

I2P Competition

EPICS Lafayette Adult Resource Academy (LARA)

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Executive Summary

The Lafayette Adult Resource Academy (LARA) EPICS team is devoted to delivering practical solutions for improving the quality and efficiency of education among 3 – 10 year old children. Particularly, the LARA team has developed an educational tool, Merlin's Magical Castle (MMC). MMC's core functionality is implemented using Radio Frequency Identification (RFID), Microsoft .NET framework, and text-to-speech technologies. The MMC design facilitates the customizable development of entertaining games, which can be easily integrated with the learning environment, making the educational journey of young children more exciting and unique. LARA believes that MMC will engender attention and curiosity, which will ultimately educate children while they play with MMC.

In the process of developing this educational tool, LARA has identified a significant market opportunity as well as a developed technology ideally suited for entry into the toys and games market. The compound annual growth rate of the United States toys and games market is forecast to be 2.3% within the period of 2003 – 2008, with the strongest growth of 3.5% in 2008. In 2008, the U.S. toys and games market is forecasted to have a value of \$33.8 billion; an increase of 11.8% since 2003.

LARA is pioneering the frontier of integrating RFID technology with an entertaining educational tool (such as MMC), therefore the team has a competitive advantage in this new market. In order to delve into the educational toys and games market more aggressively, LARA has planned to license MMC to the Walt Disney Company or another specialized retailer. The team could also sell the MMC prototype/concept to toy manufacturers through either a lump sum or via royalties per unit.

Product Description

Merlin's Magical Castle (MMC) is designed to be a fun way to supplement classroom education. Whether in school or at home, children can find learning exciting with this tool. A friendly wizard greets the children at the start of the computer game and gives them various options of what they can do. There is an assortment of games a player can choose from, such as: Trivia Game, Scavenger Hunt, Fill in the Blanks, Category Quest, etc.

These games involve interaction between the toys of interest and the computer, which can identify the scanned toy and give the children feedback as they play. For example, in the *Trivia* game, Merlin gives the player a hint about the toy that he is looking for. If the player scans the correct toy, Merlin cheers, if the toy that was brought to Merlin was incorrect, he'll offer another hint. Category Quest, presents the player with a toy and asks them to find other toys that are similar. This game involves abstract thinking – one has to be able to identify the similarity between a dog and a cat because both have four legs.

This interactive environment will encourage children to learn in a positive atmosphere while having fun. New games may be programmed and integrated into the MMC package to allow for more advanced activities, multiple toys, etc. The games may also be bilingual, in order to cater to children for whom English is not a first language. This tool would be most appropriate for children ages 3 – 10, and may help them improve their skills in areas such as vocabulary and spelling. While designed to be an educational supplement, this technology includes activities that will make learning exciting.

The underlying technology of MMC is Radio Frequency Identification (RFID). RFID consists of three components: an antenna, a transceiver (scanner), and transponders (RFID tags). The antenna releases radio signals, which activate a RFID tag. The tag, in turn, sends data back to the antenna. The antenna acts as an intermediary connecting the tag and the transceiver.

RFID technology first surfaced in the 1980's as a type of tracking device used in shipping. Since then, RFID tags have been used in grocery stores as a way of keeping track of products and on toll roads to allow vehicles with valid RFID tags to pay without stopping. Today, RFID still has an enormous potential.

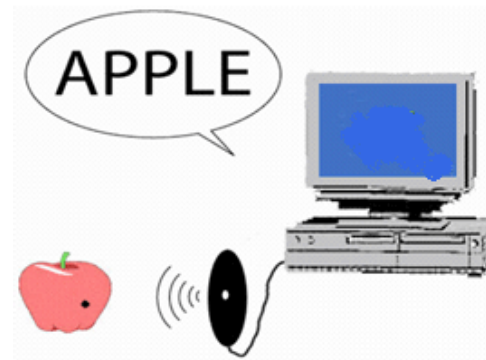


Figure 1: Overall integration of MMC with RFID Technology

MMC comes equipped with computer software, a scanner, and electronic tags (shown as a black dot on the apple in **Figure 1**), which are embedded into appropriate objects. In the current version of MMC, tags are implanted in toys. When this toy is brought near the antenna, the tag is scanned and its identification number is sent to the computer. The computer will then identify the toy. In order to meet different educational needs, the electronic tags can be embedded into objects other than toys, and the software can be customized accordingly.

Market Analysis

Market Overview:

Despite the fact that educational toys once accounted for only approximately 20% of the overall U.S toys industry, they have begun to gain popularity. Part of that strength came from computer-based toys such as the Talking Whiz Kid Genius and the Little Smart Alphabet Desk. Today, toy makers and retailers are interested in educational toys as their profit margins tend to be 50% compared to about 30% profit margins of conventional toys.

Market Size & Growth:

MMC will have a broad market. Particularly, it will encompass the education industry. It will also target the entire population of children ranging from 3 – 10 years old.

This market is growing rapidly. Preschool toy sales grew 14% in 2001, significantly outpacing the 1.7% growth experienced by the entire U.S. toy industry. Experts predicted that preschool product sales would grow. This would be true if for no other reason, then the fact that the number of children in the U.S. is growing. In 2001, the U.S Department of Health and Human Services reported approximately 4 million births. Furthermore, according to the 2002 U.S. toy industry review made by the NDP Group (a research company that has been helping companies understand product movement and consumer behavior since 1967), sales of preschool toys reflected an emerging trend of educational products that increase a child's ability to learn while at play.

Forecast Value:

In 2008, the U.S. toys and games market is forecasted to have a value of \$33.8 billion. This is an increase of 11.8% since 2003. The compound annual growth rate of the market in the period 2003 – 2008 is forecasted to be 2.3% while the strongest growth is predicted for 2008 when the market is forecasted to grow by 3.5%.

Competitive Analysis

Competitors:

LARA has planned to license MMC to the Walt Disney Company or another specialized retailer as well as sell the MMC idea to well-established toy manufacturers like Mattel and Hasbro. Therefore, LARA's competitors would be other toy manufacturers like JAKKS Pacific, MGA Entertainment etc or designers who might jump into producing similar products.

Competitive advantage:

The concept of integrating RFID technology with the MMC concept is novel. Hence, LARA is a pioneer in this market, and therefore, LARA is confident that being the first to launch MMC will give LARA a competitive advantage in the market. Also, LARA is currently looking into patenting MMC. The RFID technology is now considered a standard of industry and thus, is not considered prior art. There are several patents for similar educational product; however a preliminary analysis of the claims showed no significant dominating intellectual property. This will give LARA a yet greater competitive advantage when bringing MMC into the market.

Barriers to entry:

LARA's primary barrier to entry would be the lack of reputation in the market. It would be difficult for LARA to obtain contracts with large corporations such as the Walt Disney Company, Mattel, and Hasbro. Also, as LARA is new to the industry and the business world, LARA has not yet had the opportunity to prove and demonstrate its ability to well-established companies and toy manufacturers. This is an obstacle that LARA has to overcome when entering the market.

Marketing Strategy

Overview:

LARA feels that our primary customers are (1) well-established entertainment companies e.g. Walt Disney, and (2) well-established toy manufacturers e.g. Mattel and Hasbro. As such, our marketing strategy is to first license MMC to Walt Disney or another significant retailer, and secondly to sell the MMC prototype/concept to toy manufacturers by either getting a one time lump sum or by getting a percentage cut for each unit sold by toy manufacturers.

Customer Analysis:

Walt Disney is the leading entertainment company in the field of cartoons, animations, toys etc for young children. Walt Disney has become LARA's primary customer because, firstly, its primary market segment is young children. Secondly, it is world renowned as the symbol of entertainment and therefore, its market is vast. Furthermore, Walt Disney has a sufficient amount of resources in terms of man power and monetary funds to improve on all aspects of the MMC – the graphical user interface, the talking wizard agent, and the software applications. Walt Disney's reputation also resolves any packaging and marketing issues of the project.

Similar to Walt Disney, well-known toy manufacturers like Mattel and Hasbro also possess the resources and man power to manufacture MMC in mass quantities and at a very low cost.