USO design in a competitive environment

Axel Gautier and Jean-Christophe Poudou
Discussant: Lionel Janin

ARCEP
lionel.janin@arcep.fr

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Context

- Volumes are declining in most developed economies (-3% in France in 2011), in relation to e-substitution:
  - e-mail and phone calls instead of personal letters
  - SMS instead of Season's greetings
  - on-line bill and commercial documents
  - on-line newspapers
  - more on-line advertisement, less direct mail

Question 1: What is the market under consideration?

Are you considering the customer as a receiver or a sender?

- Nowadays, the sender market for residential customers is limited (16% of mail volumes in France)
- If considering the receiver situation, then the fact that the receiver is not the one (directly) paying for the service should be taken into account in a model of competition

The model

Competition between 2 vertically differentiated firms

Firm 1 is representing a postal operator. Firm 2 is supposed to be the Internet

- Vertical differentiation (à la Mussa-Rosen), quality $x_1 < x_2$
- 2 regions: urban (low cost) and rural (high cost)
- Technology 1: Cost is quadratic in quality plus a fixed cost f
- Technology 2: Fixed cost F in rural area. F is sufficiently large so that the coverage of rural area is never profitable

Question 2: What is *quality* in the model?

Is it frequency of delivery or transit time?

The hypotheses

The hypotheses about the USO

- **Ubiquity** The service is offered in both regions
- **Affordability** Prices and quality should be set so as to ensure full coverage $U(\underline{\theta}) \geq 0$: an interesting suggestion as to what is affordable
- **Uniform quality** Same quality in both regions
- **No uniform price** Price discrimination between the 2 areas is allowed. This seems at odd with what we observe in practice: uniform price for single piece item is a universal service requirement in France. Even in telecoms, operators are often choosing to differentiate quality between regions but keeping the same price
- **Sustainable** Firm 1 should be profitable $\pi_1 \geq 0$

The results

The propositions in the paper

Postal only (benchmark situation) Welfare maximization calls for a higher quality than profit maximization

Postal and alternative technology The postal firm prefers a lower quality than in the benchmark case. The welfare maximizing quality is also lower than in the benchmark case. The sustainability constraint might be binding

Shared financing A universal service fund including both firms allow to relax the sustainability constraint. It is welfare improving, as long as taxes are non-distortionary: when is it the case?

Ubiquity constraint on the technology 2 Costly in any case because of the fixed cost F

Thank you!