



Patent Pools: Some Policy Considerations

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This presentation

- ⇒ Briefly summarizes a project on the structure and implications of patent pools:
 - Joint work with Jean Tirole (Toulouse/MIT).
 - Theoretical modeling.
 - Analysis of 63 pools formed between 1895 and 2001.
- ⇒ Will highlight policy considerations.

Goals of project

- ⇒ Understanding of factors that encourage/hinder formation of patent pools.
- ⇒ Understand how antitrust authorities should review pools.
 - Department of Justice focuses on whether:
 - Pool only includes “essential” patents—those without substitutes.
 - Pool members retain right to license separately.
 - “Fair and reasonable” royalty rate.
 - Are these the right criteria?

How do we define patent pools?

- ⇒ Formal or informal organizations where separate firms share patent rights.
- ⇒ We include:
 - Cases where 2 or more firms combine to license patents to third parties (open pools).
 - Cases where 3 or more firms combine to share patents among each other and/or third parties (closed pools):
 - Eliminating routine cross-licensing arrangements.

Assumptions of the model

- ⇒ n owners in pool, each with a patent on an innovation.
- ⇒ Initially assume (will relax later):
 - n patents in pool are fixed.
 - Patent owners are not downstream users (licensees).

Assumptions of the model (2)

⇒ Continuum of users:

- Benefits from licensing $\bar{\theta}$ pool's patents is increasing in patents licensed.
- Benefits will also depend on characteristics of users, which will vary across firms.

The licensor's decision

⇒ If no patent pool, licensor will balance:

- Desire for revenue.
- Worries about:
 - Patent being excluded from those selected by licensees (competition margin).
 - If patent is included in basket, reduction of demand for basket (demand margin).

When does a patent pool enhance competition?

- ⇒ First consider if no pool.
- ⇒ Show that:
 - Each patent holder will undertake some licenses.
 - When demand is strong, licensors are tempted to increase prices.
 - Competition margin is more likely to be binding.
- ⇒ Pool always increases welfare when demand margin binds in the absence of pool.
- ⇒ Pool may increase or decrease welfare when competition margin binds.

Implications

- ⇒ Patents don't have to be complements for a pool to increase welfare.
 - Perfect complements are very rare.
 - Pool with perfect substitutes will be harmful, though.

Implications (2)

- ⇒ A crucial test relates to “demand margin”:
 - If I raise the price for my patent, does the demand for other patents drop as much as the demand for my patent?
 - If so, the demand margin is binding and the pool is welfare-enhancing.
 - If not, pool can still be beneficial in some cases.

Implications (3)

⇒ DoJ's current criteria are in many respects reasonable:

- For instance, stipulations that firms must be able to undertake independent licenses:
 - If demand margin is binding, this requirement is not troublesome to firms.
 - If not, requirement will be problematic.
 - A sensible screening device!

Many issues still to study

- ⇒ Impact of pool on substitute patents outside the pool.
- ⇒ Impact of pool on future substitutes.
- ⇒ Impact of inclusion of bogus patents in pools.
- ⇒ Impact of grant-back and related provisions.

One cautionary note

- ⇒ Field, large-sample research highlight fact that cannot just focus on pools:
 - Cross-licensing agreements, standards bodies can achieve many of same goals.
 - Regulation of one could just lead to substitution of other forms.
 - Need for “functional perspective.”

Wrapping up

- ⇒ Patent pools are a little-studied and interesting phenomena:
 - Potential policy importance.
- ⇒ This paper seeks to understand dynamics from theoretical and empirical perspective:
 - Much remains to be done, but suggestive evidence.