

Consumer Welfare and Market Structure in a Model of Competition between Open Source and Proprietary Software

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BACKGROUND

- For-profit and non-profit companies and outfits coexist in a variety of industries, so consumers have the option between contributing and benefiting from collective non-profit projects, and buying goods that are produced by independent entrepreneurs and sold for profit.

METHODOLOGY

- The paper focuses on the special case of the software industry where consumers can choose between buying proprietary software, and using and sometime developing open source software.
- The author examines how the cohabitation of open source and proprietary models of production affects consumer welfare and market structure at the industry level.
- The analysis draws on two empirical studies conducted by the author. The first study considers the evolution of patterns of competition between L^AT_EX, an open source typesetting software, and its proprietary alternatives and complements. The second study uses empirical data to explain when and why open source software does not attract users.
- The author adapts standard models of product differentiation and public good production in a novel way to analyse equilibrium outcomes under open source and proprietary modes of production.

KEY FINDINGS

- An industry where only the open source development model is used will generally be more efficient from the point of view of welfare than an industry where proprietary development is used to the exclusion of other development models. However, an open source industry will be vulnerable to entry by entrepreneurs that use proprietary development methods, while an industry that uses the proprietary mode of development will be able to resist entry by open source projects.
- A mixed industry where open source and proprietary development methods coexist will thus emerge, and it may exhibit large open source projects cohabiting with more specialised proprietary projects. This pattern of coexistence improves on a proprietary industry from the point of view of welfare, and may even improve on the exclusive use of an open source model of production.

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POLICY ISSUES

- The conclusions of the paper in its present state could be used to analyze the cohabitation of private and public provision of health care and education.
- A number of countries find it optimal to combine a dominant public sector with a marginal private sector. This would seem to confirm that a mixed model of production may be considered more efficient in some industries.
- The model developed by the author will need to be adapted to correspond to a wider variety of settings. Indications are given as to how this might be achieved.

THE CCP

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FOR MORE INFORMATION

The full working paper (CCP Working Paper 08-31) and more information about CCP and its research is available from our website: www.ccp.uea.ac.uk

ABOUT THE AUTHOR

- **Dr Alexia Gaudeul** is an industrial economist with an interest in the Internet, open source software and media industries. She is currently working on the analysis of competition between information intermediaries on the Internet (such as auction sites or search engines). She is also studying the open source software production model in order to evaluate its impact on traditional methods of software production. More generally, Alexia works on the effect of the Internet as it extends the set of available contracts that can be signed between agents, and looks at the new competitive strategies that this allows.

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