

Title	Promoting user-driven innovation in open source hardware communities
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Abstract	<p>Open source hardware as it is generally thought of today has grown from modest roots six years ago into a vibrant and exponentially expanding movement. Developments over the past few years have made it dramatically easier for people to design, customize, and fabricate their own hardware. This democratization of tools has helped to fuel a rapid flow of innovations, but open source hardware still has not had the same widespread impact that is associated with open source software. Recent studies examining user innovation in open source hardware communities has shown that a good portion of the open source hardware ecosystem is not optimized to promote user-driven innovation. The InMojo open source hardware platform was created to see if releasing a theoretically optimized system into the marketplace would successfully help fuel open source hardware innovation.</p> <p>The core concepts that were used to design the platform are defined through a literature review and used to propose a set of guiding principles for the creation of open source hardware platforms that offer better theoretical support for user innovation than existing alternatives. From those principles a specific implementation of the platform was developed. After the research and design phase the platform was released to the marketplace, and user adoption, interactions, and feedback were closely monitored. This information was used to make iterative improvements to the system. As the community grew, marketplace reaction was measured using several different factors and case studies were performed on a select number of items to demonstrate incidences of user-driven innovation.</p> <p>This data will be analyzed against theoretical expectations, and will be used to make recommendations for further research and system development.</p>
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Master's Thesis

**Promoting User-Driven Innovation in Open Source
Hardware Communities**

by

David Siren Eisner

Submitted to the Graduate School of Media Design
in partial fulfillment of the requirements for the degree of

MASTER OF MEDIA DESIGN

at

KEIO UNIVERSITY

Academic Year 2011

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Promoting User-Driven Innovation in Open Source Hardware Communities

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B.S., Carnegie Mellon University. Pittsburgh, 2000

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Promoting User-Driven Innovation in Open Source Hardware Communities

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Submitted to the Graduate School of Media Design
on August 1, 2011, in partial fulfillment of the
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Master of Media Design

Abstract

Open source hardware as it is generally thought of today has grown from modest roots six years ago into a vibrant and exponentially expanding movement. Developments over the past few years have made it dramatically easier for people to design, customize, and fabricate their own hardware. This democratization of tools has helped to fuel a rapid flow of innovations, but open source hardware still has not had the same widespread impact that is associated with open source software. Recent studies examining user innovation in open source hardware communities has shown that a good portion of the open source hardware ecosystem is not optimized to promote user-driven innovation. The InMojo open source hardware platform was created to see if releasing a theoretically optimized system into the marketplace would successfully help fuel open source hardware innovation.

The core concepts that were used to design the platform are defined through a literature review and used to propose a set of guiding principles for the creation of open source hardware platforms that offer better theoretical support for user innovation than existing alternatives. From those principles a specific implementation of the platform was developed. After the research and design phase the platform was released to the marketplace, and user adoption, interactions, and feedback were closely monitored. This information was used to make iterative improvements to the system. As the community grew, marketplace reaction was measured using several different factors and case studies were performed on a select number of items to demonstrate incidences of user-driven innovation. This data will be analyzed against theoretical expectations, and will be used to make recommendations for further research and system development.

Keywords: open source hardware, user innovation, open innovation, community marketplaces

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