

BenQ GP1

Market Research Log

ETM 555 – Fall 2009

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Table of Contents

Introduction.....	3
Idea Generation.....	3
Product.....	4
Competitive Research.....	4
Market Segmentation.....	5
Target Market Identification.....	7
Customer Research	8
Competitor Analysis	9
Communication Plan	9
Research Plan	9
Internet Plan	10
Financial Analysis.....	10
Conclusion	11
Limitation.....	11
Appendices.....	12
Appendix 1.....	12
Original List of Features to Consider for Product Comparisons	12
Appendix 2.....	13
Competitive Analysis of Mini-Projectors	133
Appendix 3.....	177
Appendix 4.....	199
First customer survey to gauge interest and awareness	199
Appendix 5.....	222
Second customer survey to identify focus market segment's needs.....	222
Appendix 6 Questionnaire	Error! Bookmark not defined. 3
Pair-wise Comparison.....	244

Introduction

The report presents the development process of a technology marketing plan that is a part of the class project for ETM 555: Technology Marketing. The structure of the report starts from idea generation and simple methodology to select our team product. Then we follow the step shown on the syllabus. We do more investigation to understand more about our technology product and its competitors, its value proposition and its expected target market. After defining the target market, we followed the marketing plan outline by Luther, William (the Marketing Plan 3rd edition). This book provided us guideline for development of the following sections; marketing objectives and strategies, product plan, marketing communications plan, research plan, and the Internet plan. Our team decided to skip customer service plan, sales management plan, action plan, but added financial plan instant. Also, to be a value research log for other students who will take this class in the future, we added key learning and suggestion at the end of each section. We wish that our team research log will be a guideline for other students to improve or develop their marketing plan based on our learning curve.

Idea Generation

Each team member proposed his/her technology product ideas to the team. At this step we communicated via the Internet and also develop our Google group entitled “ETM555_Fall2009.” Finally, we had five technology products proposed as follows:

1. A Salt and Paper Battery
2. New generation of memory technology – graphite
3. Sixth Sense
4. Eyes free cell phone interface
5. A projector that fits in your pocket

After voting, our team decided to select pocket projector, BenQ GP1, to be our technology product that we would develop the marketing plan for our class project.

Key learning and suggestion

The challenge of this step was to how each team member participates and shares his/her ideas on selection of our team project. We decided to ask each team member to select two products that they were interested. However, the next challenge was to no consensus among our team members on selection of our target market. Therefore, we applied quantitative method. We calculated the voting - if a product was someone's first choice it got 5 points, if it was their second choice it got 4 points, etc. Then we totaled all points for each product.

Product

To begin our marketing plan, we had to research in more detail the BenQ GP1 projector itself and identify its key features and value drivers. Through the research of BenQ corporation and its products, we realized the BenQ corporation is not a venture or a small firm even though we've never heard about that before. Actually it is a spin-off company from Aser which is one of the well-known brands for digital devices in the world. The major segments of company are computing, communication, and consumer electronics. In our marketing plan, we used lots of information from the website of BenQ especially the features of Joybee GP-1 mini projector. Furthermore, we summarized the competitors' product characteristics in table I using the diverse sources from the Internet. Therefore, you can compare the features of GP-1 to competitors' products.

Key learning and suggestion

The most difficult part in this section was the pricing strategy because the mini projector is not a new emerging product. It has already existed in the Market and has lots of competitor not only mini projectors but also convenient projectors. Therefore, it is very difficult to set up the pricing strategy using penetration and skim pricing strategies. On the other hand, BenQ, GP-1 mini projector has a lot of advantages in design, quality, convenience, eco-environment, and application ways compared to the competitors. So, we analyzed more deeply about competitor analysis. And then, we could set up our pricing strategy based on the competitors' analysis.

Competitive Research

To begin our competitive analysis, we identified a list of the key differentiating features for various display devices. We accomplished this by reviewing features and specifications of over 20 mini-projectors, high end LCD televisions, and full size projectors. The entire list of features and specs for these types of products can be found in Appendix 1. For our competitive analysis we pared this list down to 9 key features:

- Resolution
- Brightness
- Weight
- Image Size
- Product dimensions
- Price
- Supported formats
- Audio
- Additional Special Features

This list of key features/specs to consider for this type of product was confirmed by an article written to advise consumers on what to look for when purchasing this type of product. [1] This article included brightness, connections, expansion options, remote control, size and weight as the key features for a mini-projector.[1]

Based on the above list of key features to consider, we conducted extensive research on the competition, including a review of 16 other mini-projectors, 10 high end LCD TVs, and 2 full-size projectors. We created tables to compare the products based on the 9 features listed above. See Appendix 2 for the full competitive analysis data.

Key learning and suggestion

The main challenge of our team on this step was to define the key features that consumers really use to make a decision when they buy a new projector. Therefore, we decided to make a survey on the Internet via Monkey's survey and Twitter to ask opinions of general people, especially our classmate and ETM's students, on buying a new portable projector. From our team idea, we thought that we should define our target market first before making a survey to ask the perspective of general people on buying a new portable projector. So, we made a new survey to interview our target market as presented on the section, Customer Research.

Market Segmentation

In order to identify our target market, we began by dividing the market into segments – based on common needs. Our original list of all possible markets for a mini-projector is as follows:

- Offices
- Kids - entertainment
- Schools
- Home use
- Gamers
- Renters
- Salesmen
- Churches
- Sports bar
- People who move a lot
- Travelers
- In the car/school bus
- Elevators
- Bathrooms

Based on further analysis of needs for each of the above markets, we combined some of the items into the same market segment, and came up with the resulting list:

- Offices (including elevators & bathrooms)
- Kids - entertainment
- Schools (including school busses)
- Home use
- Gamers
- Renters
- Salesmen
- Churches

- Sports bar
- Travelers (including people who move a lot)

Based on this list, we identified as a group the relative importance in the buying decision of the 9 key product features identified above for each market segment. This rating was on a scale of 1-5, with the following meaning:

- 1: Not very important
- 2: Slightly important
- 3: Neutral
- 4: Important
- 5: Very Important

Additionally, for our product we identified how our product ranked for each of the 9 features compared to the competition. This rating was also done on a scale from 1 – 5, where 1 means we do not meet this requirement well compared to the competition, and 5 means we meet it very well. This data is seen in the last row of the Figure 1 in Appendix 3 below.

In Figure 1, all cells that contain a value of importance for a feature for a given market segment in which we can deliver the necessary value is highlighted in red. Markets with the most red cells for their features are markets in which we would be able to deliver the most value. Clearly, our product could fit into many markets – although as described above, in a follow-up analysis we combined some of these markets together based on similar customer needs or person making the buying decision.

Then, we made a calculation to find the top three segments that our product would be able to deliver the most value to match with targeted requirements. The results on the Figure 2 in Appendix 3 shown that the features of BenQ GP1 are matched with the requirement of Salesman, Gamers, and Home Use respectively.

After completing this analysis, we needed to do further work to identify the profitability of the markets in which we are best able to meet the customer’s needs.

After doing some research into the markets and thinking about the relevance of some of the markets we came up with we decided to generalize further. Our final market segmentation was decided to be Home Entertainment and Business. The home entertainment segment covers kids, schools, home use, gamers, renters, churches, and sports bars in a general fashion while the business segment covers offices, salesmen, and business travelers. From these two segments the data was more attainable and the market segment could be identified.

Key learning and suggestion

This section is the most difficult part on defining the target market. Our team didn’t want to miss a single expected market, so we came up with a lot of expected markets. Finally,

we use scoring model to roughly define our target customers. Salesman would be the one whose demands could be matched with our product features. This calculation based on the input or estimation of our team members; therefore, in the next sections of Target Market Identification, Customer Research, and Competitor Analysis, we started looking for statistic data, customer interview, and comparing competitive products. This would be the process that our team applied to confirm that salesman or business travelers would be our profitable market.

Target Market Identification

The original markets were difficult to pinpoint with data as described earlier in the market segmentation section. With the original choices some overlapped others and they were hard to compare with factual data. The choice to narrow down the markets into two, home entertainment and business travelers, made it much easier to get the needed data and makes a better comparison of markets overall.

Although it was much easier to compare these markets, there were still some challenges in finding the right data to compare. For the total market, data was used from the Census bureau on the total sales in computer peripheral equipment in the US in 2007. For the home entertainment segment of the total market, data from the bureau of labor and statistics was combined with data from the Census Bureau to get an overall market size of about \$315 billion. Even though the size of the home market is quite large, it was ruled out as the target market because the group felt that most home entertainment purchases are for higher quality picture devices that are permanently mounted such as TV's or even a small percentage of full size projectors.

Our target market was identified as the business market because the device we were marketing featured a good projection for presentations in a small size for portability. Data was gathered about the market from several sources. To break down the market, first the overall business market was identified using data from the bureau of labor and statistics US employment demographics. This was further broken down into wage and salary earners segments of managers and professionals, technical sales and clerical workers, service workers, construction workers and mechanics, and operators, fabricators and laborers. Logically the people who would be in the market for a mini projector might be managers, technical workers, and service workers.

The main target market within the business market would be business travelers. These are the people who would need a small portable projector to travel and give presentations with. Additional data was gathered to further identify these individuals. Data from 2004 Business Convention Travelers survey shows that 1 in 5 Americans makes a trip of over 50 miles for business purposes. When multiplied by the total Americans this gave an estimate of the total business traveler market.

Our group then estimate through group consensus that 10% of business travelers would buy a device such as a portable projector. Since BenQ is not the only brand out there in the market we estimated that 33% would buy our brand. This was estimated by looking

at the Asian market. Ben Q is the top brand in mini projectors in Asia and the number 3 brand in overall electronics. The total estimation used for the market size was approximately 1.26 million business travelers.

To verify the reality of the above estimation, business expenses were analyzed. Since businesses would typically buy the device for their employees it was important to understand the amount of money being spent on these types of products. In 2002 the US Census Bureau reported \$5.65 billion of spending for professional, scientific, and technical services for expensed computer related supplies. Numbers from our financial plan were compared with this number to show that our numbers were reasonable and our annual sales were at most 1.66% of this number.

Key learning and suggestion

This section was the most data demanding. It was difficult to find the right kinds of data but once it was studied I think the right information was obtained. One key for our group was to start big with the overall market and work our way down to the target instead of trying to identify each little niche market where there is a lot of overlap in the beginning.

Customer Research

I this step, we used some criteria's and methods to see what our target customers really want and desire.

On our first survey, we sent a questionnaire to ask the opinion of general people about buying a projector, see Appendix 4. Monkey survey was a survey tool we used to send via e-mail to more than 100 accounts. We got very good feedback about 50% from this survey. However, this survey was just only the first guideline to understand general opinion on buying a projector.

Our second survey was designed to understand our target market; we made interviews with four target customers. We tried to combine the data's we collected from the interviews. That way, we would be able to understand the needs and desires of our customers and see what features of our products we had to focus more. See Appendix 5.

Finally, we made the third survey to ask business travelers weight each pair of criteria and gave a score to each criterion that they would be more important see appendix 6.

Key learning and suggestion

By focusing on this section, now we know what the needs and desires of our target customers. For us, it was so important to understand their point of view, because throughout the innovation process, starting from innovative idea and going up to the commercials, customers satisfaction and right potential customer targeting, plays an important role.

Competitor Analysis

At this step, the competitive products of BenQ GP1 were identified. Samsung P410M is a comparable product with GP1 since it offers the similar weight, size, and features with GP1. 3M MPro110 and Optoma Pico are the representative product of the ultra-slim portable projectors. Also, Mitsubishi HC6800 is the high-definition projector that has been compared with GP1. We compare these three product platforms based on six main criteria that we got them from the qualitative interviews with business travelers. However, to compare these products in quantitative numbers, we create a questionnaire by using pair-wise comparison to ask the business travelers to weight each pair of criteria, see Appendix 6. Then use scoring model to compare these five products and rank the products based on the perspective of business travelers.

Key learning and suggestion

Applying Strategic Canvas of Blue Ocean Strategy in comparing product features/criteria can be a tool to help us find a strategy to improve our product in each feature that we are lower than the competitors. In addition, it can help us monitor competitive products that may be the disruptive innovation of our product in the future.

Communication Plan

For this section of the marketing plan, there was not a lot of guidance available in the marketing textbook. However, the white book on how to write a marketing plan gave good examples of various forms of marketing communications, as well as their reach, frequency, CPM, and overall effectiveness.

We began by identifying 3 central themes based on our customer's needs, and then determined which forms of marketing communications made the most sense for our product based on these three themes. From there – we just had to be creative. ;)

Key learning and suggestion

It is very important to clearly identify the benefits you are trying to demonstrate to your customers with your marketing communications, as well as your target audience. This helps you determine the types of marketing communication to use, and keeps your message clear, targeted, and concise.

Research Plan

In the marketing communication plan we have identified the points that we wanted to emphasize to get customers' attention. For every strategy we identified creative ideas that would best serve for the idea. Among these ideas we needed to pick the ones that would provide the best benefit-cost payoff by using surveys. Having identified the marketing advertisements we needed to identify the metrics that would help us to keep the track of the success of these strategies. We used marketing book to go inside and came up with

several metrics such as number of people attending our tradeshow organizations. At what stage of information we can leave into customers' minds in published media by using surveys.

Key learning and suggestion

It is very important to keep the track of the steps as well as taking the steps. If we can not measure how much we invest and how much we get we can not know whether we are successful or if we are in the right track. It is very important to allocate some resources on providing performance feedback in marketing communications research. It is also very important to take people's attention by communicating with people's emotions such as making them laugh by using advertisements.

Internet Plan

In this section of the marketing plan, we started to do the research by searching the product on different names of search engine. We used 'portable projector' as the key word. The outcome by doing so is that BenQ web site is already in the first top ten lists on all of search engines. After that, we discovered the BenQ web site to see what the characteristic of BenQ web site look like base on what general web site has been written in the second text book in which we all use as the reference in EMGT555 course (The Marking Plan, Third Edition by William M. Luther, 2010). We recognized that BenQ web site has the combination of different types of general web sites written in the text book. Furthermore, we looked up BenQ competitors' web sites and see that almost of them have the same web site characteristic; therefore, we came up with the objective of internet plan in which the company anticipates to obtain. Then we created the internet plan strategies to aim each objective. Finally, we came up with the strategy that BenQ should maintain to have the same basic characteristic as their potential competitors in order to allow its web site promote and delivery product/service.

Key learning and suggestion

Internet plan is one of the most important sections in marketing plan in order to bring the marketing plan to be more successful, especially in the globalization market where the world businesses are connected with the internet. This means that internet plan is a vital component of marketing plan in which management should not overlook it. It can bring a company who does not have this plan to fail in the market, or it can help the company to recover losing market share or others. To suggest for doing internet plan, first, management needs to set the internet objective plan coordinate with the company's objective in order to make sure that both are not conflict each other, and then management needs to create potential strategies to aim those objectives side by side.

Financial Analysis

To complete our marketing plan, we decided to do this part, financial plan. After defining the market size of business travelers in the U.S, we did estimation on defining the market

size of BenQ GP1 projector each year for five years. We applied the percentage of areas under the normal distribution curve of technology adoption life cycle to define size of the market opportunity of GP1 each year. The main costs of this project consisting of cost of goods sold, administration, research and development, and sales & marketing costs have been added on Excel Spreadsheet. Then we calculated operation profit each year, payback period, and ROI of this project under the estimation on interest rate about 5% every year.

Key learning and suggestion

Applying the percentage of areas under technology adoption life cycle curve is a fast and easy way to find the market sizes of new innovative products; however, before using this methodology on development of technology marketing plan in real companies, we need to find academic references to make sure that it is the applicable methodology.

Conclusion

What worked for our team?

- Identifying the target market as a group to make sure everyone was on the same page
- Splitting up our work but sharing it with the group at team meetings to get feedback and keep everyone aware of what others were working on
- Creating an outline of the marketing plan document early on in the process so we knew what needed to be done
- Ensuring everyone was educated on the features and benefits of our product from the beginning.

What did not work for our team?

- There were a few occasions in which it wasn't clear who was assigned to which section, and there was overlap of work.

Limitation

- The market shares high-end projector and portable projectors could not define; therefore, we analyzed the main competitors by based on information provided on the website, www.amazon.com.
- Our third survey on defining weight of the product features that business travelers use when they make a decision on buying a new projector was based on small size of sample; therefore, if we had more input the results of this section may change and BenQ GP1 may not be the number one of portable projector that would be able to provide high value to serve the demands of business travelers and also the following plans may change.
- We could not find the actual investment costs, product cost of BengQ GP1, so our financial plan is based on our estimation

Appendices

Appendix 1

Original List of Features to Consider for Product Comparisons

- Battery Life
- Size
- Lamp life
- Weight
- Resolution
- Internal vs. external memory
- Audio
- Price
- Recharge time
- Connection compatibility
- Wall color correction (based on wall color)
- Color support
- Screen size
- Lamp type
- Image contrast ratio
- Image brightness
- Max sync rate
- Native aspect ratio
- OSD languages
- Keystone perfect view (corrects for uneven surfaces)
- Zoom type
- Lenses aperture
- Video modes
- Digital video format
- Analogue video format
- Sound output mode
- Audio output power per channel
- # of audio channels
- Interfaces
- Input devices
- Security features
- Sound emission
- Power consumption
- Picture modes
- Accessories
- Instant on/off
- Auto search
- High altitude mode
- Appearance
- Availability
- Warranty
- Tech support availability
- Brand name
- Design
- Tripod ready
- Environmentally friendly
- Processor type
- Connections
- Ease of use

Appendix 2











Competitive Analysis of Mini-Projectors

Projector	Resolution	Brightness	Weight	Image size	Dimensions	Price	Supported formats	Other Features	Audio	Differentiator?
Ben Q GP1	858x600	100 Lumens	1.4 lbs	15-80"	5.35x2.12x4.72	\$499				
3M MPro110	640x480	12 Lumens	5.6 oz	6-50"	4.5x2.0x0.9	\$359				
Dell M109S	858X600	50 Lumens	.8 lbs	15-60"	4.2x3.6x1.2	\$499				
Optima Pico PK101	480x320	11 Lumens	4 oz	66"	1.97x.59x4.06	\$399				
Toshiba TDP-F10U	858x600	100 Lumens	1.4 lbs	15-60"	2.2x5.5x4.9	\$600				
Cinemin Swivel, WowWee	480x320	8 Lumens	6 oz	6-60"	4.7x2.1x0.9	\$350				
Samsung MBP200 (phone)	480x320		5.6 oz	8.5x11 - 50"	0.8 x 4.2 x 1.9		JPEG, GIF, Animated GIF, MBP MP3, WMA, OGG, AAC, WAV Video CODEC: DivX, Xvid, WMV9 Simple Profile, MPEG-2, MPEG-4; Audio CODEC: MP3, AAC, WMA Adobe PDF (.pdf) MS PowerPoint (.ppt) MS Word (.doc) MS Excel (.xls) Text (.txt)	Also a phone		Phone too, lots of file formats supported

Bug projector	480x320	9 Lumens							Stereo speakers	
Acer K10 Pico Projector		100 Lumens	1.21 lbs	60"	127x122mm	\$450	Requires Computer hook up	LED	Built in speakers	First projector with LED
Cinemin Station, WowWee	800x480	8 Lumens	6 oz	60"	4.7" x 2.1" x 0.9"	\$349	Connects to * iPod Classic (5G and 6G models) * iPod Nano (3G and 4G models) * iPod Touch (1G and 2G models) * iPhone (1G, 3G, and 3GS models), * Flip Video (most models) * Vado Pocket Video Cam * Camcorders (most models) * DV-cams (most models) * Digital cameras (most models) * DVD (and portable DVD players) * Blu-ray (and portable Blu-ray players) * Slingbox * PVRs	Battery - lasts over 2 hours, or AC	Built in speakers	Unique, 90 degree hinge
Aiptek Pocket Cinema V10	640x480	10 lumens	100 grams	6 - 42"	124 x 53 x 22 mm	\$399	JPEG, Video MPEG-4 (.AVI, .ASF, .MP4), H.264 (.MP4), M-	Can play from memor		

							JPEG (.AVI), MP3	y cards or built- in mem- or-y		
Microvision Show WX	848x480	10 lumens	4.3 oz	6 - 100"	14x60x118 mm	499\$		Battery - lasts 90 mins. Charge s via mini- usb. Laser display .	audio pass through (no speaker)	
Honlai Qingbar MP101	640x480	15 lumens		15-37"	76 x 102 x 54 mm					Docking Station for playing and recharging Options for iPod, iPod Touch or iPhone
Toshiba LED Pico Projector	800x600		100grams		10- x 4.5- x 1.7cm	600\$			mon speaker	
Adtec MP15A	640x480 or 800 x 600	15 lumens	147 grams		27mm x 58mm x 90mm	430\$		Battery - lasts 40 mins		
Logic Wireless Bolt (phone)	320x240			36-64"	0.9 x 1.9 x 4.6 in	600\$	<i>PowerPoint, Excel, Word. Conn ects with Laptop USB, TV, Xbox, Wii</i>	Project or mode up to 2 hours		touchscreen Phone
RXS Pico Media Projector	640x480	17 lumens	0.4 lbs	6 - 50"	1.9in. x 0.9in. x 4.5in.	490\$		70 min battery		

Competitive Analysis of LCD Televisions [2]

2009 LCD TV Product Comparisons											
					Displaying 1 to 10 of 2216		<< Previous 10 Next 10 >>				
TopTenREVIEWS Electronics TV LCD TV											
Rank	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	
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Reviewer Comments											
Lowest Price	N/A	\$4,195.00	\$1,029.88	\$2,399.95	\$1,275.00	\$2,239.00	\$2,295.00	\$2,025.00	\$780.00	\$2,595.00	
Overall Rating	<div><div></div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div><div></div></div>
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View Specifications	Go!	Go!	Go!	Go!	Go!	Go!	Go!	Go!	Go!	Go!	
View Screenshots											
Features											
Screen Size	55 in	55 in	40 in	42 in	46 in	47 in	52 in	52 in	40 in	52 in	
Resolution	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080	
120 Hz Refresh Rate	✓	✓	✓	✓	✓	✓	240 Hz	240 Hz	✓	✓	
LED Backlight	✓	✓		✓	✓	✓					
Contrast Ratio	50,000:1	1000000:1	10,000:1	50,000:1	29000:1	15,000:1	50,000:1	100000:1	50,000:1	50,000:1	
Screen Brightness	500 cd/m²	350 cd/m²	450 cd/m²	500 cd/m²	450 cd/m²	500	500 cd/m²	550 cd/m²	500 cd/m²	500 cd/m²	
Screen Response Time	5 ms	6 ms	4 ms	5 ms	6 ms	5 ms	8 ms	2 ms	8 ms	8 ms	
Digital Tuner	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
HDMI	4 connections	4 connections	4 connections	✓	3 connections	✓	4 connections	4 connections	4 connections	4 connections	
TV Depth (inches)	5 in	5.8 in	3.3 in		3.5 in		13.6 in		4.9 in	13.8 in	
Comb Filter	3DYC	3DYC	3DYC	3DYC	3DYC	3DYC	3DYC	3DYC	3DYC	3DYC	
Energy Star Approved	✓	✓	✓	5.5	4.9	✓	✓	✓	5.5	✓	
Manufacturer Warranty	1 year	18 months	1 year	1 year	1 year	1 year	18 months	1 year	18 months	1 year	
Memory Card Slot	MS						MS				
Picture in Picture		✓	✓		✓				✓	✓	
Power Consumption		248 Watt		20 Watt	270 Watt	30 Watt	320 Watt		230 Watt	37 Watt	
Sleep Timer	✓	✓			✓		✓		✓	✓	
TV Height (inches)		31.7 in	27.5 in	29.4 in	26.5 in	32.3 in	34.4 in		23.8 in	34.7 in	
TV Weight (lbs)		72.8 lbs	37.5 lbs	39.7 lbs	54	60.8 lbs			58.4 lbs		
TV Width (inches)		58.3 in	39.3 in	40.9 in	43.7 in	45.3 in	49.6 in		44.5 in	49.2 in	
Reviewer Comments											
Lowest Price	N/A	\$4,195.00	\$1,029.88	\$2,399.95	\$1,275.00	\$2,239.00	\$2,295.00	\$2,025.00	\$780.00	\$2,595.00	

Appendix 3

Figure 1: Ranking of features for each market segment identified

ow Labels	Average of resolution	Average of brightness	Average of weight	Average of image size	Average of dimension	Average of price	Average supported of format	Average of other feature	Average of audio
church	3.57	3.29	2.29	3.71	2.43	3.29	3.14	3.57	3.86
companies	4.00	4.00	2.71	4.43	3.00	3.14	4.43	3.86	4.14
elevators	2.71	3.14	3.43	3.00	3.71	4.14	2.57	2.29	2.71
gamers	4.86	4.79	3.00	4.71	3.71	3.57	4.29	4.57	5.00
home use	4.86	4.29	3.00	4.86	3.43	3.86	4.14	4.43	5.00
in car bus	2.57	3.29	3.43	3.29	3.86	3.86	2.57	2.43	3.43
Kids	2.93	3.14	3.14	3.43	3.57	4.43	3.14	3.00	3.29
people who move a lot	3.43	3.43	4.43	3.71	4.43	3.71	3.00	4.00	3.57
people who rent apts	3.43	3.14	3.57	3.86	4.00	4.00	3.00	3.71	3.57
people who travel	3.14	3.71	4.43	3.29	4.29	4.00	2.86	3.29	3.71
replacement for tvs	3.71	3.00	2.86	3.00	3.00	3.57	3.00	3.14	4.00
salesman	4.57	4.29	4.86	4.57	4.57	3.57	4.29	4.29	4.43
school	3.14	3.43	2.00	3.86	2.43	4.29	4.14	3.29	3.71
sport bar	4.57	4.57	2.86	4.57	2.71	2.71	2.86	3.00	4.57
(blank)									
Grand Total	3.678571429	3.678571429	3.285714286	3.87755102	3.510204082	3.724489796	3.387755102	3.489795918	3.928571429
Our Product's Rank	5.00	5.00	5.00	4.50	4.50	4.00	4.50	3.70	3.00

Figure 2: The top three segments that BenQ's features match with their demands

Expected Markets	Average of resolution	Average of brightness	Average of weight	Average of image size	Average of dimension	Average of price	supported format	Average of other featur	Average of audio	Total Score (SumProduc
church	3.57	3.29	2.29	3.71	2.43	3.29	3.14	3.57	3.86	125.459
companies	4	4	2.71	4.43	3	3.14	4.43	3.86	4.14	146.182
elevators	2.71	3.14	3.43	3	3.71	4.14	2.57	2.29	2.71	121.323
Gamers	4.86	4.79	3	4.71	3.71	3.57	4.29	4.57	5	166.634
Home use	4.86	4.29	3	4.86	3.43	3.86	4.14	4.43	5	163.516
in car bus	2.57	3.29	3.43	3.29	3.86	3.86	2.57	2.43	3.43	124.911
kids	2.93	3.14	3.14	3.43	3.57	4.43	3.14	3	3.29	130.37
people who move a lot	3.43	3.43	4.43	3.71	4.43	3.71	3	4	3.57	146.93
people who rent apts	3.43	3.14	3.57	3.86	4	4	3	3.71	3.57	140.007
people who travel	3.14	3.71	4.43	3.29	4.29	4	2.86	3.29	3.71	142.683
replacement for tvs	3.71	3	2.86	3	3	3.57	3	3.14	4	126.248
Salesman	4.57	4.29	4.86	4.57	4.57	3.57	4.29	4.29	4.43	172.478
school	3.14	3.43	2	3.86	2.43	4.29	4.14	3.29	3.71	130.248
sport bar	4.57	4.57	2.86	4.57	2.71	2.71	2.86	3	4.57	141.28
Grand Total	3.68	3.68	3.29	3.88	3.51	3.72	3.39	3.49	3.93	
BenQ GP1's Rank	5	5	5	4.5	4.5	4	4.5	3.7	3	

Appendix 4

First customer survey to gauge interest and awareness

Technology Marketing Survey

1. Mini Projector Customer Survey

Dear Sir or Mam,

This survey is developed to ask your opinions on a new innovative product called a “Portable Projector”. A portable projector is a small version of a typical office or home use projector that can fit in the palm of your hand.

1. What is your gender?

- ☐ What is your gender? Female
- ☐ Male

2. What is your age?

- ☐ What is your age? Under 18
- ☐ 18-25
- ☐ 25-35
- ☐ 35-45
- ☐ 45-...

3. What is your occupation?

- ☐ What is your occupation? Business owner
- ☐ Sale/ Marketing Representative
- ☐ Engineer/ IT professional
- ☐ Professor/Teacher
- ☐ Student
- ☐ Other

Other (please specify)

4. Have you ever used a projector?

- ☐ Have you ever used a projector? Yes
- ☐ No

If yes, what was your opinion? (advantages,

disadvantages)

5. Do you have any ideas to recommend for companies who are developing a portable projector and its support services?

Do you have any ideas to recommend for companies who are developing a portable projector and its support services?

6. Have you ever bought a portable projector or do you plan to buy a portable projector in the future?

☐ Have you ever bought a portable projector or do you plan to buy a portable projector in the future? Yes

☐ No

7. If yes, where did you buy or will you buy in the future?

☐ If yes, where did you buy or will you buy in the future? Internet shopping (Amazon.com, e-bay...)

☐ Store (Best buy, Office Depot...)

☐ Direct sale (Manufacturers website)

☐ Other (please specify)

8. How much have you paid or would expect to pay for it?

How much have you paid or would expect to pay for it?

9. If you had/have a portable projector, what would/do you use it for?

☐ If you had/have a portable projector, what would/do you use it for? Watching TV/movies/pictures

☐ Playing games

☐ Presenting

☐ Other (please specify)

10. If you had/have a portable projector, where would/do you use it?

☐ If you had/have a portable projector, where would/do you use it? Class room,

School use

☐ Meeting room, Office use

☐ Living room, Home use

☐ Other (please specify)

Appendix 5

Second customer survey to identify focus market segment's needs

Interview Questions

1. What is your name, where do you work and what is your title?
2. How long are you in this business?
3. How often do you travel for business or for your presentations?
4. How far do you travel? Do you carry-on or check baggage?
5. When you travel for business do you give presentations or share multimedia at your destination? What percent of the time?
6. How often do you make presentations?
7. How crowded are your audiences usually?
8. Do you bring your own laptop to share information?
9. Do you bring your own display device?
10. Do you use the devices that are already available at your destination? If so, have you ever had trouble or wasted time trying to get their devices to work?
11. Rate the following features in order of importance when displaying while on business (image resolution, audio, connection types, size/weight of device, cost, etc....).
12. What brand of projector are you currently using and why did you pick it?
13. What problems do you have with your current display devices? What would make this experience better for you?
14. Are you buying your own devices or does your company buy them for you? If you are buying, how much would you be willing to pay for our device?

Appendix 6 Questionnaire

Questionnaire for Portable Projector Project

Please fill out the following questionnaire in the same manner as shown in the example below:

Example: Please distribute 100 points for each pair of criteria. The more points a criterion gets the more important you consider that aspect.			
Quality of Pictures	47	53	Weight and Size

The following criteria are supposed to be *criteria used to make a decision for a portable projector* when looking at 6 different offers from 17 different portable projectors in the marketplace.

Quality of Pictures	50	50	Weight and Size
Quality of Pictures	60	40	Image Size on Screen
Quality of Pictures	90	10	Price
Quality of Pictures	40	60	Easy to Install (Plug-and-Play)
Quality of Pictures	90	10	Audio Quality
Weight and Size	35	65	Image Size on Screen
Weight and Size	90	10	Price
Weight and Size	36	64	Easy to Install (Plug-and-Play)
Weight and Size	77	23	Audio Quality
Image Size on Screen	90	10	Price
Image Size on Screen	30	70	Easy to Install (Plug-and-Play)
Image Size on Screen	70	30	Audio Quality
Price	10	90	Easy to Install (Plug-and-Play)
Price	20	80	Audio Quality
Easy to Install (Plug-and-Play)	100	0	Audio Quality

Pair-wise Comparison

C:\Users\Pat\Desktop\PCM.EXE

Relative Weights							
Project Title: Portble Projector							
Users	1	2	3	4	5	6	Incn
Person 1	0.21	0.15	0.15	0.02	0.43	0.03	0.130
Person 2	0.20	0.20	0.19	0.01	0.34	0.06	0.164
Person 3	0.19	0.28	0.24	0.08	0.22	0.00	0.037
Mean	0.20	0.21	0.19	0.04	0.33	0.03	0.057
Min	0.19	0.15	0.15	0.01	0.22	0.00	

1	Item Name	Definition
1	Quality of Pictures	
2	Weight and Size	
3	Image Size on Screen	
4	Price	
5	Easy to Install <Plug-and-Play>	
6	Audio Quality	

ESC=Exit, F1=Help, F2=Name/Items, F3=Save, F4=Display, —=Pairs.