Infrastructure Sharing for Mobile Network Operators
Analysis of Trade-offs and Market
ABSTRACT

• We analyze the trade-off between increasing the transmit power of a BS and the intensity of BSs owned by the buyer MNO required to achieve a given quality-of-service in terms of the SINR coverage probability.

• Also, for a seller MNO, we analyze the power consumption of the network per unit area which is shown to be a piecewise continuous function of BS intensity, composed of a linear and a convex function.
EXISTING SYSTEM

• The conflicting problems of growing mobile service demand and underutilization of dedicated spectrum has given rise to a paradigm where mobile network operators share their infrastructure among themselves in order to lower their operational costs, while at the same time increase the usage of their existing network resources.

• We model and analyze such an infrastructure sharing system considering a single buyer MNO and multiple seller MNOs.
Accordingly, the BS intensity of the seller MNO can be optimized to minimize the areal power consumption while achieving a minimum QoS for the buyer MNO.

We then use these results to formulate a single-buyer multiple-seller BS infrastructure market. The buyer MNO is concerned with finding which seller MNO to purchase from and what fraction of BSs to purchase.

On the sellers’ side, the problem of pricing and determining the fraction of infrastructure to be sold is formulated as a Cournot oligopoly market.
HARDWARE REQUIREMENTS

- Processor: Intel core i3
- RAM: 2B
- Hard Disk: 20 GB
SOFTWARE REQUIREMENTS

• Operating System : LINUX
• Tool : Network Simulator-2
• Front End : OTCL (Object Oriented Tool Command Language)
REFERENCE


