

P2P Piracy As Precursor to Commercial Entry

Eli Noam

Columbia University

Business School

Columbia Institute for

Tele-Information

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3 Initial Items

- This paper, on www.citi.columbia.edu, or from noam@columbia.edu
- Same addresses for announcement of our 2nd conference on Video P2P, (TBA). Call for papers for authors on the subject.
- To the FTC: we have data on market shares on 100 media industries for 20 years.

P2P file-sharing is often viewed as disrupting markets.

- But P2P is also an enabler of commercial markets.

- P2P is part of a larger family of economically valuable activities which emerged from “grassroots.”

Grassroots Examples

- 1910's: Radio amateurs
- 1970's: Citizens Band
- 1970's: Micro computer builders
- 1980's: Internet
- 1990's: Open Software movement
- 2000's: MP3 music file sharing
- 2000's: Wi-Fi



TIME

THE WEEKLY NEWSMAGAZINE



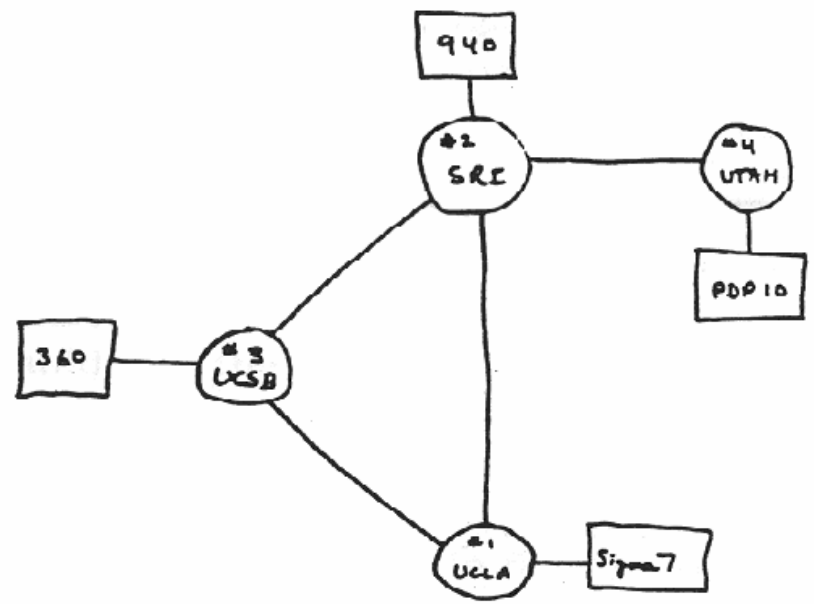
RCA'S SARNOFF

"Who would dare predict the future?"









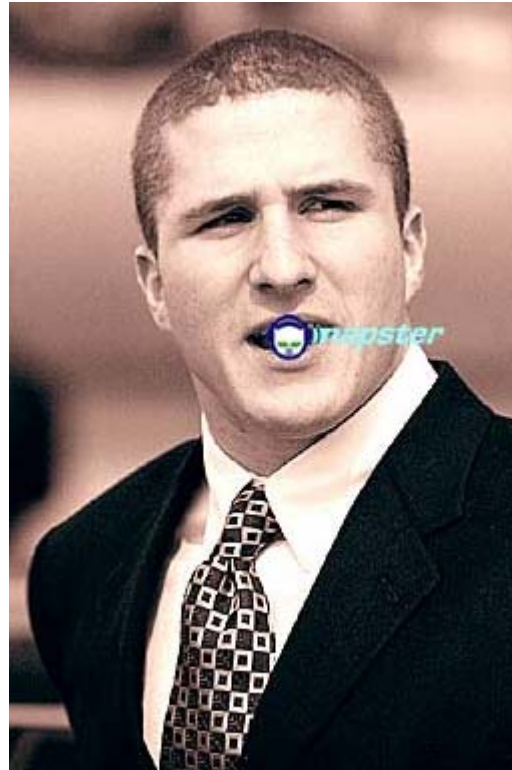
THE ARPA NETWORK

DEC 1969

4 NODES



Linus Torvalds



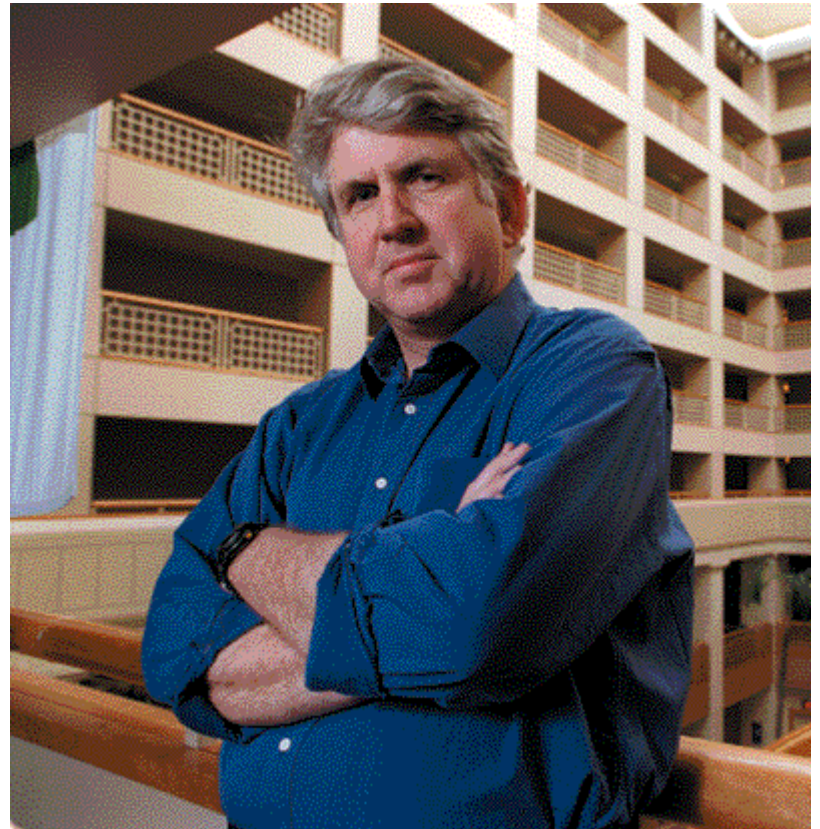
MP3 File Sharing

- These grassroots activities are often more efficiently provided by private firms.
- Then why do these activities exist?

A Basic Model of Model of Critical Mass

Benefits

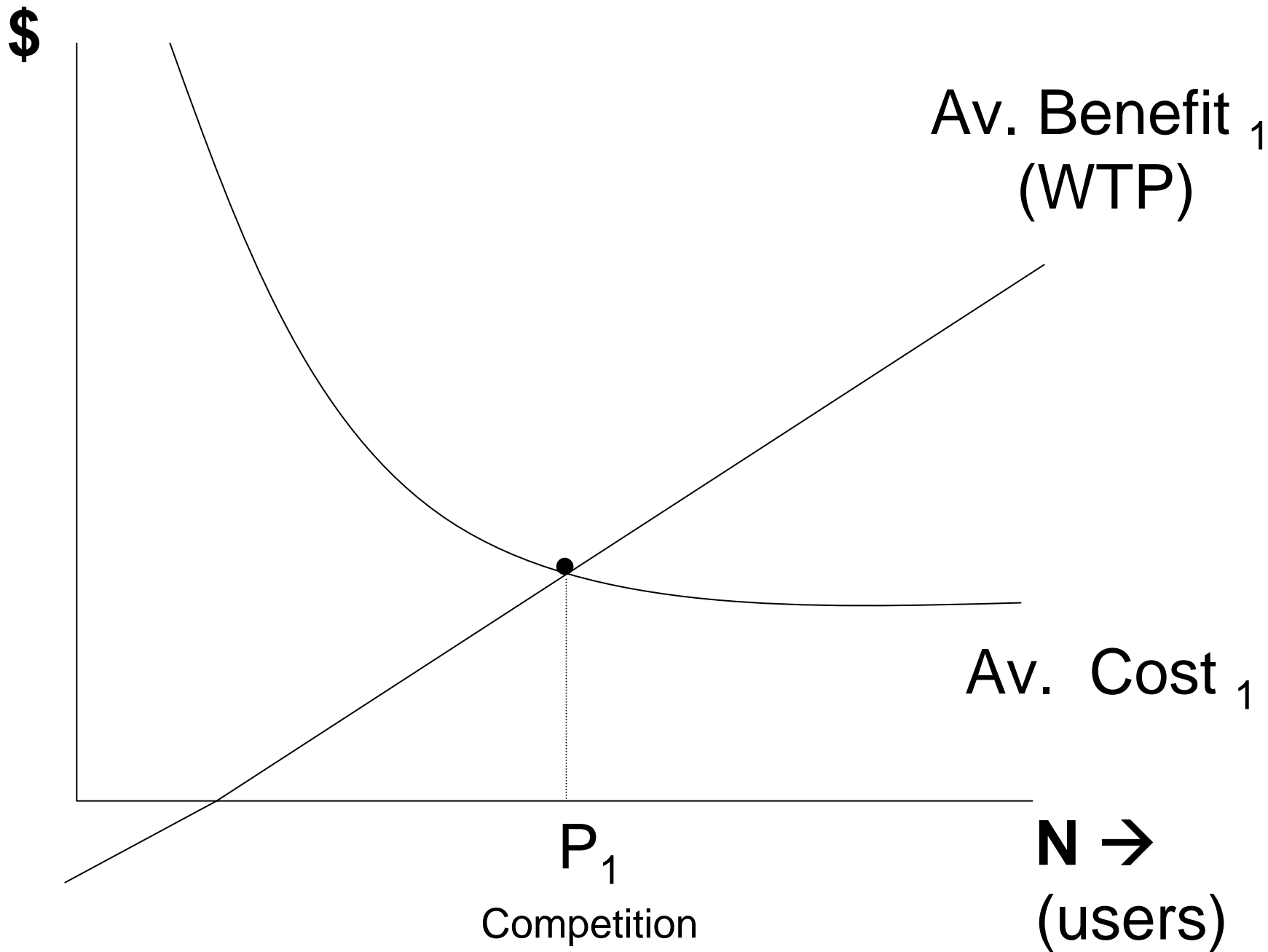
- Total benefits grow with the number of users—the network effect.
- Metcalfe's Law defines total benefits as $TB = b(n^2 - n)$.



- Average benefits: $(b/n)(n^2 - n) = bn - b$
- Average benefits define maximum willingness to pay.

Cost

- High fixed cost, low marginal cost
 - assume constant marginal cost
- $TC = F + nM$
- Average cost: $F/n + M$.

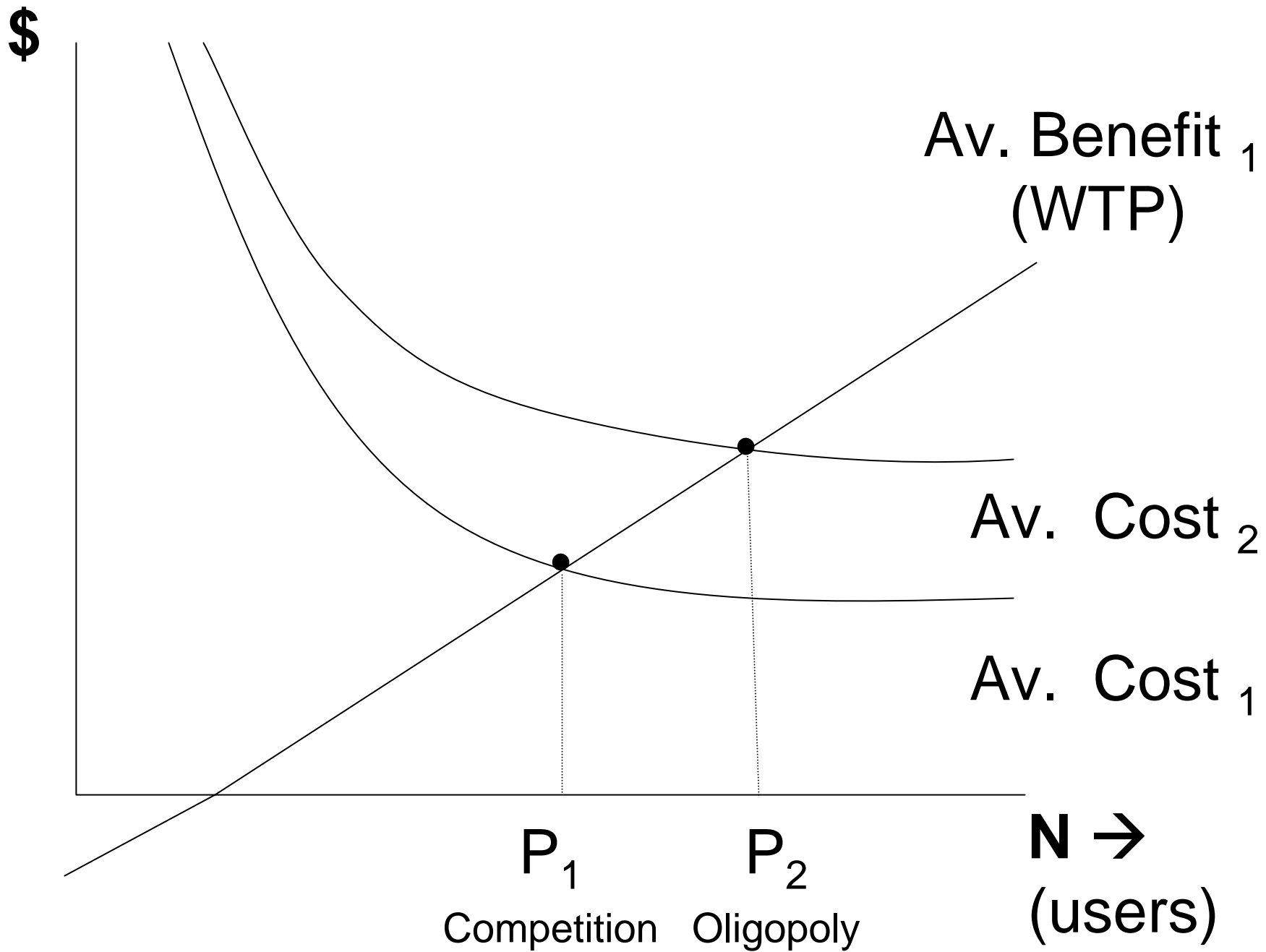


- P_1 is the take-off point
- To the left of P_1 , the activity is not self-sustaining
- How does one get to the take-off point?

Options to Reach Critical Mass

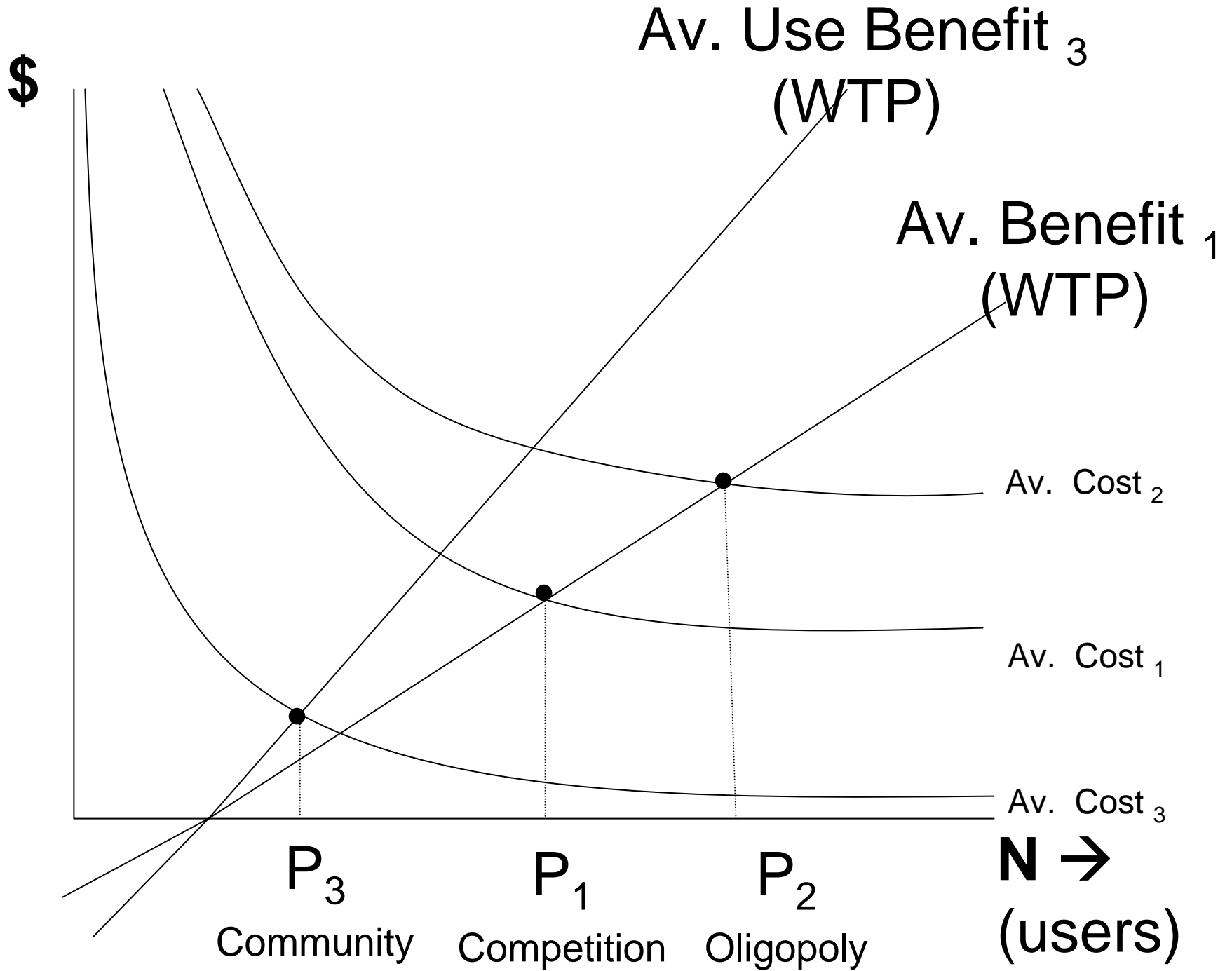
- 1. Government subsidies
- 2. Regulation to force a price below cost to raise demand
- 3. A business firm underwrites the deficit
 - Unlikely where competitive entry likely

- On the other hand, the take-off point for an oligopolistic industry will be P_2



4th Alternative to Reach Critical Mass: The Community Approach.

- The benefit side is increased by an intense spirit of community.
 - Leading edge participation; vilification
- On the cost side, the community lowers costs by
 - Voluntarism
 - Piracy

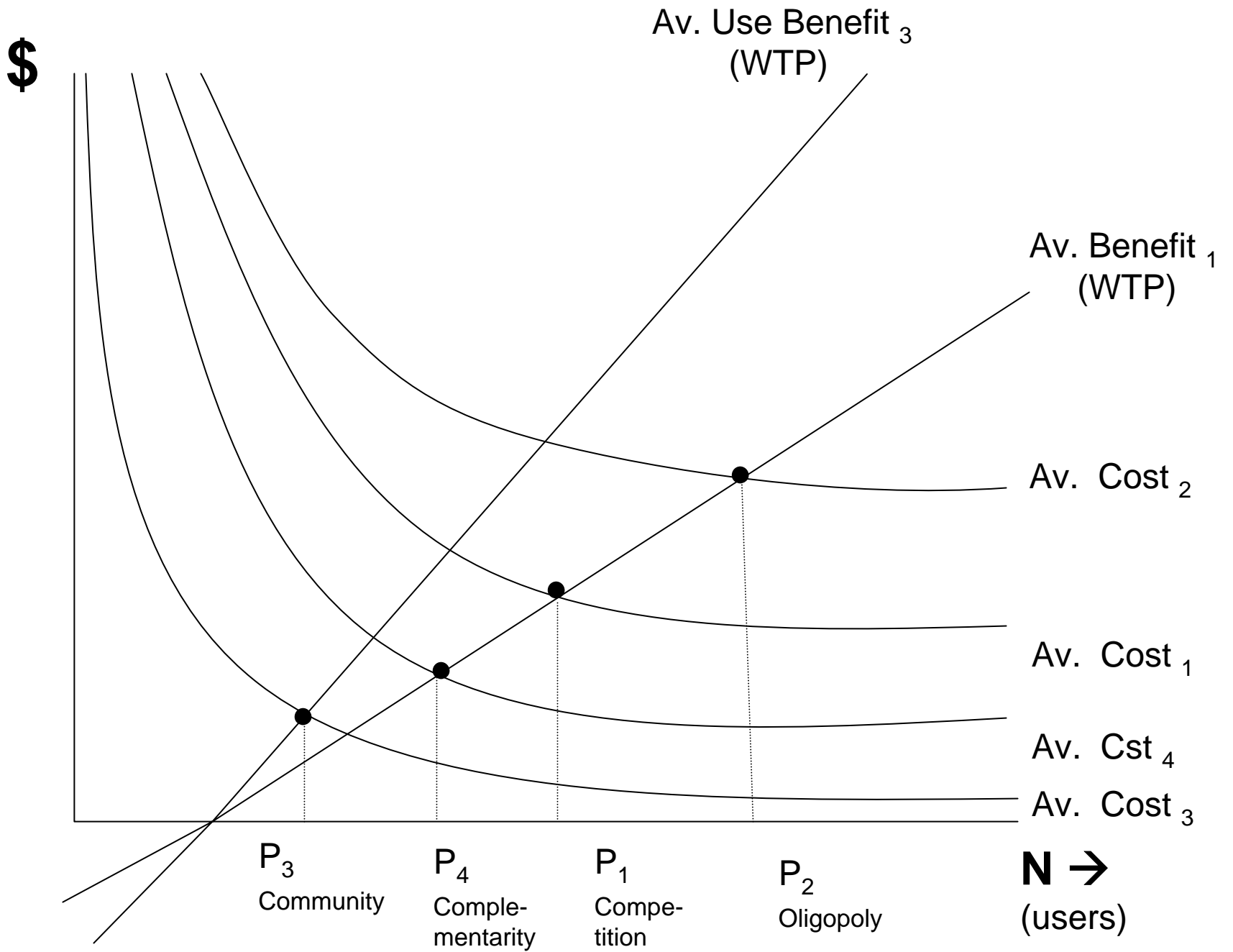


Community Activity

- Pushes the critical mass point to the left, P_3
 - an earlier take-off

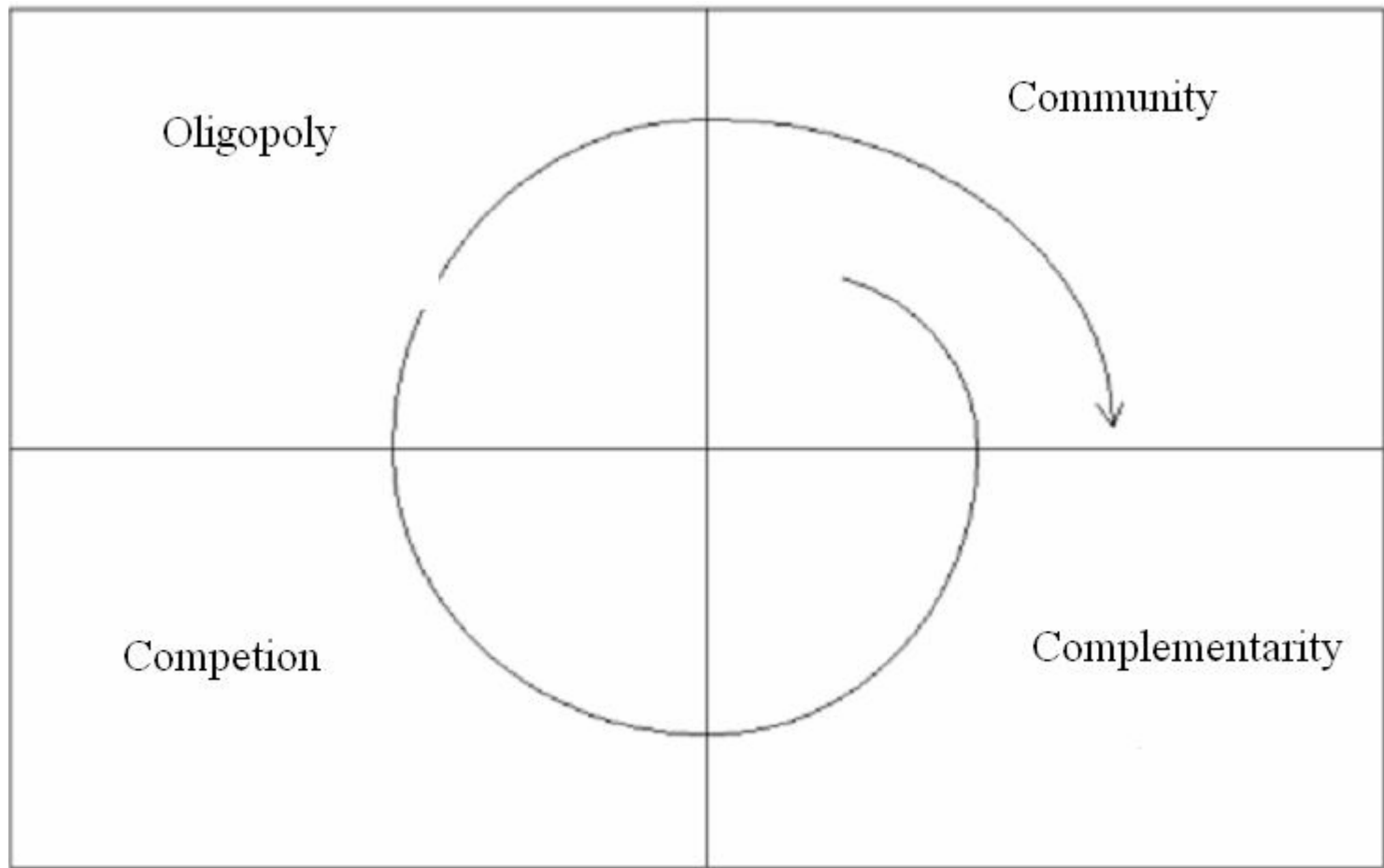
Subsequent Commercial Entry

- First, from firms with complementary interest
 - RCA with radios
 - Apple with MP3 devices
- P_4 is the “complementarity take-off point.”

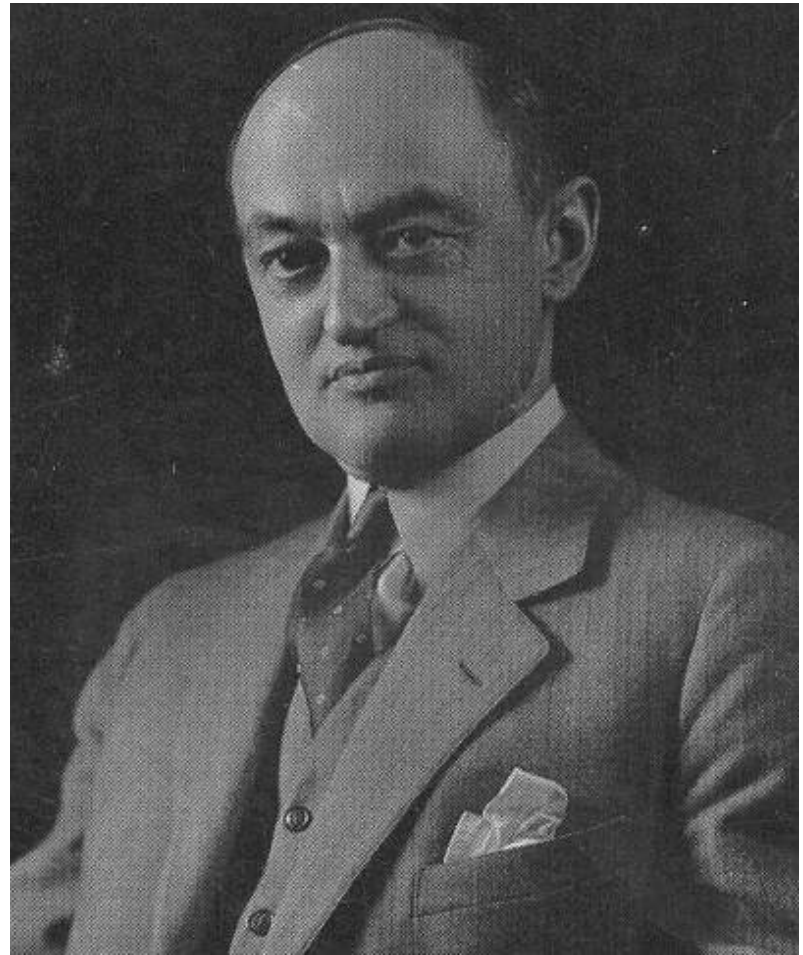


- When the commercial entry takes place, it pushes aside the community that made it all possible.
- The community-based system is transitional, not permanent

- Within the commercial alternatives, the center of gravity moves from
 - P_4 , (the take-off point of complementarity)
 - to P_1 (the take-off point of competition),
 - to P_2 , (the take-off point in an oligopoly).



- Joseph Schumpeter's “creative destruction of capitalism” focused the undermining of oligopoly by competitive innovators, P_1 or maybe P_4 challenging P_2 .
- Not included was the challenge from community, P_3 .



- We tend to lionize the business-based disrupters as creative entrepreneurs.
- But we ignore or vilify the community-based disrupters.
- There is a legitimate and useful role for community as an entrepreneurial element in the process of innovation

Policy and Business Implications

- Suppressing sharing arrangements because they facilitate piracy is short-term thinking.
- Once the user base is large enough, it will provide the foundation for a market-based transaction mechanism.

- If established media business firms take the long view, they would value the community efforts that create the user base for their own subsequent expansion.



Middelhoff (Bertelsmann CEO)
& Sean Fanning of Napster

Macro Impacts

- Broadband is a historic transition
- US is not a leader
- Killer-app for broadband is entertainment.
- There are enormous secondary benefits to the economy and to innovation by broadband, just as the internet did a few years ago.

The next frontier for the community?

- New interactive forms of communications
- Base on P2P's own core strengths
 - Community
 - Creativity
 - Energy
 - Interactivity
 - Peership.

The Transition of TV

- From the “they TV” of the 3-network system
- to the “me TV” of multichannel TV
- To the “we-TV” of the next-generation P2P interactive video.

Another cycle Begins

