

Author's Accepted Manuscript

Evaluating the Impact of Network Loads and Message Size on Mobile Opportunistic Networks in Challenged Environments

Shantanu Pal



PII: S1084-8045(16)30348-4
DOI: <http://dx.doi.org/10.1016/j.jnca.2016.12.030>
Reference: YJNCA1813

To appear in: *Journal of Network and Computer Applications*

Received date: 9 July 2016
Revised date: 6 November 2016
Accepted date: 25 December 2016

Cite this article as: Shantanu Pal, Evaluating the Impact of Network Loads and Message Size on Mobile Opportunistic Networks in Challenged Environments
Journal of Network and Computer Applications
<http://dx.doi.org/10.1016/j.jnca.2016.12.030>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Evaluating the Impact of Network Loads and Message Size on Mobile Opportunistic Networks in Challenged Environments

Shantanu Pal^{a,*}

^a*School of Computer Science, University of St Andrews, Scotland, United Kingdom*

Abstract

The use of mobile opportunistic networks may help users to gain access to an available network connection for communication in challenged environments. For instance, areas that lack an available infrastructure for communication (e.g., rural or sparse areas) or areas with an infrastructure where the network connection is not as accessible (e.g., restricted/full of interference access networks or a high cost roaming zone). In this paper, we observe how the overall network performs with the changes of network load (e.g., number of messages) along with the long-sized messages in such environments. With real-world trace-driven simulations, we compare and contrast the impact of the message generation rates and the message size in different opportunistic routing protocols in a challenged environment to see this performance impact. Our experimental results show that in such environments, mobile opportunistic networks improve the overall message delivery performance using user's interactions and social collaborations even with higher message generation rates and increased message sizes.

Keywords: Mobile opportunistic networks, Challenged environments, Opportunistic routing, Performance impact, Social collaborations

*Corresponding author

Email address: sp66@st-andrews.ac.uk (Shantanu Pal)

Download English Version:

<https://daneshyari.com/en/article/4955998>

Download Persian Version:

<https://daneshyari.com/article/4955998>

[Daneshyari.com](https://daneshyari.com)