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Arcot Desai NARASIMHALU

Singapore Management University, desai@smu.edu.sg

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Citation

Re-engineering XID Technologies – From Enterprise to Consumer Markets

Arcot Desai Narasimhalu
School of Information Systems
Singapore Management University

Abstract

Several studies have addressed the process of taking ideas to markets but few have shared the experiences of start up companies that have reexamined their product strategies and repositioned their products and services for better revenues and profits. This paper reports the efforts related to repositioning of XID technologies, a start up company, into new markets while continuing to exploit its core technical competencies.

1. Introduction

A number of authors have written about innovation methodologies [1, 2, 4, 5, and 6]. Some authors have written about managing the process from ideas to commercialization [3 and 7]. They deal with topics such as the process of technology commercialization, identifying valuable opportunities, incubating to define commercializability, understanding customer adoption, promoting adoption, mobilizing complementary assets for delivery and appropriating the returns to innovation. However, little has been written about how start up companies facing market challenges are reengineered or repositioned to offer products that use the same technological competencies but offer different products aimed at newer markets. This paper is about reengineering a start up company by repurposing its core competencies for new markets.

XID technologies (XID for short) is a start up company (http://www.xidtech.com) set up in 2003 using face synthesis technology developed at Kent Ridge Digital Labs. XID is a technology leader amongst biometric system vendors offering face recognition based solutions. Their award winning face synthesis technology differentiated them from the rest of the pack. A paper on building the XID's business was reported in 2006 [5].

Section 2 of this paper explains the challenges faced by XID when it operated in the biometrics markets using face identification as the core technology. The approach to reengineering XID is discussed in section 3. Section 4 presents a summary of the new opportunities now available to XID. The summary of the experiences is described in section 5.

2. Challenges faced

Several high technology companies such as XID start up with a perceived market opportunity. Market forces channel their products and services into directions that they may not have initially thought about. XID faced the following challenges despite possessing multiple and market relevant product offerings.

XID was selling biometric solutions using face synthesis as the differentiator. Biometrics is often perceived to be a large market. On closer examination one realizes that the markets while big are highly fragmented across geographies. Biometrics market is also crowded. There are several alternative technologies including finger print, hand print, retina, and voice recognition that meet the requirements of the biometrics markets.

Markets serviced by biometrics have seen several false starts, unkept promises and marketing hype. Hence the trust customers placed on biometric solutions is relatively low. Further, given so many alternative types of biometric technologies, customers are often confused about the choices that they had to make. Elaborate experiments are required to assess the relative merits of not only the offerings within a specific type of biometric technology but across all alternative types of biometric technologies. This made the markets certainly confused.

The largest customer base for biometrics is government organizations whether at county, state or national level. These organizations often take long time to make decisions. This surely results in several rounds of meetings starting from request for information all the way to demos supporting tenders. This results in long selling cycles for biometrics solution vendors.

Government organizations often work with prequalified vendors. This is due to the sensitive nature of the projects handled by them. They require trustworthy and proven vendors. Hence it is very difficult for a relatively young company with no previous dealings with government organizations to gain their trust and confidence even if the company has the best solution for their requirements. Thus the entry barriers faced by new biometric start ups are relatively high.

A government organization uses a biometric solution it acquired for a relatively long period of time. They do not replace such solutions with alternative technology very frequently within relatively short time periods. This assures a biometric vendor continued maintenance revenue once their product is used by a government function.

Biometric solution is a small part of a generally larger access control solutions. Hence biometric vendors face the challenge of having to work with business partners who are large solution providers or system integrators for getting their solution to be adopted by customers. While they need to work through the system integrators, it is not the system integrators who decide on what biometric solutions to use. The biometric vendors will need to convince both the ultimate customers and the system integration business partners to accept their solution. As is often the case, several system integrators compete for business when government tenders are released. It is very rare that all system integrators competing for a tender use the same bioinformatics solution. And, the decision to select a system integrator depends on a number of factors including the quality of the proposed biometric solution. So, even the vendor providing the best biometric solution is not guaranteed to be selected if the overall solution proposed by its system integration business partner does not find favor from the government organization. So, the sales of

biometric solution vendors are not only dependent heavily on their business partners but also are not in control of the outcomes despite having the best solution for the market.

All these challenges were faced by XID technologies as well. Team XID decided to take a step back and ask themselves whether to continue to focus on the award winning biometric solutions that they had so fondly developed and promoted.

3. Reengineering XID

It is the agility of the founding team of a business that will determine whether a company can repurpose itself in a new market with much greater promise. It is important to realize that companies need to continue to leverage on their core competencies even as they prepare to transform themselves. Team XID's core competency was in the general area of image processing and in the specific area of face processing. They had technology that allowed them to both analyze and synthesize a face. Any change in product offerings had to leverage that core competency.

The first decision that the team made was to refocus their products for the consumer space. The time to market and the selling cycles are significantly shorter than those for enterprise products if they could find a sweet spot in the consumer markets. The challenge will be in identifying the product offerings that would position XID Technologies in a strong consumer space.

XID's core product was changed from a face analysis engine to a face replacement engine. This new engine essentially reused many of the underlying modules developed for the earlier products and required minimal additional modules. Once face replacement was identified as a core technology the challenge then was to identify the applications in consumer space that were compelling. XID first re-branded this new technology as XID Face Media technology.

Team XID decided to apply Face Media technologies to three broad markets. The first one was directed towards consumers who would like to see photorealistic face animation that can alter expressions accompanied with complementary artifacts and environments. The second market would be industrial face replacement applications. The third market identified was web 2.0, gaming and mobile environments.

Fig. 1 is an example of how expressions can be introduced into different types of pictures (Painting, Photo, Caricature and Line Drawing) using the Face Media Technologies. Another example is the video ring tone application as shown in Fig. 2.

Industrial applications of Face Media technologies abound across many markets. Examples are postproductions for movie and television industries.

Clearly there was significant opportunity for Team XID to generate a suite of products and services for consumer, mobile and industrial applications. Some examples are personalization of players in games, advertisements using face replacement technologies,

personalized avatars and video ring tones, personalization of Karaokes, personalized greeting cards and personalized emoticons. In fact, some of the applications suited the emerging Web 2.0 markets very well.

It was now up to Team XID to prioritize the products according the market size and opportunities. Clearly the range of products had global appeal and Asia was the number one market for some of the applications such as personalized games and mobile applications. XID Technologies was now poised for a rapid take-off in the consumer space.

It was also refreshing that the Singapore's Infocomm Development Authority bestowed the 2006 National award for the most outstanding product or service to XID in October 2006. This was closely followed by the Asian Innovative Product Award given to XID's Face Media Technologies. XID's Face Media technology was also among those short listed for the World Technology Award 2006 held in San Francisco in November 2006.
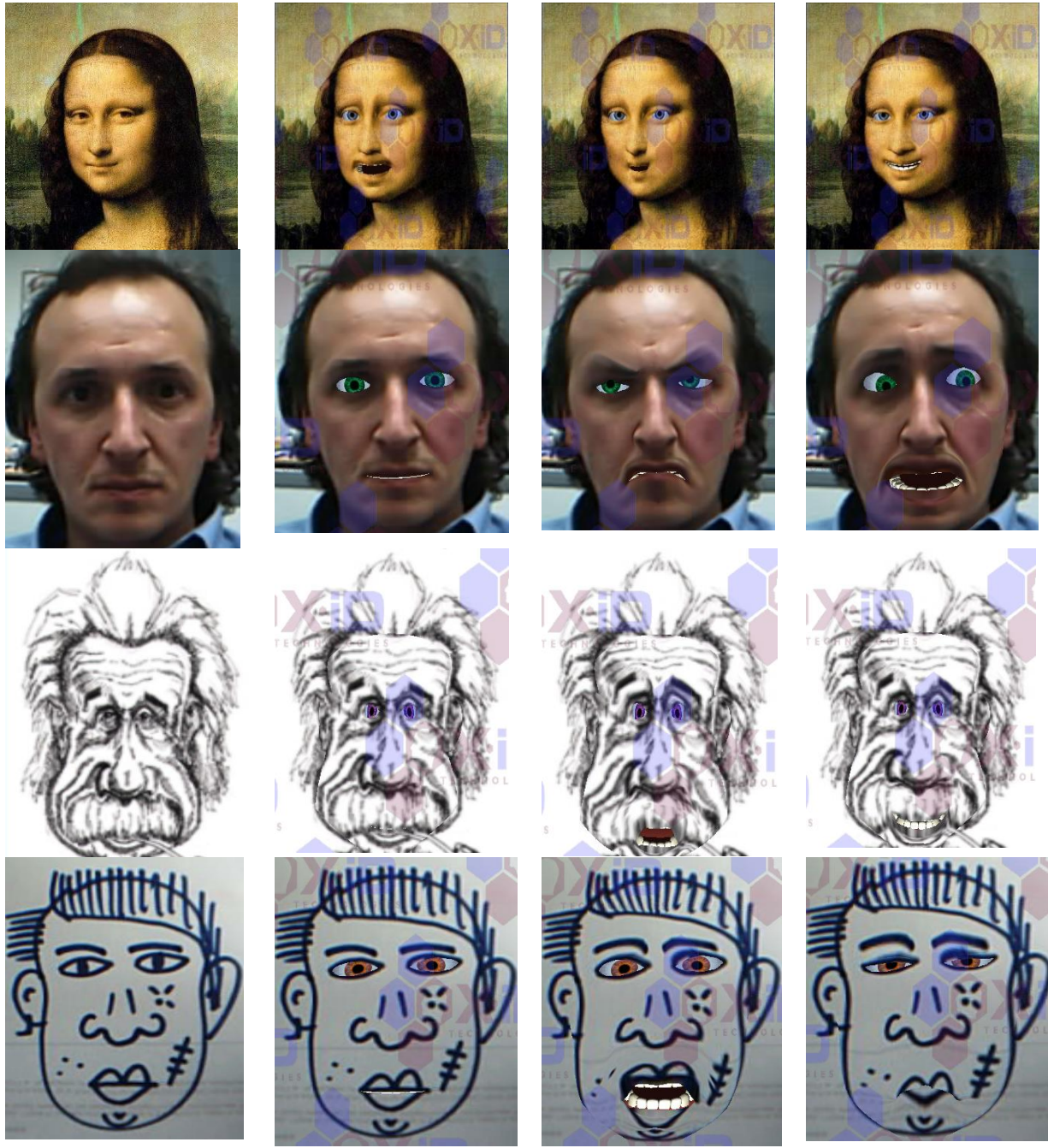
Fig. 1 Animations of different types of images using XID's Face Media Technology.

Setup – 1 time	Personalization Million times

Brands Campaign Ads

Content provider

Solution Provider

Setup – 1 time
- Video Clip Production with a replaceable character
- 3D Face Tracking of the replaceable character
- Personalizable Video stored in Server

Personalization Million times
- Mobile Phone
- Internet
- Interactive TV
- Video Personalization
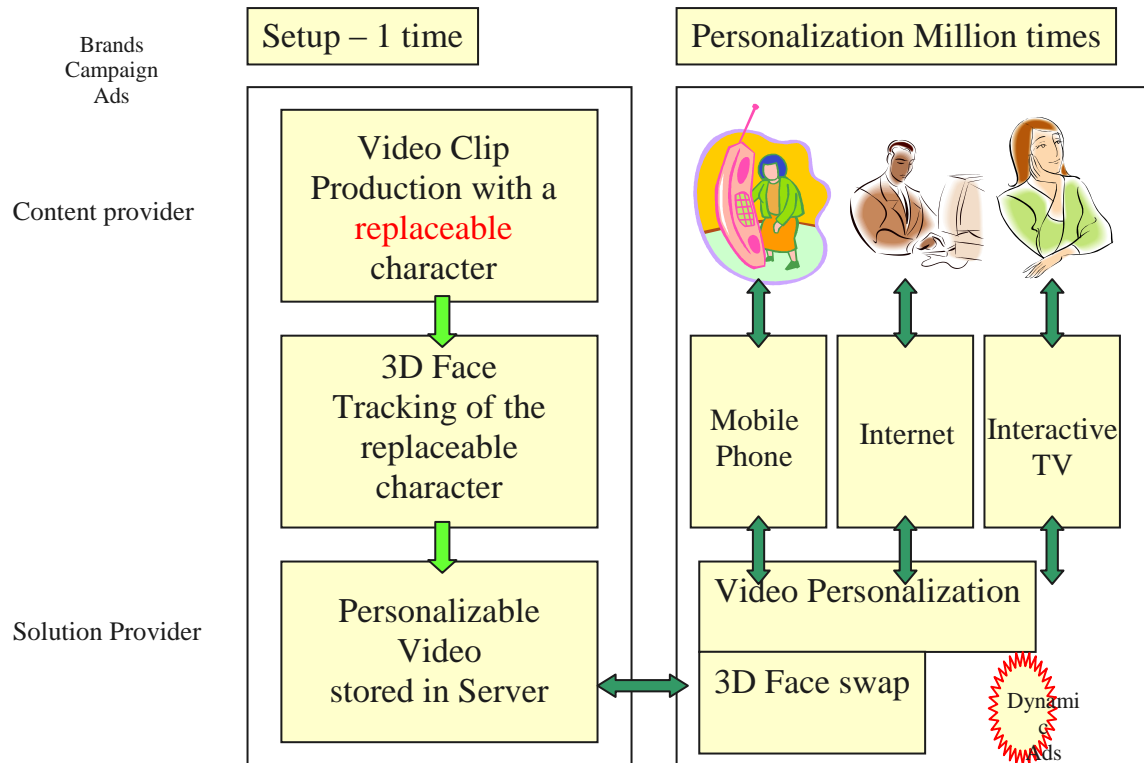- 3D Face swap
- Dynamic Ads

Fig. 2   A system for generating video ring tones.

4. New opportunities

The reengineered XID Technologies now finds itself in the enviable position of multiple suitors expressing a desire to invest in the company. Team XID has the option of deciding whether it needs investments and if so who would be the strategic investor for them.

They also needed to identify a mechanism for rapidly executing the different market opportunities in order to thwart the possibilities of copy cats occupying areas not served by XID technologies in the near term.   Some of the opportunities are:

❑ Billion dollar markets across video games, post production of videos and movies, and mobile applications that can use the XID Face Media Technology. The video

games market alone is worth 18 Billion dollars and Asia Pacific is the largest opportunity for this markets.
- ❏ 3D Avatar Personalization market is another opportunity. This could span a number of applications including the possibility of personalizing emoticons.
- ❏ Singapore is setting up MEDIA 21, a bold effort to create a sizable Interactive Digital Media industry. XID's technology fits some of the areas promoted by MEDIA 21.

There are many possible revenue streams for the XID Face Media Technologies. One of the revenue streams will by selling accessories for Avatars. New and upgraded accessories can be released at regular intervals. The revenue can be either from the consumers or from the sponsors of the accessories. Choice of accessories can reflect user preferences and hence the possibility of sponsorship from accessory manufacturers. Examples are the choice of eye-glasses and other accessories. The companies that market such accessories can use information on customer preferences for positioning their products.

5. Summary

This paper illustrates how a company can remain agile and nimble in sensing new market opportunities and revise its product offerings using its core technology competencies in response to market feedback. The important lesson learnt is to move away from markets with long selling cycles and to repurpose the core competencies to address attractive consumer markets. We hope that reengineering of XID would be a great inspiration to others facing challenges similar to what XID was facing previously.

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