USU Engineering Computer Lab
Customer Segmentation for Printing Services
Price Expectation Analysis
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INTRODUCTION

The purpose of this research is to determine the value of the built-in benefits offered by the poster printing service located at the Utah State University (USU) Engineering Computer Lab. The data was collected through online surveys and face-to-face interviews in June 2017. The target audience of respondents was determined by analyzing which departments are customers from and what was the purpose of the posters, this data is available in PostMaster and helped perform our customer segmentation. The two main questions that it tries to answer are:

1. Which are the most valued benefits?
2. Which are the benefits that customers would be willing to pay a small fee for?

RESULTS

Online Survey

The online survey was distributed among graduate students of all USU departments, USU faculty/staff, undergraduate researchers, and students enrolled in the USU Student Research Symposium for Spring 2017. Even though the total sample size was 260, some incomplete responses were deleted due to the lack of useful data, reducing the number of responses analyzed to 242.

The first section focuses on the demographics, the second on how benefits are valued and the third on market awareness. Students represented 89% of respondents of whom 42% were working towards their Doctoral Degree, 24% towards their Master's, 31% were completing their Bachelor's Degree and the rest marked "other". The College of Education and the College of Engineering had the highest response rate.

In the second section, approximately a quarter of respondents considered speed to be an important benefit, almost 22% chose free-reprints and both online ordering and spell/format check were deemed as important with a tie around 15%, the remainder counted towards paper variety and on-campus delivery. They signaled to be willing to pay a small fee for having their poster printed faster, like a "VIP" or "Priority" service, giving people the chance to expedite their order and get ahead in the line of jobs to be printed. Spell/Format check was also considered to be deserving of an extra payment to reassure that there weren't any errors along with a free-reprint service regardless of who made the mistake. Despite the fact that on-campus delivery wasn't frequently chosen as an important benefit, it was continuously suggested to be "worthy" of a small fee.

After including price and on-campus location as options, people ranked price as the most important factor when deciding where to print a poster. The second most important factor was speed and the third, on-campus location. However, on-campus delivery was ranked as the least important when taking this decision. For consistency purposes, the same question was presented in a different way, this time asking respondents to assign a numeric value to each item. Once again, price and speed were the first and second most valued benefits, followed by free-reprints and on-campus location.

Per the reports of the third section, approximately 77% had experience in printing a poster and nearly 73% were aware of the poster printing services offered by the ENGR Computer Lab at USU. Faculty is the biggest source of marketing due to a 41% of respondents finding out about the lab's services through them, 30% know the lab because a friend told them and 14% found out on site.

From our target audience, 46% have printed posters at the ENGR Computer Lab, 19% at the USU Library, 10% at the USU PDP, and 7% at FedEx, with some customers having used multiple of the mentioned locations as well as others. Regarding price expectations, 62% expect the ENGR Computer lab to be cheaper and 32% think it should be about the same as other poster printing places in Logan, UT. The remaining 6% expected it to be more expensive. After calculating odds ratios for price expectations using SAS (See Table 1), it was determined that compared to students, faculty is less likely to expect the lab to be cheaper than other places but is a lot more unlikely to expect the lab to be more expensive.

Table 1. Odds Ratios of Price Expectations

Analysis Of Maximum Likelihood Parameter Estimates									
Parameter			DF	Estimate	Standard Error	Wald 95% Confidence Limits		Wald Chi-Square	Pr > ChiSq
Intercept			1	4.1271	0.1270	3.8782	4.3761	1056.06	<.0001
Willingness	Cheaper		1	0.7012	0.1553	0.3967	1.0056	20.38	<.0001
Willingness	Expensiv		1	-1.6422	0.3154	-2.2604	-1.0241	27.11	<.0001
Willingness	Same		0	0.0000	0.0000	0.0000	0.0000	.	.
Occupation	Faculty		1	-2.1812	0.3987	-2.9627	-1.3997	29.93	<.0001
Occupation	Student		0	0.0000	0.0000	0.0000	0.0000	.	.
Willingne*Occupation	Cheaper	Faculty	1	-0.4499	0.5273	-1.4835	0.5837	0.73	0.3936
Willingne*Occupation	Cheaper	Student	0	0.0000	0.0000	0.0000	0.0000	.	.
Willingne*Occupation	Expensiv	Faculty	1	-20.9968	31150.13	-61074.1	61032.13	0.00	0.9995
Willingne*Occupation	Expensiv	Student	0	0.0000	0.0000	0.0000	0.0000	.	.
Willingne*Occupation	Same	Faculty	0	0.0000	0.0000	0.0000	0.0000	.	.
Willingne*Occupation	Same	Student	0	0.0000	0.0000	0.0000	0.0000	.	.
Scale			0	1.0000	0.0000	1.0000	1.0000		

Note: The scale parameter was held fixed.

LR Statistics For Type 3 Analysis			
Source	DF	Chi-Square	Pr > ChiSq
Willingness	2	42.34	<.0001
Occupation	1	87.85	<.0001
Willingne*Occupation	2	2.62	0.2692

$$e^{-0.4499} = 0.637691$$

Faculty/Staff is 0.6376691 as likely to expect the lab prices to be cheaper than students would expect.

$$e^{-20.9968} = 0.0000000007$$

Faculty/Staff is 0.0000000007 as likely to expect the lab prices to be more expensive than students would expect.

Interviews

All interviewees were USU professors that have printed posters in the past at the USU ENGR Computer Lab. The interviews were conducted at the respective faculty's office and did not last more than 10 minutes.

Respondents said that they use the lab's poster printing services because it is conveniently located. One respondent mentioned that it's fast, and another one said that the online ordering and delivery system also influences the decision to print there. They weren't able to name all the built-in benefits of the lab, but spell/format check, delivery and online ordering were mentioned.

Speed was ranked as the most important factor, followed by online ordering and spell/format check. Free reprints was either not known or not very important to the customer and despite the fact that paper variety was appreciated, one respondent mentioned that only uses Heavyweight paper and other expressed that would like to see more printing options, i.e. printing enlarged slides of a presentation instead of posters which are easier to carry and travel with instead of having a rolled poster. The interviewee also recommended that the lab promotes recycling by telling their customers to bring back the poster if they won't be using it again.

Another poster printing place that people use is FedEx. They offer overnight shipping to any FedEx location, so when someone is going to a conference that person can choose a location close to where the conference will be taking place and pick it up there instead of having to travel with it. Posters can also be laminated there and 11x17 posters can be printed in cardstock. None of the previously mentioned services are offered by the USU ENGR Computer Lab. Respondents also acknowledged that FedEx is significantly more expensive.

CONCLUSION

The research indicates that most customers are not aware of all of the built-in benefits provided by the ENGR Computer Lab. However, after being informed about these and what they consist of, speed and free-reprints are considered as very important. Despite these services, price is the most important determinant when deciding where to print a poster, followed by on-campus location and speed.

Customers are willing to pay an extra fee for on-campus delivery and having the spelling and format of the poster checked, before printing in order to avoid any errors. Being able to receive a faster service and expedite their printing was also deemed worthy of charging a fee. Another interesting finding is that faculty is less likely to expect the services to be more expensive at the ENGR Computer Lab than students are, which was an interesting response given that most professors are economically sponsored by their departments and most students are not.

RECOMMENDATIONS

- Promote poster printing services on MyUsu homepage and on the Research and Graduate Studies page http://rgs.usu.edu/undergradresearch/posters/#
- Charge $1.00 extra for delivery.
- Don't create a 'VIP' service where people can pay extra to get their posters faster. This doesn't go with the image nor vision of the ENGR computer lab.
- Increase the price of Heavyweight paper.
- Focus on speeding up the poster printing process. Give better training to teach consultants how to properly look for errors quickly and be able to handle the programs involved (PostMaster, Adobe Acrobat, HP Click, PPT).
- Add a $1.00 fee that covers spell/format check, and in case of any errors after printing, a free-reprint.
- If the poster has an error after being printed, and the person didn't pay for the above defined service, offer them a 50% discount for printing the poster again.
- Don't let customers walk away with errors in their posters, the lab doesn't want to be recognized for being "ok" with a bad poster.