

Wireless Mobile Network Planning and Optimization – A Tool Based Approach

KNR Surya Vara Prasad, Hemant Kumar Rath, Anantha Simha

Problem Statement

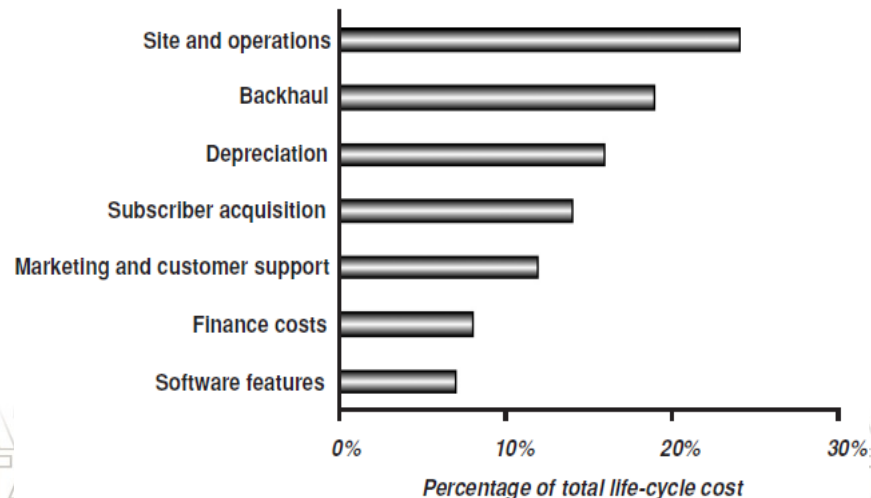
Can we provide a solution to Mobile operators for Network Planning and Optimization, which can reduce the CAPEX and OPEX without compromising the QoE?

What is Needed?

1. Topography, User density/type details, Application types & QoS, Technology [GSM, 3G, LTE]
2. Regional or Globally Optimal ?
3. Improve spectral efficiency or network usage

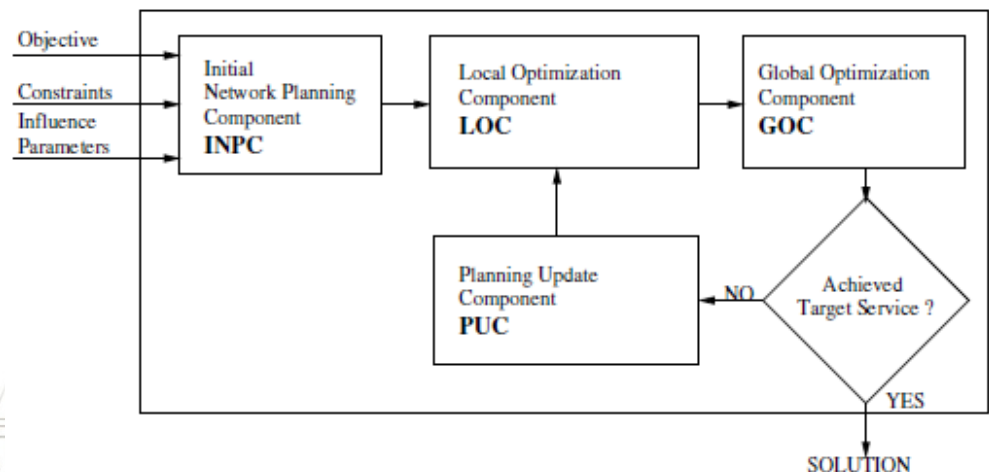
Need of Optimization and Planning

1. CCC – Cost, Coverage and Capacity are the key issues



Solution

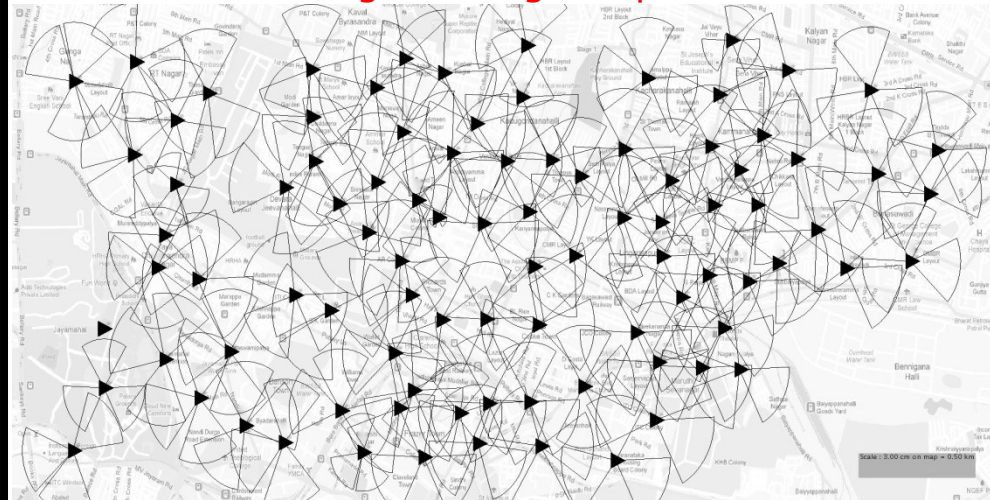
1. Matlab based solution – a Joint Clustering and Game Theoretic Approach
2. Dynamic solution based on user or operator requirement



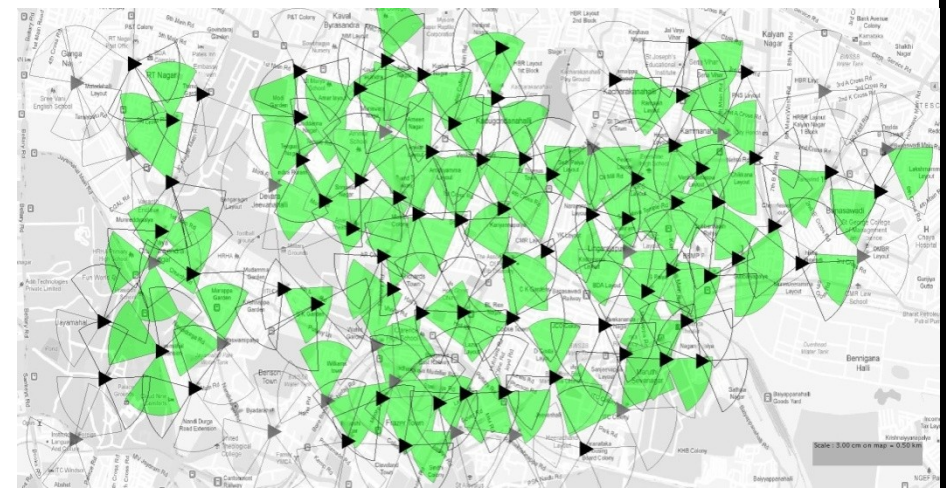
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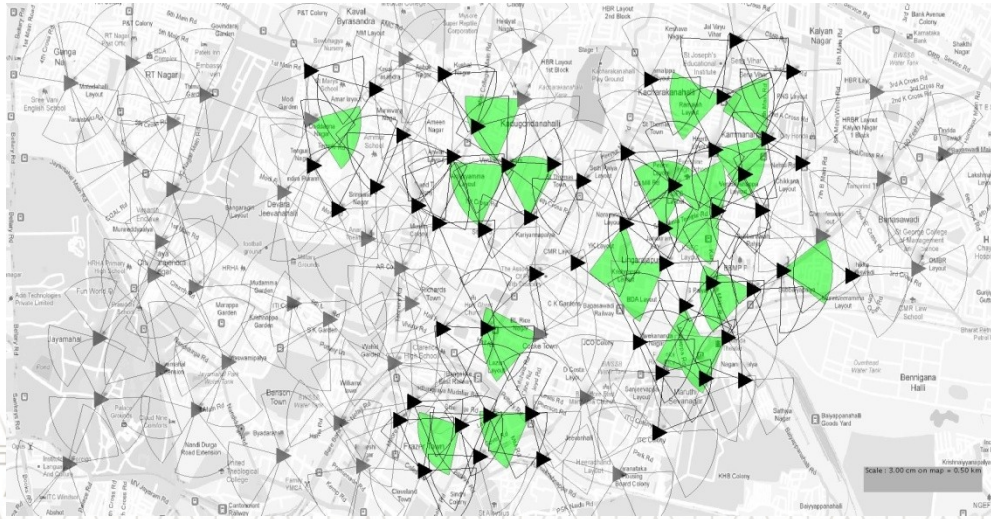
Existing Coverage Map



Optimization based on Coverage only



Optimization based on Capacity and Coverage



Coverage verification through Drive-Tests

