community exercises. The community exercises involve a real time simulation of a disaster event and are integrated into an existing exercise that the community conducts for readiness each year. This evaluation exposes information at different time intervals and asks the community to resolve different scenarios by using the tool developed. The evaluation conducted takes on the form of a "table-top" exercise in which information injects provide details about the current disaster situation and specify potential goals and course of action. In return, the participant uses the system to gather information to best assess the situation and provide details about the actions they will take. We gather information from the user about what information they found to derive their conclusions or lack thereof. This information allows us to better understand how those techniques overall improve the information effectiveness.

Feedbacks from our users are overwhelming positive and suggest that our system can be used not only to share the valuable actionable information but to pursue more complex tasks like business planning and decision making. There are also many collaborative missions that can be undertaken on our system which allows public and private sector entities to leverage their local capacity to serve the recovery of the community. Our initial work has been recognized by FEMA (Federal Emergency Management Agency) Private Sector Office as a model in assistance of Public-Private Partnerships [21].

7. SYSTEM OPERATION AND CONCLUSION

FIU has spent over $600K in the development of the application and has received over $400K in sponsored research or industry donation. The system is utilized by over 100 companies in local communities and County emergency agencies in the south Florida area, which facilitates the collaboration on their mutual interest of disaster preparedness, response and recovery and benefits. The system is monitored 24/7 via scripts that verify application, database, web server, and hardware availability. The system is managed in a revision control system and is running through a test suite that validates key functionality such as report submission, keyword searching, and dynamic queries.

The potential impact of this research on the economy is enormous. A study by the Insurance Information Institute (III) shows that significant economic impacts can result from even minor events; an event that forced the permanent closure of just 1% of businesses in Broward, Miami-Dade, and Monroe Counties (the South Florida tri-county area) would result in 13,500 lost jobs, over $1.8 billion in lost sales, and over $414 million in lost payroll for the first year. Our analysis shows that, if our system helps 5% of the companies in the South Florida area to speed up their hurricane recovery by 1 week, it will prevent more than $200 million dollars of non-property economic losses that would result from that week's closure [6].

8. ACKNOWLEDGMENTS

9. REFERENCES

[1] The Conference Board. Preparing for the worst: A guide to business continuity planning for mid-markets. Executive Action Series, February 2006.

[2] R. Berg. Hurricane Ike Tropical Cyclone Report. NHC. Retrieved 2009-09-12.

[3] Wikipedia. http://en.wikipedia.org/wiki/Restlet.

[4] R.T. Fielding, (2000), Architectural Styles and the Design of Network-based Software Architectures, Doctoral dissertation, University of California, Irvine.

[5] V. Hristidis, S. Chen, T. Li, S. Luis, and Y. Deng. Survey of data management and analysis in disaster situations. The Journal of Systems and Software, 83:1701–1714, 2010.

[6] L. Zheng, C. Shen, L. Tang, T. Li, S. Luis, S. Chen, and V. Hristidis. Using data mining techniques to address critical information exchange needs in disaster affected public-private networks, KDD '10, pages 125–134, 2010.

[7] M.D. Choudhury , W. A. Mason , Jake M. Hofman , Duncan J. Watts, Inferring relevant social networks from interpersonal communication, Proceedings of the 19th international conference on World wide web, April 26-30, 2010.

[8] I. Kahanda and J. Neville. Using transactional information to predict link strength in online social networks. In Proceedings of the Third International Conference on Weblogs and Social Media (ICWSM), June 2009.

[9] S. Yoo , Y. Yang , F. Lin , I. Moon, Mining social networks for personalized email prioritization, Proceedings of the 15th ACM SIGKDD international conference on Knowledge discovery and data mining, June 28-July 01, 2009, Paris, France.

[10] V. R. Carvalho , W.W. Cohen, Ranking users for intelligent message addressing, Proceedings of the IR research, 30th European conference on Advances in information retrieval, March 30-April 03, 2008, Glasgow, UK.

[11] I. Horn, A. Leichtberg, N. Leiser, Y. Matias, and R. Merom. Suggesting friends using the implicit social graph. In Proceedings of KDD-2010, pages 233–242.

[12] M. Jayapandian and H.V. Jagadish. Automated creation of a forms-based database query interface. In Proceedings of VLDB 2008, pages 695-709.

[13] M. Jayapandian and H.V. Jagadish. Expressive query specification through form customization. In Proceedings of EDBT 2008, pages 416-427.

[14] M. Jayapandian and H.V. Jagadish. Automating the design and construction of query forms. IEEE TKDE 21(10): 1389-1402, 2009.

[15] P.P. Talukdar, M. Jacob, M.S. Mehmood, K. Crammer, Z. G. Ives, F. Pereira, and S. Guha. Learning to create data-integrating queries. In Proceedings of VLDB 2008, pages 785-796.

[16] H. Tong, C. Faloutsos, and J. Pan. Fast random walk with restart and its application. In Proceedings of ICDM 2006, pages 613-622.

[17] B.J. Frey and D. Dueck, Clustering by passing messages between data points. Science. 2007

[18] G. Erkan and D.R. Radev, Lexpagerank: Prestige in multi-document text summarization. In Proceedings of EMNLP, 2004.

[19] Twitter API, http://apiwiki.twitter.com.

[20] FEMA, http://www.fema.gov.

[21] FEMA public Private Partnership Models. http://www.fema.gov/privatesector/ppp_models.shtm. under Miami-Dade County.

[22] comScore Press Events. http://www.comscore.com/Press_Events/ Press_Releases/2010/3/Facebook_and_Twitter_Access_via_Mobile_ Browser_Grows_by_Triple-Digits. March 3, 2010.