

HW2: Paper Review

Paper 1:

Name:

A. Garyfalos and K. Almeroth, "Coupons: A Multilevel Incentive Scheme for Information Dissemination in Mobile Networks", IEEE Transactions on Mobile Computing, vol. 7, num. 6, pp. 792-804, June 2008.

Familiarity: Some Knowledge

Recommendation: Likely accept

Strengths: The idea of coupons as an incentive platform for network driven information propagation is an important next step in virtual economy, peer to peer networks and aware networking applications. The paper has great merit and moving it towards implementation is important.

Weaknesses: Hard to wrap around what is being presented in the paper. Partly because so much previous work is mentioned or it seems that all the preliminary information is necessary – reader feels lost. I feel might be due to the revision requirements? Maybe needs “Related Work” section for the information.

Detailed Comments:

- Mis-spellings or typos example:
(suing instead of using top right side page 7)
- Node degree maybe interesting to see where this node density can be found or a discussion of distance that connectivity of the handset can stretch over etc.
- On page 10, section 5.1: Malicious users in sparse environment are actually performing a needed or required function. Based on the analysis of the protocols in sparse locations continued rebroadcast was helpful in achieving needed coupon penetration. So if thee dis-continue to retransmit in sparse location you actually observe a QoS decrease, which is important to understand. It might make sense to use them as part of protocol where admin can randomly or restrictively give this property to some users ie some users do not have this and some do. In sparse environment it makes system efficient. Not a problem but an environmental difference.
- Page 13, section 6: Conclusion can also include more information on how this can be used and what can be studied in the future.

Paper 2:

Name: Measuring serendipity: connecting people, locations and interests in a mobile 3G network, IMC 2009

Link: (www.cs.northwestern.edu/~ict992/docs/serendipity.pdf)

Familiarity: Familiar

Recommendation: Likely accept

Strengths: One of first public analysis of person's mobile computing use, geo-location and habits over time on the large scale 280k. Provides a small insight into the amazing amount of information the mobile computing device can provide about people and the trends in their activity.

Weaknesses: Subjectivity analysis due to limited data. Still highly limited in geographic coverage, does not disseminate handset information and the user activity set is not representative of population – provides potentially skewed results.

Detailed Comments:

I see heavy bias of the results towards internet heavy devices of the carrier. ie 20% of devices at driving 80% of the traffic so his analysis represents 20% of the market who are mobile data heavy.

Author needs to think in more deeply about mobile user behavior to draw more detailed conclusions. For example if a user is highly mobile people who visits more than 25 hotspots within the time span given, that person may not do intensive activity (something that requires more than 1 minute of attention) on their mobile device – because they are busy moving around. While checking email take just take a few seconds. Also it might be the case the application on the phone accesses a data service but the user does actually use the information because that application checks with the server periodically.

To improve:

- As the investigator mentions, they do not differentiate the handset and that can be a source of skewed data. The test needs to be re-run with the understanding of the handset and its internet/media capabilities. This usually determines what the mobile computing device is adopted to do ie some are music player phones, some are email phones etc. If in the data set handset use is skewed towards a certain type of handsets – you could achieve mis-leading results. Also important is to understand the carrier. If all the there are some outlier, but app use if carrier and handset specific -
- Networking analysis and user interaction analysis wise few points:
 - o Mobile sites, apps and services have different requests per visit ratios
 - o Mobile apps and services have different internet connectivity permission settings. (Also different from handset to handset and carrier to carrier.) Assuming these have the three basic options: no internet allowed, request authorization each time, and automatically connect – usage would be different for each. Email for example if enabled and connected to user's active account has internet settings set on automatically connect every set amount of minutes to check for new messages. It requires no user interaction to

connect and check with the server each time. Instead of social networking mobile site would require the user to actually interact with the phone to get to the site and see new info. This needs to be evaluated in the paper because the user might not actually check his email as often as it connects to the server. Also because bandwidth for email messages are much smaller than media download.

- One of the metrics discussed through out the paper is number of locations users visit within a week etc see figure 4, page 6. The information is based on the logs of people actually requesting data via any of the monitored locations. The lack of requests can be taken as the lack of presence of the user but in reality only means that the user did not access data services in the cell. If we take into account handset capabilities differences and application internet permissions, we can see that data can be further skewed here as well.
- Page 3, section 2.2.1: a lot of interesting data presented but it is confusing because it seems to lack purpose or order. Also the word choice seems strange and confusing, as though to build up the importance of the finding but again without a clear mission. :