Eric Rasmusen[1]
April 20, 2018

## Net Neutrality, Double Marginalization, and Natural Monopoly

This paper explores two effects of net neutrality that might be expected to hurt consumers. First, it disallows contracts with transfer fees that could prevent double marginalization caused by the successive monopolies of content and service provision. Second, it reduces the profits of service providers, which results in small markets being entirely unserved because the price to consumers is insufficient to reach zero profits and in larger markets being served by only one service provider because entry of a second provider would reduces profits below zero. These harms must be set against the well-known benefit of net neutrality in encouraging content innovation.

*Question: Are these new ideas?*

**The Model.** Zero, one, or two service providers choose to enter the market. Each has a fixed cost $K_s$, a constant marginal cost $c_s$, and a price of $p_s$ which takes the monopoly level $p_s^*$ or a smaller duopoly level $p_s^d$. There are one or more content companies, whose demand does not depend on each other. Each has a fixed cost $K_c$, a constant marginal cost $c_c$,and a price of $p_c$. There is a continuum of consumers of size $M$. Quantity demanded of internet service is $m \cdot Q(\Sigma_i^n P_{ci} + P_s)$.

The content companies choose prices given the expected service prices. Under deregulation, the service providers simultaneously offer all contract companies a lump sum fee $T$ each for access to their customers.

For any regulatory regime, there will exist in equilibrium $m_1$ and $m_2$ such that if $m \leq m_1$, no service providers enters, if $m_1 \leq m \leq m_2$, one service provider enters, and if $m > m_2$ then two service providers enter.

*Question: Does net neutrality rule out contracts agreeing on prices between content and service providers? Does deregulation allow it? I will assume the answer to both is Yes.*

**Model 1: One content company. Consumers value the package of content plus service and will pay zero for either product alone.**
Net neutrality: double marginalization.
Deregulation: No double marginalization. $m_1$ will be smaller. $m_2$ will be bigger.

**Model 2. 1,000 content companies, all valued equally by consumers.**
Net neutrality: double marginalization.
Deregulation. No double marginalization. $m_1$ will be smaller. $m_2$ will be smaller.

[1]Dan R. and Catherine M. Dalton Professor, Department of Business Economics and Public Policy, Kelley School of Business, Indiana University, Bloomington Indiana. Erasmuse@indiana.edu. http://www.rasmusen.org/papers/net-neutrality.pdf