

Final Report of Software Innovation Course (ETM 510/610)

# Software Strategic Planning Ring Technology Company



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### **Synopsis**

Ring Technology is a small company with a strong product offering in the digital presentation space. Ring products are designed for ease of setup and use making them ideal for customers who need a presentation solution that 'just works'. The product is unique in the digital offering space in that it creates a private network for a host computer to broadcast its display to any number of clients. The hosting system can easily see how many and which clients are connected and in certain configurations the clients can be locked in keeping the attention of the viewer captive. This combination of ease of use and captive viewership makes the product an ideal fit for educational markets which present a fertile and quickly growing field. If Ring Technology can establish itself as a presentation standard for schools it could quickly grow into a larger and profitable company.

### **Research Method**

The application development and technology management plan in this document is based on a real case and real technologies investigated by the authors with the permission of the case company. The name of the company and other identifiable details are intentionally changed or obfuscated to protect private information from being searchable by the public. The authors conducted extensive research into digital presentation technologies, the technology used by this company and the presentation market space concentrating on the needs and requirements of the educational market. Two members of the company were interviewed including the Director of Sales who provided invaluable information into the history and development of the company, the functionality of the product and the potential of the market. A number of interviews were also conducted at a local high school including an interview with a teacher interested in the possibilities offered by presentation technologies and the school's IT Manager. The authors would like to thank all who contributed to the content used by this study and hopes the analysis will prove valuable.

### **Background and Technology**

Ring Technology is a small company based in Vancouver, WA that specializes in products used for digital presentations. The company was founded in 2012 by Steve Hicks, one of the original founders of InFocus, the well-known manufacturer of digital projectors [1]. Ring Technology develops products designed for digital presentations with a focus on ease of use. The company currently has two family of products: Software designed to easily allow an individual to share a presentation with others and hardware pre-configured with the Ring Technology software. The current software offerings consists of a presentation host that can be installed on a PC running Windows 7 or Windows 8 and a client viewer which can run an Windows PC, an Android device or an iOS device such as an iPad. The hardware package consists of a laptop with the host installed and configured and a number of Android tablets with the client application. The focus on the products is always on ease of use and trouble-free operation and is intended to provide the presenter with the comfort of certainty that the method of delivery for the presentation is taken care of so that he may focus on the content.

"Imagine sitting down in a meeting and easily putting your computer screen into everyone's hands without wires, Internet access, or setup [2]" - Steve Hix

Mr. Hix has a history of entrepreneurship in developing emerging technologies and growing them into businesses [3]. The projector business he helped develop with InFocus has been diluted by inexpensive Asian manufacturers who are able to make commodity products using projector technology developed and licensed by competitor HP [4]. In his new venture Hicks once again aims to provide a solution for digital presentation sharing, but this time with a focus on ease of use and functionality. The founder's knowledge of presentation technologies and his association with presentation in the market space provide a valuable launching point for future markets and ventures.

Ring is not the only company in the digital presentation space but has the unique advantage of a patented method for 'Closed Network Presentation' (US Patent #8,989,449). This patent covers the method by which the Ring host creates a private Wi-Fi network using the host system's Network Interface Card (NIC) and clients connect to the private network to view the host content. Also included in the patent is a caching mechanism for content to maintain a steady stream during a

presentation. This connection technique has a number of unique advantages over other similar products:

- 1- Since the network used by the host and clients is private, client computers cannot access an external network (internet) keeping their attention captive during the presentation
- 2- Neither the host nor the clients have to worry about how to join the local area network (LAN) of the physical location where the presentation is taking place
- 3- Since the LAN is bypassed problems with network latency or congestion are avoided
- 4- Problems associated with other methods for presentation, such as finding the right video cable when connecting to a digital projector are avoided

Since the client runs on a variety of different platforms presentation consumers can bring their own device (BYOD) for the presentation

Ring Technology's offerings have a variety of uses in the digital presentation space, but as this document will detail it is ideal for consumers who value:

- Ease of use
- Easy and assured setup
- A captive audience

### **Strategic Plan**

In order to specify the fundamental objectives of Ring Technology, we defined our strategic vision, mission and long term objectives as follows:

#### Vision

"To become the educational presentation standard in the nation"

#### Mission

"To provide a simple, secure and efficient mode of delivering presentations"

#### **Objectives**

Ring Technology being a startup company will aim at the long-term return on investment and so the objectives for the next three years are -

- Achieve presence in 5 large school district by year 2020
- Achieve total sales of \$2.7M by 2018

### **SWOT** Analysis

SWOT analysis helps to assess the strengths, weaknesses, opportunities, and threats of the organization [5]. This is a tool to analyze the environment and the companies standing in it. The strengths and weaknesses are internal while the opportunities and threats are external to the company. Conducting a SWOT analysis helps companies determine the strategic outline for making decisions. It helps to decide what challenges should be overcome and what can help them to help achieve their objectives. This analysis will provide guidance on how Ring Technology can build on it strengths and take advantage of the opportunities to fill the gaps in the presentation industry. The weakness highlights the areas to work on and improve upon while the threat analysis will help Ring Technology to be proactive to avoid them.

#### Strengths

Ring Technology products, Ring Box, Ring Hub and the Ring Mobile app have an edge over competitors in terms of simplicity of use, particularly in initial setup. Internet access is not required to use Ring products, however the presenter may access the internet to search and present content to the audience. Once the viewers are connected to the Ring products, the presenter gets total control of the viewers. The viewers are only able to access whatever content the presenter chooses to display. The biggest strength of Ring Technology is the people associated with the company and their expertise in the industry. Steve Hix, the founder of the company has great experience in the presentation industry that resonates in the intuitive configuration of the products. The company possesses a patent for the core technology of the creation of private network and has applied for two other patents. Ring Technology is the only company in the market that creates its own private network for presentation and screen sharing.

#### Weakness

Being a startup, Ring Technology lacks market awareness; it is still establishing itself in the market. The technology used is still fairly new in the market, due to which it is not yet widely adopted. Most users are accustomed to alternative modes of presentation, such as overhead projectors, paper printout. There are also a number of products available with screen sharing capability, some of which are provided free of charge, making Ring products expensive by comparison.

#### **Opportunities**

Digital presentation is becoming the norm of the presentation industry. The presentation market is in need of products that can provide an interactive environment for the presenter. Ring Technology can capitalize on this need by enhancing its product offering with feedback and interactive features. Today presentation is an area that is not limited to just a classroom setting or a conference room setting. The technology can be used in newer markets like seminar halls where an interactive and collaborative environment is desired. Ring can also capitalize by licensing its technology to other companies.

#### Threats

Ring Technology products have fewer features as compared to its competitors. The current available products in the market have a range of additional feature set that Ring Technology products do not have.

Strengths	Weakness
<ul> <li>Simple to use</li> <li>Convenient initial setup</li> <li>No need of internet connection</li> <li>Total presentation control</li> <li>Experience in the presentation industries</li> <li>Patent - only product to create a private network</li> </ul>	<ul> <li>New technology</li> <li>Few users</li> <li>Low market awareness</li> </ul>
Opportunities	Threats
<ul> <li>Interactive presentations</li> <li>New markets</li> </ul>	<ul> <li>Competitive products with additional features</li> <li>Competitive products with online collaboration functionality</li> </ul>

Table 1: SWOT Analysis

### **Core Competency**

Through literature review we found that ease of use, efficiency in presentation, security and audience control were key customer needs when delivering a presentation. Simplicity of the product will not only provide ease of use but also aid in delivering an efficient presentation. Also the ability to capture undistracted attention of the audience will provide the presenter control over the audience, thus ease of use and captive audience were chosen as the core competencies for Ring Technology.



Figure1: Core Competency for Ring Technology

#### Competition

Ring Technology is not the only company in the presentation industry. It was important to look at the current competitors for Ring Technology to understand the market.

In the presentation industry, competition can be categorized in the following different types:

- Presentation Overhead Projectors
- Smart Boards
- Screen Sharing
- Wireless Presentation

Current competitors' products fall into the above listed types. Also, competition can be listed as Perceived Competition or Direct Competition. Perceived competitors are those products that are similar in nature but have some limitations and Direct competitors are products that have exactly the same feature set and serves the same market.

Looking at the competitors for Ring Technology, their feature set was studied in detail to gain an understanding of their presence in the market. According to the study, below given are the perceived and direct competitors for Ring Technology with their feature set.

Features	DisplayNote [6]	Splashtop [7]	WePresent [8]	Skype [9]	WebEx [10]
Instant Sharing	Х	Х	Х	Х	Х
Screen Mirroring	Х	Х	Х		
Wireless Presenting	Х		Х		
Real-time Collaboration	Х	Х		Х	Х
Lecture Capture	Х	Х			
Personalized Notes	Х				
Remote Control		Х	Х	Х	Х

 Table 2: Competition

Based on the analysis, DisplayNote [6] and Spalshtop [7] were the two closest competitors for Ring Technology products. Ring Technology's competitive advantage is on ease of use and attention retention capability. So these two aspects were chosen as the criteria to position Ring Technology against its competitors. The graphical positioning of Ring Technology against its competitors is shown in the figure below.



Figure 2: Affinity Diagram

### **Market Definition**

#### **Market Segmentation**

A market analysis was conducted to find the serviceable obtainable market and market position for Ring Technology. A top-down approach was used to narrow down the target market for Ring Technology. We started by identifying total number of public and private schools in the United States, then the number of schools in the western region of the United States and lastly the number of schools only in the northwest region i.e. State of Oregon and Washington.

The below given figure depicts our analysis for the market segmentation.



Figure 3: Market Segmentation

So,the target market for Ring technology will be the 4,617 schools in the states of Washington and Oregon.

### **Business Model**

A **business model** is an "abstract representation of an organization, be it conceptual, textual, and/or graphical, of all core interrelated architectural, co-operational, and financial arrangements designed and developed by an organization presently and in the future, as well as all core products and/or services the organization offers, or will offer, based on these arrangements that are needed to achieve its strategic goals and objectives" [11]. The business model describes the rationale of how an organization creates, delivers, and captures value [12]. The process of business model construction is part of business strategy.

In this project, we utilized the business model canvas framework in order to communicate the proposed strategy and business model for the Ring Technology Company. In the Canvas Model, there are nine different sections where each of them present one dimension of Business model for any company as follows:

#### **Customer Segments:**

An organization serves one or several Customer Segments.

#### Value Propositions:

It seeks to solve customer problems and satisfy customer needs.

#### **Channels:**

Value propositions are delivered to customers through communication, distribution, and sales Channels.

#### **Customer Relationships:**

Customer relationships are established and maintained with each Customer Segment.

#### **Revenue Streams:**

Revenue streams result from value propositions successfully offered to customers.

#### **Key Resources:**

Key resources are the assets required to offer and deliver the previously described elements.

#### **Key Activities:**

The activities that are critical in delivering value to customer

#### **Key Partnerships:**

Some activities are outsourced and some resources are acquired outside the enterprise.

#### **Cost Structure:**

The business model elements result in the cost structure [12].

The following image illustrates Business model canvas for the Ring Technology:



Figure 4: Business Model Canvas for Ring Technology Company

#### **Customer Segments**

Customers comprise the heart of any business model. Without (profitable) customers, no company can survive for long. Using the interviews and strategic analysis of the market for Ring Technology, we decided K-12 private and public schools as the target market making teachers and students the end users for the product. As described earlier in this document, we selected the Northwest region

high schools for the initial market penetration, and for the short term objectives we will focus on Oregon and Washington high school districts.

#### Value Proposition

The Unique Value Proposition is the reason why customers turn to one company over another. The product or service which delivers the value to the customer should be unique in order to enable competition in the market for the company.

The Unique aspect of our product is capability of sharing screens over ad-hoc wireless networks which mitigates the problems related to security of the public networks and provides users with an infrastructure for sharing screens without engaging in preparing internet access for all the users.

This capability decreases the setup time for networking and increases the ease of use of the system. As learned from the interviews, one important and trending approach in educational environments is One-to-One content delivery. Regarding this approach, content for the class is delivered to each student independently.

The Ring product would enable teachers to share their screens directly with students and also, make sure that the students are considering the same content that they wish to deliver. Thus they would achieve captive audience in the classroom and higher efficiency of education.

#### Partnership

Companies forge partnerships for many reasons, and partnerships are becoming a cornerstone of many business models. Companies create alliances to optimize their business models, reduce risk, or acquire resources.

They extend their own capabilities by relying on other firms to furnish particular resources or perform certain activities [12]. Ring technology is a small company (less than 10 employees) and possesses the core competency of technology ownership for its products. Considering the newness of both the technology and company, partnership would have a positive impact in the pace and success of market penetration.

A strategy to propel market penetration for this company is expanding distribution and sale resources. Currently Ring Technology utilizes four salespersons to both promote and sell the products; expanding the sales department would impose significant expenditures to the company in the initial phases of market penetration. The solution that our team proposes is partnering with a company that already owns large distribution and sales channels.

In addition if the company that we choose for partnership is well-known in the educational devices, it would decrease the cost of marketing and advertising significantly. For these reasons we selected ELMO, the digital camera and presentation Company, as our partner for channel sales in the education market.

ELMO is a well-known educational equipment provider throughout the United States. It possesses a large distribution channel and sales points in different regions of United States. More than 200 people are currently working as salespersons of ELMO nationally and they have a proper connection with schools, school districts and universities. ELMO has a 90% market penetration with their overhead camera solution making them well known and eager to find additional products and offerings.

This partnership is a strategic alliance with non-competitor. This alliance would have different benefits for Ring Technology Company such as; 1) Decreasing the market penetration time; 2) Decreasing the sales force expenditures; 3) Focusing on the core competency of the company; 4) Brand trust in the market.

#### **Revenue Stream**

If customers comprise the heart of a business model, Revenue Streams are its arteries. Regarding the high school as the primary customer segment and ELMO company as a partner that would assist company in sales of products, our business model would have two revenue streams.

The first transactional revenue stream is direct sales to high schools, a premium model. For every product that is delivered to the high schools a transaction occurs and without incurring usage or subscription fees.

The second revenue stream is through channel sales realized by ELMO. In this Royalty (licensing) revenue stream, for every Product sold to the customers

through ELMO, a portion of the money is returned to Ring Technology as the main product developer, and the rest is taken by ELMO for the distribution and sales assistantship activities.

We selected fixed List prices as our basic pricing strategy and different products of the company are priced regarding the number of users that can share screen in one network.

#### **Cost Structure**

The Cost Structure describes all costs incurred to operate a business model. Cost structure is elicited from key resources, key activities and key partnership aspects of the business model. There are two main approaches in cost structure; Cost-driven and Value-driven [12].

Although companies consider reducing costs in different product and processes there are companies who emphasize more on cost-driven business models. Costdriven business models focus on minimizing costs wherever possible. This approach aims at creating and maintaining the leanest possible cost structure, using low price value propositions, maximum automation, and extensive outsourcing.

Some companies are less concerned with the cost implications of a particular business model design, and instead focus on value creation. Premium Value Propositions and a high degree of personalized service usually characterize value-driven business models [12].

For Ring Technology we propose value-driven business model, as it owns the technology patent and can be exclusive provider of this solution.

The costs structure would comprise of two main sections of Fixed and variable costs. The Fixed costs of Ring Technology are the costs of salaries of company staff, rent of the company office and bills of utilities. In order to list some variable costs we can name, new feature development, which requires temporary software developers and marketing/advertising expenditures.

#### **Key Resources**

These resources allow an enterprise to create and offer a Value Proposition, reach markets, maintain relationships with Customer Segments, and earn revenues [12].

In order to develop products in the software industry the key resources are the software developers and system designers. These are the main contributors and key development resources. We can name other resources such as building / office, computer systems, office equipment etc..., but none are as essential as software developers in this business model.

#### **Key Activities**

These are the most important actions a company must take to operate successfully. Like Key Resources, they are required to create and offer a Value Proposition, reach markets, maintain Customer Relationships, and earn revenues [12]. Software developers were mentioned as key resources making software

Software developers were mentioned as key resources, making software development is a key activity for final value proposition.

The other fundamental activity which would protect this business model from competitors is registering intellectual property. Patenting the key features of the final product would make copying difficult for other companies and will protect the business revenue stream alive for a longer time.

The other Key activity is partnering with ELMO Company. As mentioned above, partnership with ELMO will have different benefits for Ring Technology Company and should be considered as an essential activity for smooth running of business in the educational device market.

#### **Customers Relations**

Customer relationships may be driven by the following motivations; Customer acquisition, Customer retention, Boosting sales (upselling) [12].

Since the proposed business model have two dimensions of working directly with customers (B2C) and Sale of products thru another company (B2B), different customer relations procedures should be considered regarding each segment.

For the High School, there can be personal assistance for solving problems regarding malfunction of system of any other difficulties regarding operating the products. Also self-service customer care can be considered by developing some manuals and handbooks for describing the system set-up or troubleshooting.

ELMO as a big company requires different considerations and relationship. Regarding the training classes for presentation and sale of this product, they would have less set-up and troubleshooting problems. Most of the contacts from ELMO would be made regarding the ordering of new products or informing of destination address, so an office staff can help them with these services.

#### Channels

Channels are customer touch points that play an important role in the customer experience. Channels serve several functions, including: Raising awareness among customers about a company's products and services, helping customers evaluate a company's value proposition, allowing customers to purchase specific products and services, delivering a value proposition to customers and providing postpurchase customer support

Regarding the Ring Technology business model we would have three main channels for reaching the customers: Ring Technology's direct sales force which are responsible for delivery, promotion and sale of the products. The Internet as the ubiquitous instrument is used to both providing customers with more information about this product and online sale of the products.

Finally, the ELMO sales representatives, as discussed earlier would be the main distributor and sales point of this business model.

### **Financial Projections**

The selected market segment of 4,617 schools considered for our growth plan. The tables below show estimated projections for total units to be sold through direct sales and the partnership channel.

<u>Units Sold</u>				
Products	2015	2016	2017	2018
<b>Ring Box</b>	50	75	120	216
<b>Ring Hub</b>	50	75	120	216
<b>Ring Mobile</b>	50	75	120	216
Total Sales Units	150	225	360	648

#### **Direct Sales**

Channel Sales

<u>Units Sold</u>				
Products	2015	2016	2017	2018
<b>Ring Box</b>	300	450	720	1296
<b>Ring Hub</b>	50	75	120	216
<b>Ring Mobile</b>	20	30	48	86
Total Sales Units	370	555	888	1598

Table 3&4: Direct and Channel Sales

The total revenue of the company is calculated considering the product units sold each year and the price (MSRP) for those products. The projected total revenue for the first year is \$623,000 and \$2.7M in 2018. The revenue growth plan is as shown in the figure below.



Figure 5: Revenue Growth Forecast

In order to calculate the company's net profit, we considered the Cost of Goods Sold (COGS) and the relative expenses.

#### COGS

To calculate COGS we considered the product's making cost, packaging and shipping costs. The packaging and the shipping costs were considered different for direct sales and channel sales. The COGS calculated for direct sales as well as for channel sales is as shown in the table below -

#### **Direct Sales**

COGS					
Products	Cost of Manufacturing	MSRP	Package	Shipping	Cost + Packaging
<b>Ring Box</b>	\$150	\$1,900	\$15	\$10	\$165
<b>Ring Hub</b>	\$100	\$1,000	\$10	\$10	\$110
Ring Mobile	\$0	\$800	\$0	\$10	\$0

Table 5: Direct Sales Cost of Goods Sold

#### **Channel Sales**

COGS				
Products	Cost of Manufacturing	MSRP	Package & Shipping	Cost + Packaging
<b>Ring Box</b>	\$150	\$1,330	\$7	\$157
<b>Ring Hub</b>	\$100	\$700	\$4	\$104
Ring Mobile	\$0	\$200	\$0	\$0

Table 6: Channel Sales Cost of Goods Sold

#### Expenses

The expenses considered for the financial projections are divided into corporate expenses and promotional expenses as given below.

<u>Corporate</u>							
	2015	2016	2017	2018			
Administrative & Wages	\$310,000	\$382,500	\$448,800	\$382,500			
<b>Marketing &amp; Sales Services</b>	\$250,000	\$200,000	\$200,000	\$100,000			
Travel	\$40,000	\$48,000	\$45,000	\$40,000			
<u>Promotions</u>							
<b>Trade Shows</b>	\$60,000	\$60,000	\$40,000	\$40,000			
Web Advertisements	\$2,000	\$3,000	\$3,000	\$2,000			
Total Expenses	\$662,000	\$693,500	\$736,800	\$564,500			
	Table 7:	Expenses					

The gross net profit and the profit calculated by considering the above given revenue, COGS, and the expense is as given in the following table. The details of the financial projections are presented in the Appendix.

	2015	2016 2017		2018	
Total Revenue	\$623,000	\$934,500	\$1,495,200	\$2,691,360	
COGS	\$67,531	\$101,296 \$162,074		\$291,733	
Gross Profit	\$555,469	\$833,204	\$1,333,126	\$2,399,627	
Expenses	\$662,000	\$693,500	\$736,800	\$564,500	
Net Profit	(\$106,531)	\$139,704	\$596,326	\$1,835,127	
0/ of ND to solos	170/	150/	400/	690/	
70 OF INF 10 Sales	-1/%	15%	40%	00%	

Table 8: Revenue and Profit Projections

As indicated in the table, the company will see a net loss of \$106,531 in the year 2015. The reason being the investment done by the company in marketing to create the awareness in the market. With more units sold in the next years, the net profit will grow every year with \$1.84M in the year 2018. The net profit is projected to increase from -17% to 68% from year 2015 to 2018.

### **Product Development**

#### **Client and Server Development**

The current version of Ring Technology products are based on the core hub technology that allows the creation of an ad-hoc private WiFi network and on the client side viewers that can detect and connect to the hub.

The hub has been adapted to run on a PC with Windows 7 or 8 or on a dedicated network hardware device like a wireless router. The client was originally designed to run on Android devices (tablets) but has since been ported to iOS (iPhones, iPads and WiFi enabled iPods) and to Windows PCs.

The company is making regular updates to the existing clients and working on a client viewer for OS X which would enable MacBook laptops and Macintosh computers to join a presentation. Given the popularity of Macintosh laptops in education, particularly in higher education this offering certainly makes sense.

Noticeably absent is a client for Chromebooks. While Chrome OS based systems have been in the market for more than 3 years [13], it still represents less than 1% of the total PC market [14] making it an unlikely seeming candidate for a commercial application; however the adoption of Chromebooks in education has seen spectacular increase in the last year.

The Chrome browser saw more than a doubling in usage in December of 2014, mostly due to a significant increase in Chrome OS based machines [15], [16]. According to Google VP Sundar Pichai Chromebooks are "approaching a 50 percent market share in the education market", up from 5% in mid 2013 and 20% in early 2014 [17]. While iPads are familiar to most children and their tactile interface are comfortable and intuitive, Chromebooks offer a number of key advantages.

Schools like them because they are cheaper to purchase (typically starting at under \$200) cheaper and easier to manage and have physical keyboards, but perhaps more importantly they are compatible with the emerging Google Classroom products and are zero-state machines (meaning that since student profiles, applications and files are all kept in the cloud the computer is can be handed from user to user with no re-configuration required) [18].

Google Classroom encompasses a wide variety of products and offerings including hardware (Chromebooks and Tablets), Productivity Tools (Classroom, Gmail, Drive, Calendar, Docs, etc...), content (apps, books, videos) and other SaaS offerings designed for the Chrome OS.

This national uptake in the Chrome OS is reflected in regional schools were Portland Public Schools have made Chromebooks part of their standard classroom Tech Bundle and are starting to use tech-carts loaded with dozens of Chromebooks that can be rolled into a classroom for use [19].

The port of Ring Viewer to Chrome OS will require either a web thin client version (HTML5, CSS and JavaScript) or or for the Android version to run in the Android Runtime Client (ARC) [13]. Given the client's ability to change WiFi settings and buffer video feeds this port will not be trivial, but it could be the difference between being a niche player or a technology standard in the education market.

#### **Embedded System Development**

The Ring Hub has already been adapted to run as an integrated component of a physical network hub. In the case of the Ring Hub this is a simple and inexpensive wireless router running the DD-WRT Linux based firmware [20].

The use of this standard framework not only makes the software easy to maintain and update but it also makes it easy to port the application to other similar devices. While the current hardware offerings meet the needs of the company and customers other hardware solutions using the same or similar firmware (such as HyperWRT [21] or Tomato [22]) should be considered for additional features that could add customer value such as enhanced security (for government markets) or manageability (for corporate customers).

More valuable still are the opportunities presented by bundling the host or client applications with other solutions. The collaboration with Elmo mentioned earlier, for example, is enabled by relabeling the Ring Hub or Ring Box with an Elmo part number and reselling the product through the established distribution channels [23].

There are any number of devices already designed, or even better already installed, for the education market that could be adapted to be Ring Hubs or Ring Boxes. Collaboration with other manufactures should remain an open and viable option for future expansion.

#### **Technology Licensing**

Although there are a number of companies with offerings in the digital presentation space Ring enjoy patent protection for the solution of creating an adhoc private network for a presentation. This functionality is highly desirable under many circumstances and the patent is therefore very valuable.

In addition to direct sales of products and partnership with other presentation manufacturers Ring Technology should be receptive to offers for technology licensing. Since the patent covers the concept and method of presentation, not the specific code used in the software it can be leveraged and licensed without having to share actual code to another organization wanting to bring a similar solution to market.

Besides, Ring should be attentive of similar offerings from competitors and prepared to defend its patent if similar functionality should appear in a competing product. The relationship with Elmo and other resellers of presentation solutions should help Ring stay aware of other solutions.

#### **Development Philosophy**

As Chris B, Director of Sales for Ring Technology said in his interview "Enterprise wants screen sharing, Government wants security and Education wants all the features with no cost". In the interview with Fred F, IT manager, he stated that "Teachers don't know what they need the technology to do, but they do know what they need to teach" and "if a technology fails the teacher will not try to fix it, they will immediately work to something they know will work like pen and paper".

Take these and other statements and research together and it is clear that the education market is hungry for presentation solutions that are rich in features, easy to use, highly stable and inexpensive. In order to meet these demanding Ring Technology must continue to develop its offerings with the following core values always in mind:

- 1. Know your customer and their needs
- 2. Delight educators and school districts by addressing their needs and they will love you
- 3. Address teacher's pain points first and they won't know how they lived without you

4. Stay true to the core competency of a clean interface that is a breeze to setup and easy to use

Given these guidelines it is clear that Ring Technology must keep growing and adapting its product offerings while maintaining a stable and functional set of solutions. Product quality should be paramount, particularly in ensuring system stability and trouble-free operation.

Additional offerings and solutions should be well considered and new functionality should be carefully evaluated to ensure it is developed to address a real need and not a perceived desire. The addition of "bells and whistles" can not only threaten the elegance and stability of the product but can weigh the development teams down with code and function to manage that may do little to differentiate Ring from other products.

#### **Development Cycle**

By pursuing schools and school districts as the primary customers Ring Technology enjoys the advantage of having a customer base with a highly predictable schedule. While it can take a long time for a school to decide on a technology ("six to eight months from Hello to Thank You" according to Chris B.) even when the need is well understood, almost all schools in the US follow the same basic yearly calendar with new students entering in Fall, a short break in Winter and in Spring and an extended vacation in Summer.

The development cycle should mirror the needs of the customer with minor revisions made ready for release before the start of each school quarter and major releases certified before the start of school in Fall. The release cycle should include enough time for the product to be tested and and for school IT to certify and deploy updates before students are back in session.

If a cloud enabled solution is prepared for Chromebooks revisions can be pushed out with little or no customer interaction while standalone clients and servers will require a method for customer notification, download and installation.

#### **Beta Program and Voice of Customer**

In order to meet both the need to stay abreast of customer needs and test new products Ring Technology should partner with a school, preferably one located

physically close to the Vancouver WA headquarters to act as a beta site and voice of customer.

For beta testing and certification the school can be enticed with significant discounts, or free licenses. In order to maintain a clear understanding of customer needs Ring Technology should not only have a teacher's advocate to help understand their functional needs and translate them to application features but both administration and developers should make regular visits to the school to see the product in action. This go-and-see mentality helps the company see the product directly from the perspective of the user and can uncover new needs to be addressed.

#### **Development Methodology**

Ring Technology is still a small company and should make the most of the advantages that brings, primarily the ability to identify customer needs and quickly adapt to meet them. The current offering is a good start but the customer is already asking for additional platforms (Chromebooks) and functionality (interactivity).

In order to quickly address the most pressing needs development should be done using an Agile Method. An advocate, preferably someone with experience teaching or a very good understanding of teacher's needs, should be designated to help develop the 'user story' and translate it into a set of deliverables [24].

These features can then be maintained in the change control board and prioritized according to their value. With rapid development of minor iterations Ring should be able to quickly address customer needs and maintain a competitive edge.

#### IT Infrastructure

Another advantage of being a small company is the relatively small overhead and simplicity of systems. Given the foreseeable needs and sales projections Ring should be ready for moderate growth in spurts and should therefore maintain agility and flexibility in IT infrastructure.

Even though all employees are initially based in close physical proximity the organization should be willing and able to quickly add development talent from anywhere in the globe. This means that rather than make investitures in a private IT Infrastructure, Ring would be well advised to leverage Software as a Service offerings for most IT needs.

File sharing can be easily accomplished via Google Drive and Google Docs and basic communication functionality like email through GMail, though the organization should leverage the configurability of these services to be externally viewed as a private domain (for example <u>joe@ringtech.com</u> rather than <u>joe.ring@gmail.com</u>). Other common functions like sales and Enterprise Relationship Management (ERM) can be provided by Salesforce.

One aspect of IT Infrastructure that deserves careful consideration is code management. The code and bug repositories should be sharable so a remote developer may contribute but not open so code and Intellectual Property (IP) may be absconded.

A number of offerings are present in this space, but best fit for Ring is probably GitHub Enterprise. GitHub Enterprise offers the security (LDAP extensibility), management (Deployment Tooling, Health Checks) and collaborative code management and does it with an interface familiar to any developer who uses GitHub [25]. This would enable quick and easy collaboration with most open source developers.

### Conclusion

The analysis of the presentation space suggests that Ring Technology has a competitive edge in it's simple and easy to use design, it's ability to capture the attention of the viewer and the patented design for ad-hoc creation of a closed network. These features fit well in filling the needs of the education market, a very large market that is hungry for technology to help address its challenges. If Ring stays true to its core values and continues to develop the product and strategic partnerships it stands a chance to become a key market player and grow to a profitable organization.

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## Appendix

### Financial Projections

Direct Sales						Channel Sales					
COGS						COGS					
Products	Cost of Manufacturin g	MSRP	Package	Shipping	Cost + Packaging	Products	Cost of Manufacturin g	MSRP	Package & Shipping		Cost + Packaging
Ring Box	\$150	\$1,900	\$15	\$10	\$165	Ring Box	\$150	\$1,330	\$7		\$157
Ring Hub	\$100	\$1,000	\$10	\$10	\$110	Ring Hub	\$100	\$700	\$4		\$104
Ring Mobile	\$0	\$800	\$0	\$10	\$0	Ring Mobile	\$0	\$200	\$0		\$0
Units Sold						Units Sold					
Products	2015	2016	2017	2018		Products	2015	2016	2017	2018	
Circle Box	50	75	120	216		Circle Box	300	450	720	1296	
Circle Hub	50	75	120	216		Circle Hub	50	75	120	216	
Circle Mobile	50	75	120	216		Circle Mobile	20	30	48	86	
Total Sales Units	150	225	360	648		Total Sales Units	370	555	888	1598	
COGS						COGS					
Cost + Packaging	\$13,731	\$20,596	\$32,954	\$59,317		Cost + Packaging	\$52,300	\$78,450	\$125,520	\$225,936	
Shipping	\$1,500	\$2,250	\$3,600	\$6,480							
Total COGS	\$15,231	\$22,846	\$36,554	\$65,797		Total COGS	\$52,300	\$78,450	\$125,520	\$225,936	

#### Expenses

<u>Corporate</u>						
Administrative &	\$310,000	\$382,500	\$448,800	\$382,500		
Marketing & Sales	\$250,000	\$200,000	\$200,000	\$100,000		
Travel	\$40,000	\$48,000	\$45,000	\$40,000		
Promotions						
Trade Shows	\$60,000	\$60,000	\$40,000	\$40,000		
Web Advertisem	\$2,000	\$3,000	\$3,000	\$2,000		
Total Expenses	\$662,000	\$693,500	\$736,800	\$564,500		

	2015	2016	2017	2018		
Total Revenue	\$623,000	\$934,500	\$1,495,200	\$2,691,360		
COGS	\$67,531	\$101,296	\$162,074	\$291,733		
Expenses	\$662,000	\$693,500	\$736,800	\$564,500		
Net Profit	(\$106,531)	\$139,704	\$596,326	\$1,835,127		
% of NP to sales	-17%	15%	40%	68%		