optimization techniques as described above will facilitate a fair head-to-head comparison in the future.

•*Adapting PARCEL for traffic encryption:* Today 67.2% of the top 151,509 Alexa pages still use HTTP [10] and only 7.25% of the mobile traffic in NorthAmerica is encrypted [30]. However, recent reports do suggest that the aggregated encrypted traffic is increasing throughout the globe [30]. Dealing with HTTPS traffic is an issue not only for *PARCEL* but also for many proxy-assisted solutions([5,6]) that involve web-page parsing. While our current *PARCEL* implementation lets HTTPS traffic follow the normal path without using our proxy, one approach to handling HTTPS traffic is using a trusted, per-client proxy, as we have discussed in the design section (§ 4.5). In the future, we hope to investigate potential issues around personalizing *PARCEL* proxies, and tackle questions around how they must be deployed, placed, and managed. Understanding the cost of running personalized proxies with large number of users is an interesting direction for future research.

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