6 Conclusion and Future Work

In this final chapter, this study will be finalized by summarizing the study in the conclusion section, and the possible extensions will be discussed in the future work section.

6.1 Conclusion

Increased Internet usage made email a popular medium for communication because of its low cost, quick turnover, and the flexibility of the connectivity via mobile devices. The benefits of email communication also attracted researchers to use it as a data collection method to explore, describe, and explain things via communicating large groups of people.

However, the nature of the communication with large groups is different than small ones due to the required effort to personalize messages according to the each recipient. As a result, researchers tend to write more generic emails, ignoring the recipient-specific details. Researchers investigated many response rate influences, and addressed that personalization of message content is an important factor to increase response rate (Dillman, 1991; Schaefer and Dillman, 1998). The messages that are not personalized result in low response rate on the answers expected from the recipients. As a consequence, this may end up with a nonresponse error.

Nonresponse error has been considered a major problem by many researchers, because the characteristics of large groups of people who do not response might result in a biased estimate of representation of the population. Hence, it effects the outcome of a research (Bogen, 1996).

6.1 Conclusion

For this reason, researchers investigated the possible theories why personalization contribute on response rate. While Dillman et al. (2009) emphasized the social exchange theory since the personalization of emails helps to build a connection between the respondent and the researcher, Barron and Yechiam (2002) stressed on the diffusion of responsibility theory in which being aware of other volunteers availability will result in a higher utility of not volunteering.

Researchers conducted studies investigate the diffusion of responsibility. Barron and Yechiam (2002) showed that the proportion of replies where they used single email address in the "To" field got 20% higher response and the proportion of "very helpful" replies was 187% higher than the replies where they used groups of email addresses. In the study of Selm and Jankowski (2006), the recipients showed concerns regarding the confidentiality when the header of the email contained all the email addresses of the other respondents explicitly.

Some other researchers investigated the social exchange theory. Heerwegh (2005) applied personalized salutations in the the emails, and got 6.9login rate to the provided survey link in the email than the unpersonalized group in their study. In the study of Joinson and Reips (2007), the power or status of the sender is combined with personalized status, they got 53.4% response rate while non personalized salutation with neutral power of sender status got 40.1% response rate.

Even though personalization of emails increases response rates, Dillman et al. (2009) emphasized on overwhelmed personalization that will still suffer of low response rates. Hence, the adequate amount of personalization should be considered on personalized emails. In addition, the experienced email users can identify if a message is written by a person or computer generated easily. Therefore, the digital world make the true authentic personalization more rare, and achieving such a level of personalization requires getting to know each recipient very well.

To understand what do existing applications provide to support personalized mass email

communication, the CRM, the help desk, and the email marketing applications are evaluated in chapter 3. Several features of those applications are considered as a feature to that can help researchers on their mass email communication. Some of those features are followings:

- Keeping client related information extracted from conversations in KVPs.
- Integration with popular email client such as Gmail.
- Importing recipients list from third part applications.
- Assigning emails to a recipient profile.
- Using dynamic variable in the emails to be replaced by their values.
- Assigning a help desk ticket to a assistant.
- Reusability of an existing email as a template.

However, none of the available products offers all these mentioned features that might help a personalized mass email communication under one product, and some of those features also needs additional effort to use since their application area is not mass email communication. Therefore, this study came up with an initial solution as a prototype in chapter 4. The prototype supported following features to help a researcher to reach a large groups of people in a personalized way with less effort:

- Kept extracted information in KVPs along with the recipient messages.
- Used dynamic variables to personalize the salutations of emails.
- Allowed to reuse earlier send messages as a template.
- Provided a tree structure to visualize the state of the conversation with the used templates.

Even though, the prototype provided the above mentioned features to support a personalized mass email communication, we moved the prototype from its origin product, EmailValet to a new project after the informal user test with an organization who does mass email communication regularly at Stanford. The user test ended up with new features, and made us realize the drawbacks of existing EmailValet as a email client that we used in the prototype.

6.1 Conclusion

The improved requirements after user test brought up the final solution in chapter 5, and its features to support mass email communication as follows:

- Recipients information can be synchronized to the Myriad via Google Spreadsheet to remove the effort on importing and exporting recipients information from researchers.

- A researcher can assign assistants to an email campaign to interact the flow of a mass email communication with tasks such as extracting information from the incoming answers, proofreading the primary researcher's replies before sending, or even writing replies to those answers.

- Extracted respondents information can be recorded to recipients' profiles in KVPs during the whole state of a campaign.

- Those recorded KVPs can be used as dynamic variables to personalize the content of the emails.

- Reusability of exiting emails, and visualizing the state of the conversation.

- Provided decision-making mechanism to automate earlier decisions on sending emails in a user verified manner.

- Provided visual cues to notify users what is the state of communication with individual recipients, and suggesting potential action according to the previous decisions of the user.

- Each recipient's all conversations and extracted information are provided under one view to conveniently reach all the necessary information to write recipient specific personalize emails.

Considering the features gathered in the final solution, we provided a workflow to researchers reducing the amount of time to personalize the content of the emails. If we take the Effort vs Personalization chart from figure 4.2 into consideration again after the final solution, it could be replaced as in the figure 6.1 compared with other products in the market focusing on email communication and data collection. Considering the user feedbacks, and the amount of people that already actively using Myriad in its beta stage, we believe that Myriad becomes more closer to the gold standard of effort vs. personalization that annotated in the figure.

However, there are possible future work that can enhance the existing solution to a better

state, and remove the existing restrictions as we will discuss in the next section.
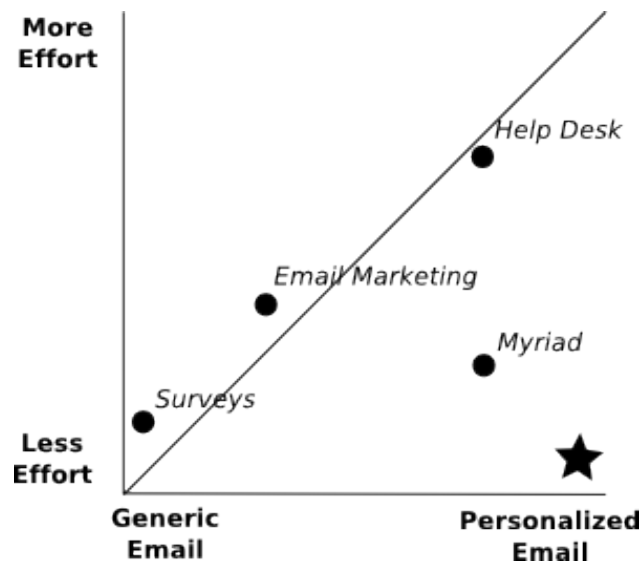

Figure 6.1: Effort vs Personalization and the Comparison of Available Solutions

6.2 Future Work

The provided assistant support in the final solution helps researchers to share the tasks to extract information from emails, to proofread the primary researcher's replies before sending, to write replies to recipients' emails, and to verify the rule-based actions before taken.

Along with the assistant support, the system could provide an option in which crowd of anonymous workers can do the tasks of assigned assistants as a crowd assistant. If the system provides the required functionality to involve crowd assistants, the decisions on the possible tasks in a mass email communication can be done by anonymous crowed workers.

Surowiecki (2005) stated that under the right conditions, groups can be remarkably smart, and even smarter than the smartest person within them. Therefore, if you try to solve a complicated problem or try to make a decision, the best thing that can be done is to ask a group instead of trying to find an expert. Therefore, leveraging crowed assistants can

minimize the work that a researcher need to do at a personalized mass email communication.

Another improvements could be about the dynamic variables in the messages. KVPs were used in the messages as dynamic variables to personalize the content of the messages as described in section 5.2.4. However, when communicating with large groups of people, some KVPs will not be applicable to some recipients, or other irregular KVPs need to be used to personalize messages if some recipients in a large group. When we investigated available products in the market in chapter 3, Zendesk solved this issue by adding conditional logic to the dynamic variables as illustrated in listing 3.1. Such an extension would be an option for Myriad to avoid creating additional email templates to write a similar email content with minor changes on KVPs.

In chapter 3, we saw that that CRM applications provide task management option to help users to remind the tasks. For example, Highrise allows to associate a task with an email to let users easily browse to the source of the task in the provided task list. Currently, Myriad users can leverage KVPs for the same purpose by adding a key named "task", and add a value according to the recipients. However, this avoids the one of the design principal of separation of concerns since the logic behind the KVPs are to keep extracted information from the recipients' emails, and use them to personalize emails. Besides, KVPs' are connected to the recipients' profile in a campaign which is not useful to add task messages related to a message of a recipient. Therefore, a task management feature in Myriad could be useful for researchers to attach reminder messages as a task along with recipients messages, and a list of those tasks can be shown at the main view of a campaign.

One of the Myriad user mentioned about the email editor and its attachment handling in the user testimonials, section 5.4.2. Currently, Myriad provides an HTML editor to compose emails, however it does not provide to add an attachment option. This was because of the limited development time, and it was not the high priority to add this feature since users still able to use Gmail to compose an email, and Myriad will able to

import it with its attachment. Therefore, a better HTML editor with email attachment feature would necessary to accomplish all email composing tasks in the Myriad.

Next improvement could be on the visualization tree of the communication state. The current visualization tree's nodes are arranged according to the email templates, and their order in the communication. However, a user could create all the email templates at the beginning of a campaign, and use them according to the recipients answer later on. In this case, all those templates will be considered as many root nodes of a tree loosing the hierarchical structure to visualize the communication state. Therefore, Myriad could provide rearrangement of those nodes in the visualization tree with an ability of drag-and-drop of each nodes.

Finally, a better workflow by the provided rules created according to the decision on sending emails. Currently, Myriad saves a filtering conditions of a recipient search as a rule to send emails next time without searching the matching conditions of recipients again. This feature is quite unintuitive since when user browse to the rules view, there will not be any defined rules unless user uses the provided filtering options to get a subset of the recipient list, and send an email to those recipients afterwards. To make this feature more intuitive, and define the workflow of a mass communication before hand, Myriad could offer an option to create those rules under the rules view. Therefore, a researcher can create the rules, and assistants can verify and send emails according to those matching rules or automate the process by the provided option under the rules view.