

## Chapter 5

# Coherent Synergy: Fostering Innovation in Open Source Ecosystems

**Francisco Jose Monaco**

 <https://orcid.org/0000-0001-6172-2689>  
Universidade de Sao Paulo, Brazil

### ABSTRACT

*The open-source paradigm has evolved from the early enthusiasts' circles to enter the agenda of the mainstream industry, while related initiatives have been extending the idea of open, collaborative development to other kinds of intellectual artifacts. Against this background, it is pertinent to ask how an innovation-based business that deliberately renounces the exclusive prerogatives endowed by intellectual property can foster continuous innovation. In order to shed light on those questions, this article addresses the open-source model as a new paradigm of innovation fostering that does not rely on the IP-enforcement model. The investigation brings up a comprehensive conceptual framework to understand different kinds of open-source business models in a unified and systematic way. By introducing a broader definition of open-source innovation, the study formulates the notion of coherent synergy: a property that determines the roles of the intellectual creation and the different stakeholders in innovation ecosystems.*

### INTRODUCTION

Brought to the fore in the 80s by way of an organized initiative, the contemporary notion of freely sharable, cooperatively developed technology was first systematically

DOI: 10.4018/978-1-6684-4785-7.ch005

formulated in the context of the software industry. The term *free*, as in *Free Software*, endorsed by the Free Software Foundation<sup>1</sup> (FSF), the pioneer catalyst of the concept and founder of the hugely influential GNU Project, conveys the initiative's driving motivation (Stallman, 2002) towards the moral principles of individual freedom and the ethics of sharing and collaboration. The related qualifier *open*, as in *Open Source Software*, has been later proposed (Perens, 1999) by the Open Source Initiative<sup>2</sup> (OSI), another authoritative source backed by prominent organizations and practitioner communities, as a label to highlight the methodological aspect of open, collaborative development. Apropos terminology, while both standpoints converge with respect to technical aspects of open development, their scope differ to some extent — with FSF, on the one hand, criticizing the usage of the alternative term “open” as detrimental to its agenda of raising public awareness about user freedom, and the OSI, on the other, arguing in favor of separating the moral and methodological concerns. In response, the conciliatory expression *free and open source*, as in *Free and Open Source Software*, by acronym FOSS<sup>3</sup>, has been suggested to refer to both perspectives collectively, focusing on their elements of convergence.

Through the volunteer efforts of multiple seminal undertakings, the central idea of free open collaboration has flourished into the prominent achievements of influential open-source projects such as GNU, Linux, FreeBSD, Wikipedia, Mozilla, Apache, PostgreSQL, and Python, to name only a little few of the growing number of remarkably successful examples. While varying in philosophical grounds and strategic approaches, open-source supporter communities regard the idea of unrestricted equal rights to intellectual creations as a key condition for ensuring people's control over the technology they use, promoting essential privacy and security guarantees, and leveraging agile technological development. And although formal definitions proposed by leading organizations differ in terminology and rationalization of principles, all of them essentially agree on the conditions required for a product to be considered free and open in the sense mentioned earlier: the non-exclusive rights to freely *use*, *modify* and *redistribute* the item without restrictions on field of endeavor, or discrimination of people or groups.

Now, being around for nearly 40 years, the open-source paradigm has evolved from the early enthusiasts' inner circles to enter the agenda of the mainstream industry. Concomitantly, related concepts of open-source hardware, open educational resources, and open science, among others, expand the idea of collaborative construction of publicly accessible knowledge to encompass other intellectual products made available under the same free and open status. So as to embrace this broadened, more generic notion, we herein will use the term *open source* to refer to open-source systems in general when addressing the matter from a technical perspective<sup>4</sup>.

With all being said about the impact of the open-source approach on the several segments of the industry where its influence has been felt, this article calls attention

45 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: [www.igi-global.com/chapter/coherent-synergy/326641](http://www.igi-global.com/chapter/coherent-synergy/326641)

## Related Content

---

### Open Source Web Portals

Vanessa P. Braganholo and Bernardo Miranda (2007). *Handbook of Research on Open Source Software: Technological, Economic, and Social Perspectives* (pp. 211-226).

[www.irma-international.org/chapter/open-source-web-portals/21190](http://www.irma-international.org/chapter/open-source-web-portals/21190)

### Software Maintainability Estimation in Agile Software Development

Parita Jain, Arun Sharma and Laxmi Ahuja (2018). *International Journal of Open Source Software and Processes* (pp. 65-78).

[www.irma-international.org/article/software-maintainability-estimation-in-agile-software-development/221364](http://www.irma-international.org/article/software-maintainability-estimation-in-agile-software-development/221364)

### Virtualized Open Source Networking Lab

Lee Chao (2015). *Open Source Technology: Concepts, Methodologies, Tools, and Applications* (pp. 1421-1436).

[www.irma-international.org/chapter/virtualized-open-source-networking-lab/120978](http://www.irma-international.org/chapter/virtualized-open-source-networking-lab/120978)

### A Novel UML Based Approach for Early Detection of Change Prone Classes

Deepa Bura, Amit Choudhary and Rakesh Kumar Singh (2017). *International Journal of Open Source Software and Processes* (pp. 1-23).

[www.irma-international.org/article/a-novel-uml-based-approach-for-early-detection-of-change-prone-classes/201055](http://www.irma-international.org/article/a-novel-uml-based-approach-for-early-detection-of-change-prone-classes/201055)

### An Exploratory Investigation of the Barriers to the Adoption of Open Source ERP by Belgian SMEs

Kris Venand Dieter Van Nuffel (2012). *Free and Open Source Enterprise Resource Planning: Systems and Strategies* (pp. 145-164).

[www.irma-international.org/chapter/exploratory-investigation-barriers-adoption-open/60824](http://www.irma-international.org/chapter/exploratory-investigation-barriers-adoption-open/60824)