

RURAL CONNECTIVITY USING 5G NETWORK HOST NETWORKS: GAME THEORY FRAMEWORK

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The challenge

Rural areas have poor or no internet connectivity.

WHAT ABOUT SHARING A NETWORK WITH OTHER OPERATORS USING 5G NETWORK HOST NETWORKS?

SHAPLEY

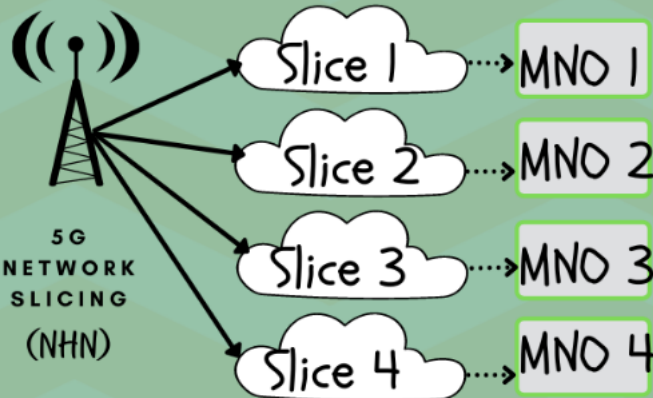
Game theory



Aha moment!

Let's use 5G network slicing that supports multi-tenancy, also known as neutral host network (NHN). All the operators can co-exist on the same physical network but different virtual networks.

The proposal



MNO - Mobile network operator

Cooperation



SLA

SERVICE LEVEL AGREEMENT



MNOs' costs in different scenario

MNO(s)	COST	
1	£350,000	5
2	£400,000	M
3	£475,000	1
4	£575,000	2
1,2	£500,000	3
1,3	£560,000	4
1,4	£630,000	
2,3	£550,000	
2,4	£745,000	
1,2,3,4	£850,000	

Conclusion

Reduced cost per operator

Profitable returns for the operators

Yay! Internet connectivity!



Future work

What happens if there is no...

