

# **MARKET FAILURES AND PUBLIC POLICY**

**Jean Tirole, December 8, 2014**

**Nobel Lecture in Economic Sciences**

**Dedicated to the memory of Jean-Jacques Laffont**

# **I. INTRODUCTION**

## **II. RESTRAINING MARKET POWER**

## **III. TWO-SIDED MARKETS**

## **IV. INTELLECTUAL PROPERTY**

## **V. CONCLUDING REMARKS**

# Industrial organization's long tradition

- French engineer-economists Cournot (1838) and Dupuit (1844)

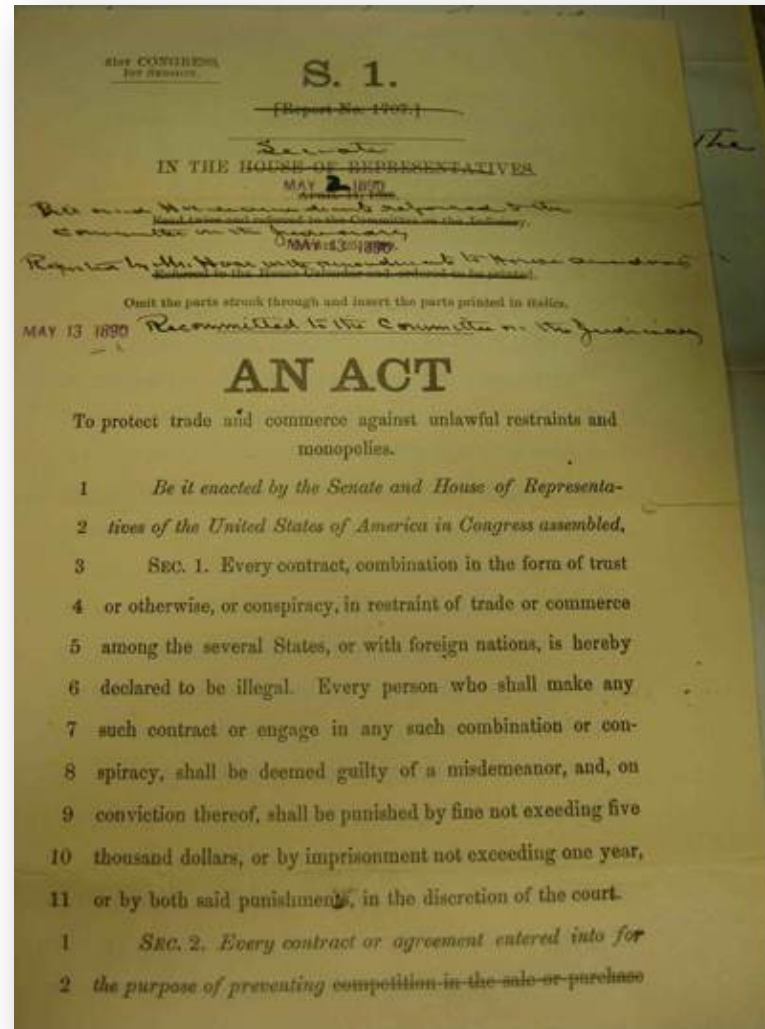


**Antoine Augustin Cournot**



**Jules Dupuit**

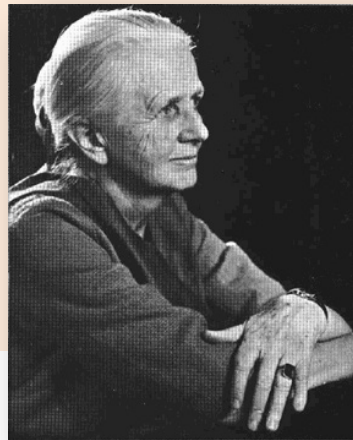
- Antitrust revolution post Sherman Act (1890)...



- ...comforted by Harvard Structure-Conduct-Performance paradigm (1930-1970)



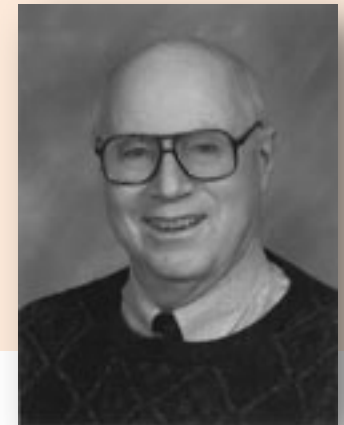
**Ed Chamberlin**



**Joan Robinson**



**Joe Bain**



**Michael Scherer**

- Chicago school critique (“empiricism without theory”) and counterrevolution (1960-1980)



**George Stigler**



**Harold Demsetz**



**Richard Posner**

# A collective effort

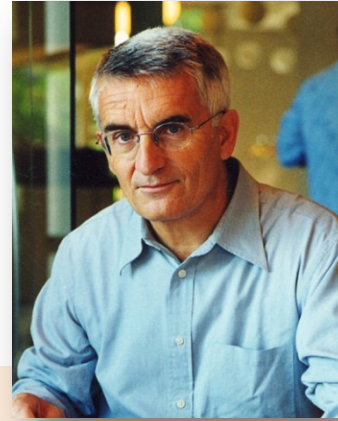
- Closest collaborators on the Prize's awarded field



**Drew Fudenberg**



**Eric Maskin**



**Jean-Jacques Laffont**



**Patrick Rey**



**Jean-Charles Rochet**



**Paul Joskow**



**Josh Lerner**

- And a global research environment





# A stroke of good fortune

- My awakening to industrial organization at MIT
- Breakthroughs in game theory and information economics
- Growing awareness of inefficiency of old style public utility regulation
- Independent agencies and an increased attention to economic reasoning



# The economist's social responsibility

(Case-by-case) “rule of reason” right approach, but daunting informational requirements for the regulator. Economists must

- (1) develop a rigorous analysis of how markets work, accounting for
  - specificities of industries
  - what regulators do and do not know
- (2) participate in policy debate.

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# Curbing market power to the benefit of consumers

It often boils down to regulation of rate of return

- Sectoral (utility) regulation



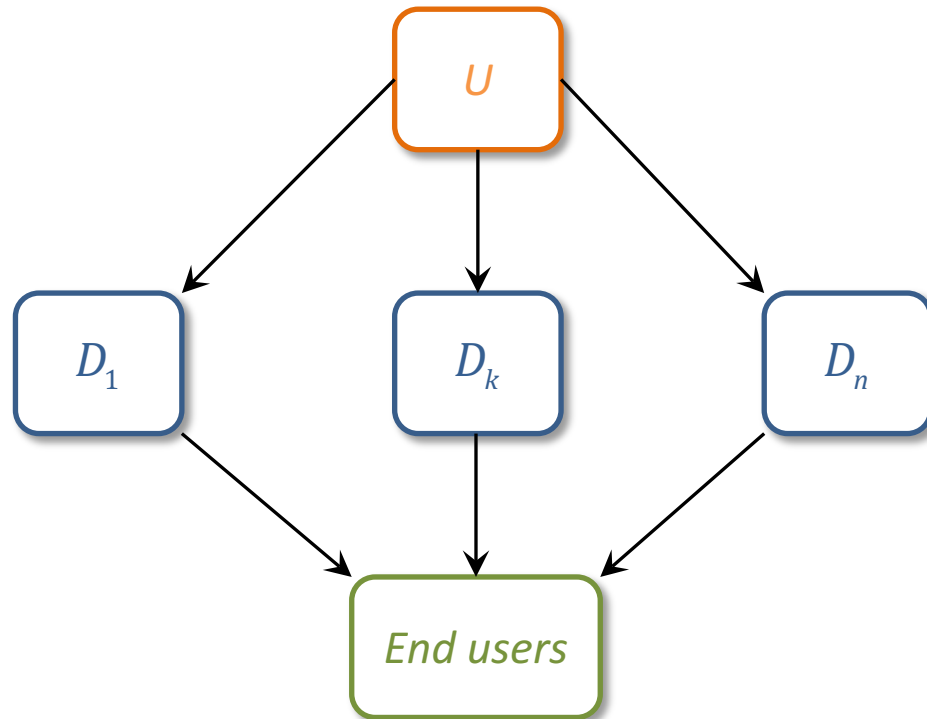
- Antitrust



- Patent and Trademark Offices and specialized intellectual property courts



# Illustration: the foreclosure doctrine (1)



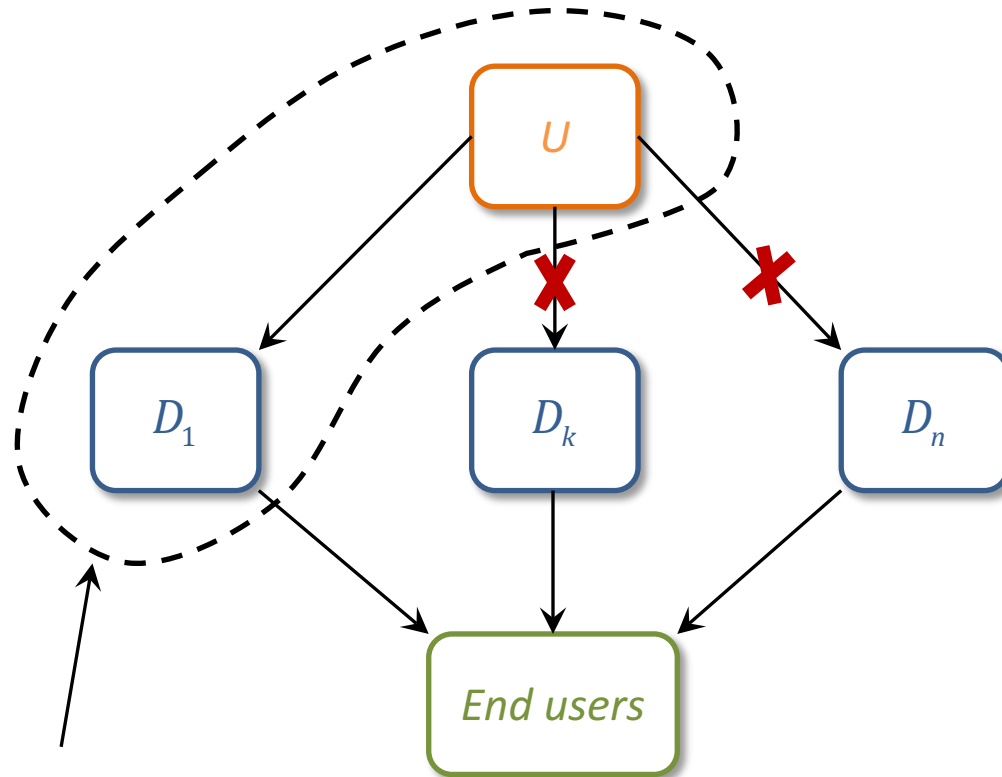
railroad infrastructure, power grid,  
key patent...

train operators, power producers,  
technology implementers...

passengers/freight, electricity  
consumers, technology users...

Fair access creates downstream competition and low prices for end users.

# Illustration: the foreclosure doctrine (2)



railroad infrastructure, power grid,  
key patent...

train operators, power producers,  
technology implementers...

passengers/freight, electricity  
consumers, technology users...

vertical integration  
or sweet deal

Hart-Tirole (1990), Rey-Tirole (2007)...

# Common sense prescription about handling market power

Market power is

deserved

undeserved

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Market power is

	<b>deserved</b>	<b>undeserved</b>
concession	competitive, well-designed auction	unpaid-for legal monopoly



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# Common sense prescription about handling market power

Market power is

	deserved	undeserved
concession	competitive, well-designed auction	unpaid-for legal monopoly
intellectual property	major innovation	obvious, not novel innovation
utility regulation	investment/effort	lucky cost and demand conditions

# Handling the firm's informational superiority (1)

about

- its environment: technology/demand (“adverse selection”)
- its actions: effort to reduce cost, increase demand, give access to rivals (“moral hazard”)

*Principle #1:* reduce informational asymmetries: data collection, benchmarking, auction.

## Handling the firm's informational superiority (2)

*Principle #2:* one size does not fit all; offer menu of options, e.g.

- cost plus: high cost and low profit
- fixed price: low cost and high profit.

# Implications of efficiency/rent extraction trade-off

Can't have cake and eat it too. Incentives generate rents.

Implications (knowing them could have avoided some wishful thinking):

1. Carefully monitor quality
2. Promote regulatory commitment
3. Beware capture by industry

Latter two call for agencies that are independent w.r.t. politics and industry.

## Be careful about tinkering with price structure, use decentralized information

- Curbing market power constrains price *level*. What about the price *structure*?
- Firm has more information than regulator, administered pricing dangerous. Besides, it is much less obvious that firm has conflicting objective with regards to price structure.

Message:

- regulate price level
- don't tinker with price structure without in-depth analysis.

- Ramsey-Boiteux: business oriented (what the market can bear)

price charged to  $i$ -segment

marginal cost of  $i$ -segment

$$\frac{p_i - c_i}{p_i} = \frac{\theta}{\eta_i}$$

elasticity of demand on segment  $i$

where  $0 < \theta < 1$

( $\theta = 1$ : unregulated firm

$\theta = 0$ : first best (no budget constraint))

- Well-designed global price cap (constraint on firm's weighted average price) as way of implementing Ramsey-Boiteux pricing

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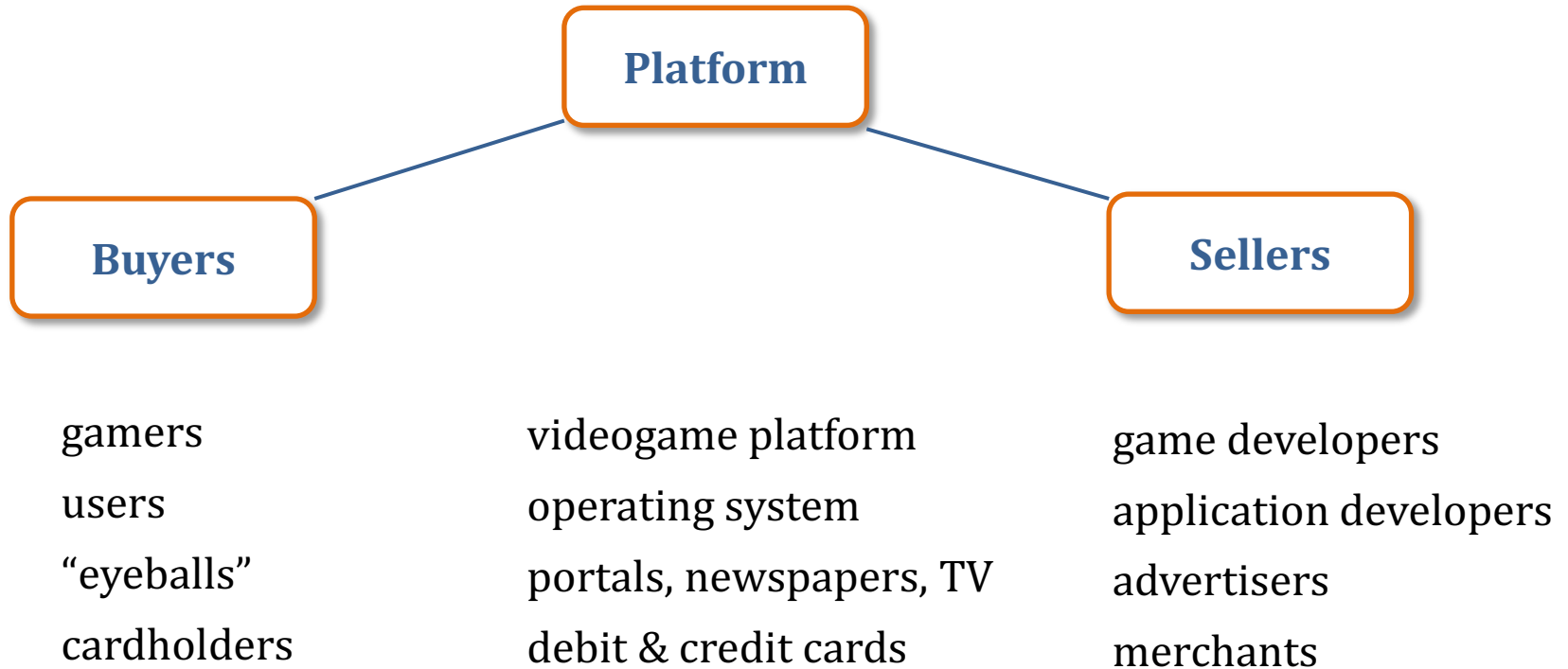
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# Two-sided markets



# Pricing

platform's cost per transaction

price charged to side  $i$

side  $j$ 's willingness to pay to interact with a side -  $i$  user

$$\frac{p_i - (c - v_j)}{p_i} = \frac{1}{\eta_i}$$

elasticity of demand

$c - v_j$ : "opportunity cost"

Caillaud-Jullien (2003), Rochet-Tirole (2003, 2006), Armstrong (2006)...

# Two-sided platforms' business model

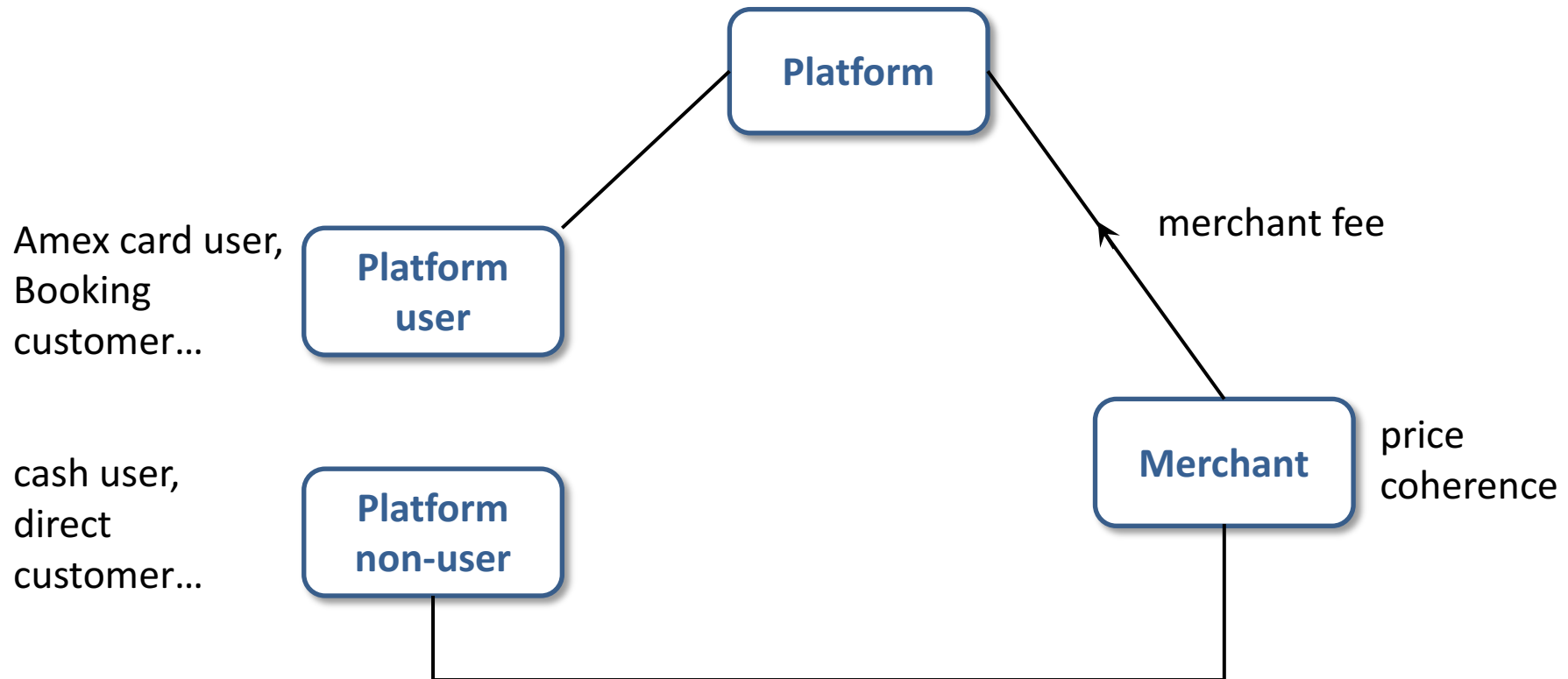
Two-sided platforms account for what each side can bear and for externalities → very skewed pricing patterns

low-price side	high-price side
consumers (search engine, portal, newspaper)	advertisers
cardholders	merchants

# Wither antitrust for two-sided markets?

Optimal regulation of must-take cards, must-join platforms

card payment system, online booking system...



Rochet-Tirole (2002, 2011), Edelman-Wright (2014)...

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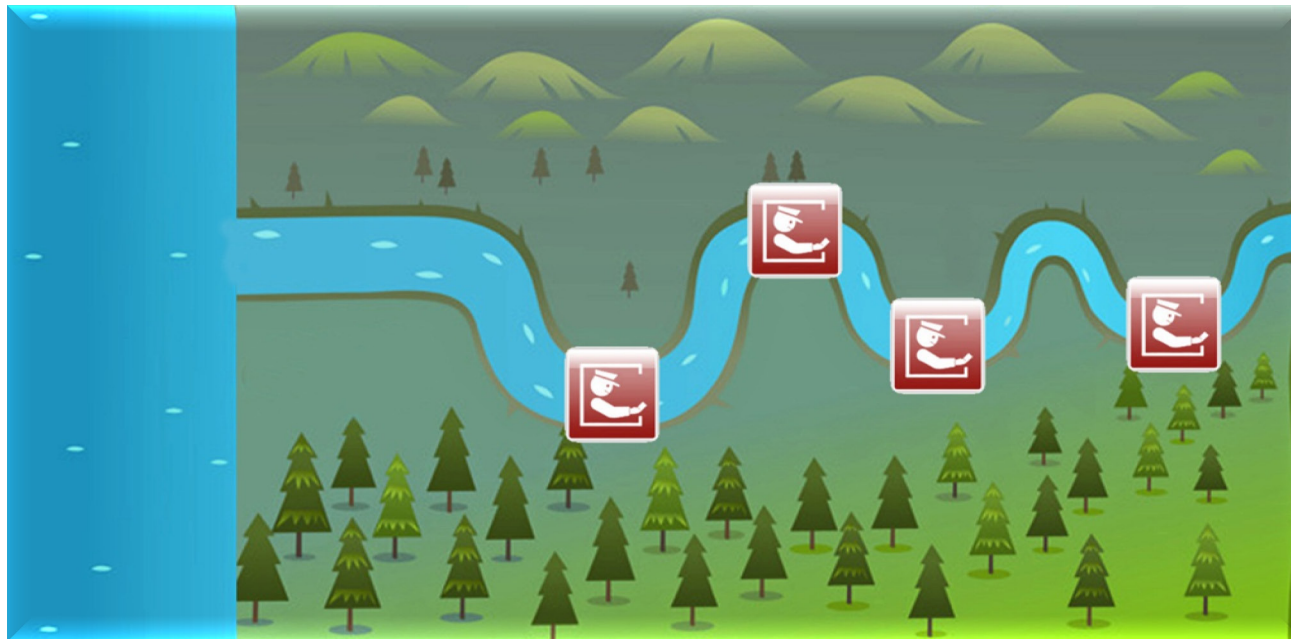
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# Search for “information-light” rules when available

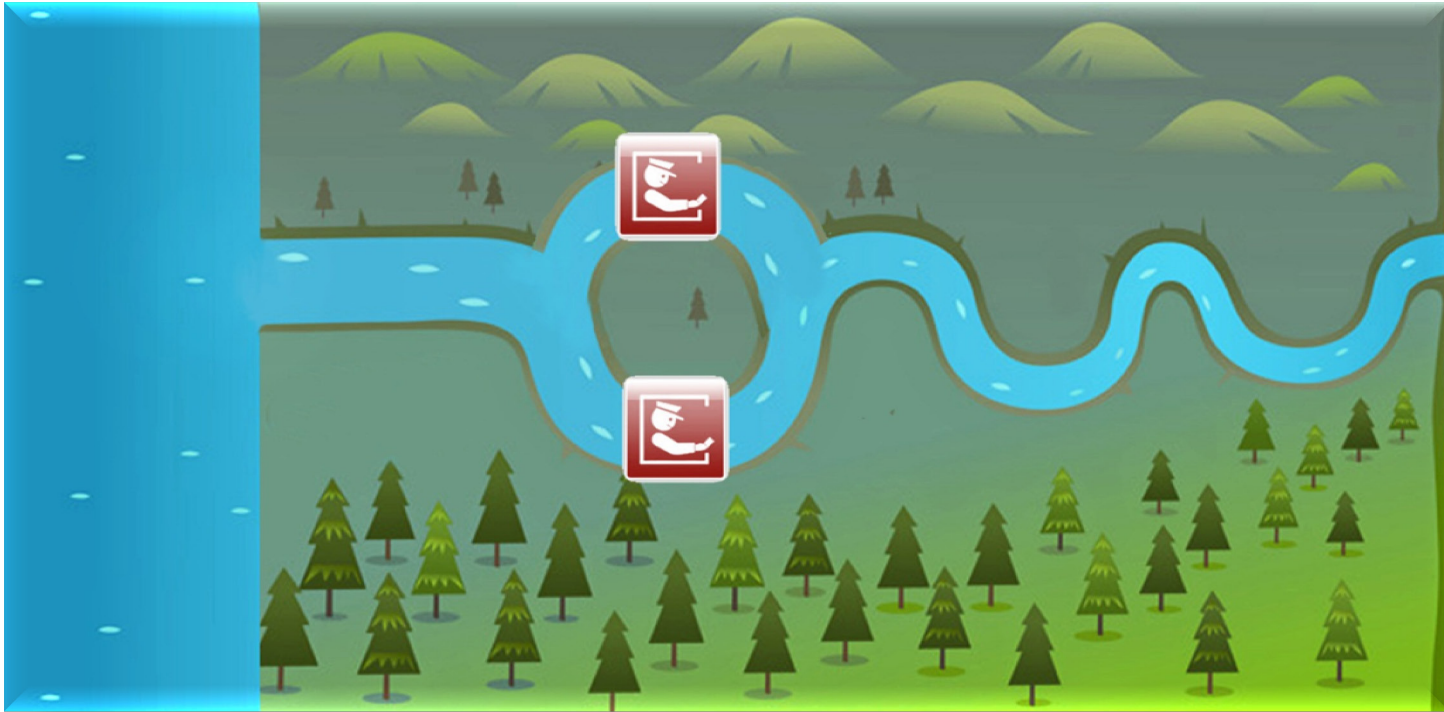
Example: patent pools (co-marketing of patent licenses by multiple patent owners)

Royalty staking hinders the diffusion of technologies. Analogy:



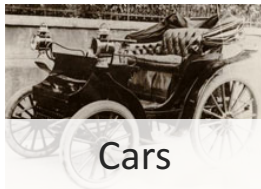
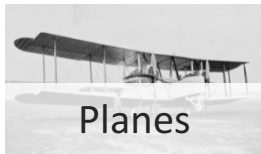
Co-marketing is desirable

# Harmful co-marketing



Akin to merger to monopoly

# Brief history of patent pools



1945

1997

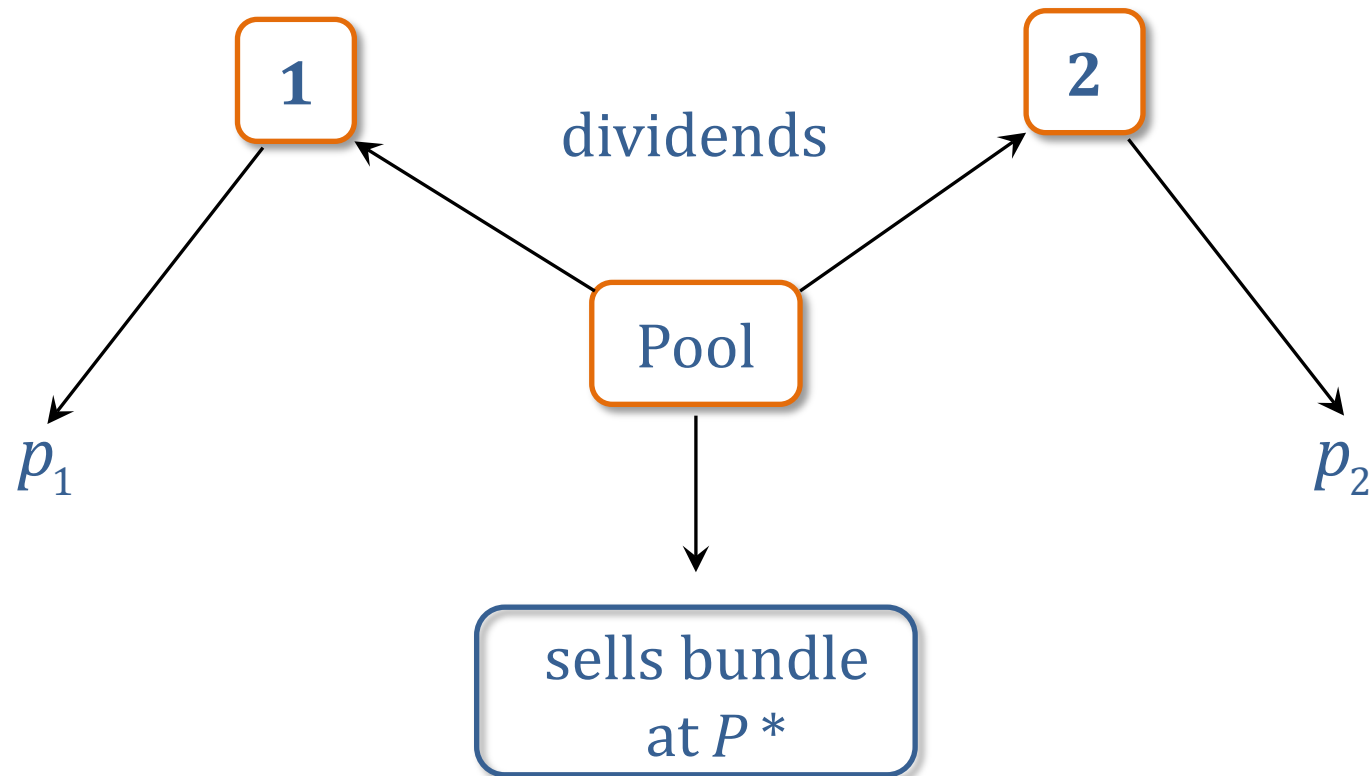
Revival (mainly in IT)





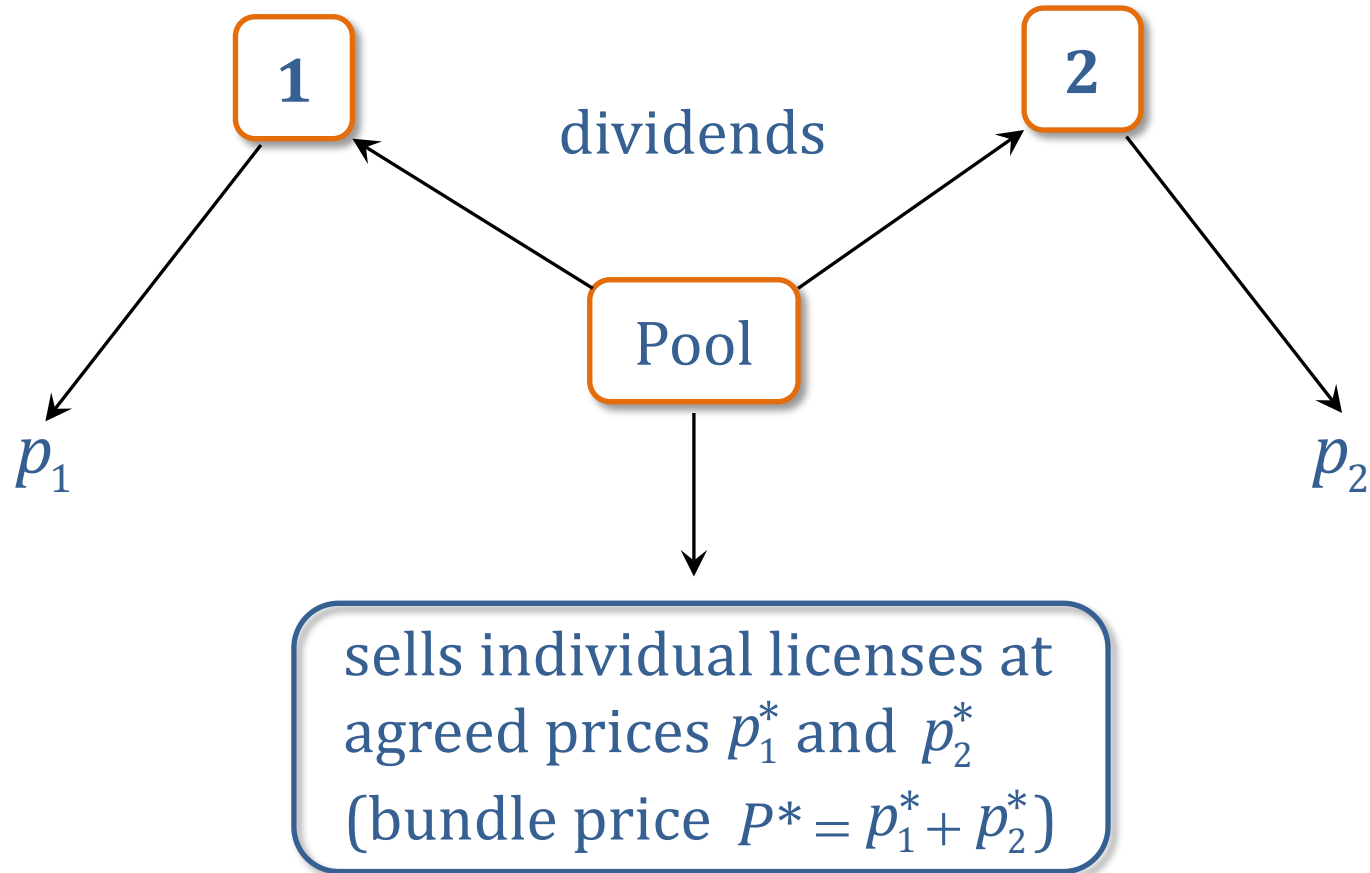
# How do we tell good and bad co-marketing arrangements apart?

Individual licensing



Lerner-Tirole (2004)

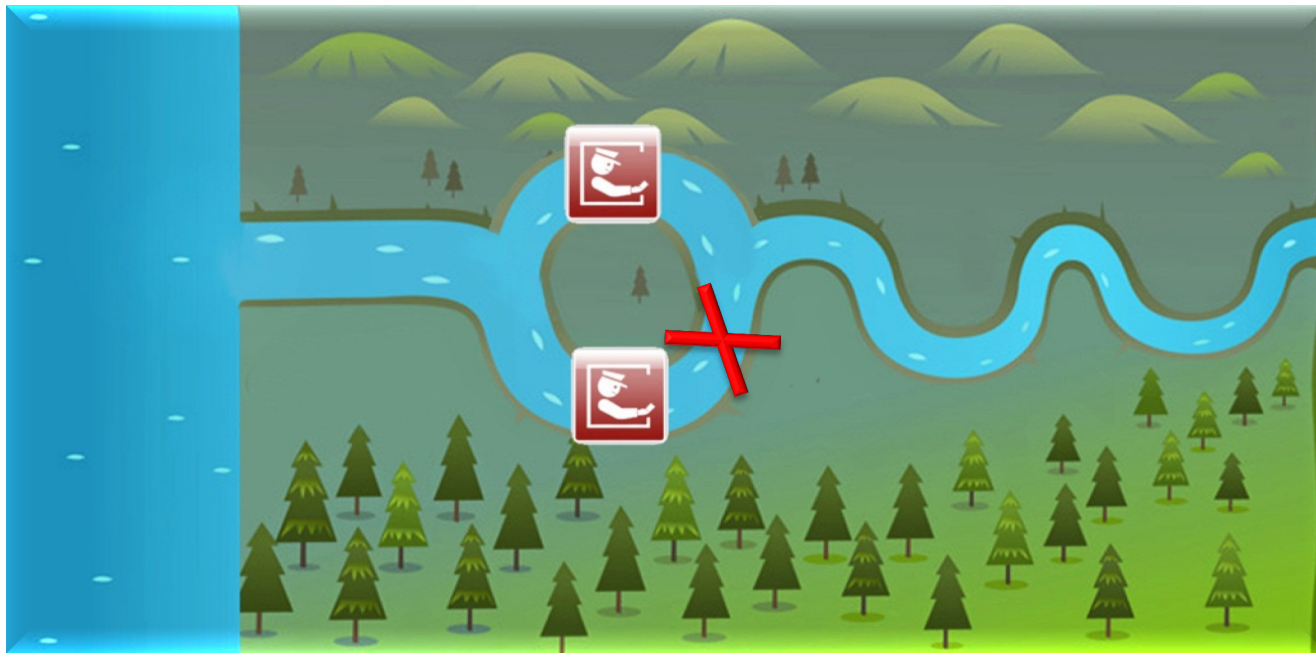
## Cum unbundling



# Standard-essential patents

Multiple routes to solving a technological problem prior to standard.

Standard selects a particular route.



Creating a real commitment (not vague promise of fair, reasonable and non-discriminatory – FRAND – licensing).

Lerner-Tirole (forthcoming)

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Roger Guesnerie



Bengt Holmström



Drew Fudenberg



Roland Bénabou



Mathias Dewatripont



Josh Lerner



Patrick Rey



Olivier Blanchard



Philippe Aghion



Bernard Caillaud



Paul Joskow



Patrick Bolton



Emmanuel Farhi



Jean-Charles Rochet



Oliver Hart



Jean-Jacques Laffont



Eric Maskin

... and many, many others.

# Thank you !