: Cystem Chen
- Programmer: Paul Hsin

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