ACKNOWLEDGMENTS

I would first like to thank my thesis advisor Emil Robert Kaburuan, Ph.D. of Computer Science at Bina Nusantara University. The door to Prof. Emil's office was always open whenever I ran into a trouble spot or had a question about my research or writing. He consistently allowed this paper to be my own work but steered me in the right direction whenever he thought I needed it.

I would also like to thank the experts who were involved in the validation survey for this research project: Nahda Kurnia Juniati, M.Psi. and Diah Puspasari, S.Psi., M.Psi. Without their passionate participation and input, the validation survey could not have been successfully conducted.

I would also like to acknowledge Anditya Arifianto, S.T., M.T. of the School of Computing at Telkom University as the second reader of this thesis, and I am gratefully indebted to his for his very valuable comments on this thesis.

Finally, I must express my very profound gratitude to my parents and to my husband for providing me with unfailing support and continuous encouragement throughout my years of study and through the process of researching and writing this thesis. This accomplishment would not have been possible without them. Thank you.