

and distribution. Digital resources can never be depleted. An absence of a theory or model for how abundance works, however, has led the market to make digital resources artificially scarce and makes it possible for the usual market norms and rules to be applied.

When it comes to use of state funds to create digital goods, however, there is really no justification for artificial scarcity. The norm for state funded digital works should be that they are freely and openly available to the public that paid for them.

The Digital Revolution

In the early days of computing, programmers and developers learned from each other by sharing software. In the 1980s, the free-software movement codified this practice of sharing into a set of principles and freedoms:

- The freedom to run a software program as you wish, for any purpose.
- The freedom to study how a software program works (because access to the source code has been freely given), and change it so it does your computing as you wish.
- The freedom to redistribute copies.
- The freedom to distribute copies of your modified versions to others.¹⁶

These principles and freedoms constitute a set of norms and rules that typify a digital commons.

In the late 1990s, to make the sharing of source code and collaboration more appealing to companies, the open-source-software initiative converted these principles into licenses and standards for managing access to and distribution of software. The benefits of open source—such as reliability, scalability, and quality verified by independent peer review—became widely recognized and accepted. Customers liked the way open source gave them control without being locked into a closed, proprietary technology. Free and

open-source software also generated a network effect where the value of a product or service increases with the number of people using it.¹⁷ The dramatic growth of the Internet itself owes much to the fact that nobody has a proprietary lock on core Internet protocols.

While open-source software functions as a commons, many businesses and markets did build up around it. Business models based on the licenses and standards of open-source software evolved alongside organizations that managed software code on principles of abundance rather than scarcity. Eric Raymond's essay "The Magic Cauldron" does a great job of analyzing the economics and business models associated with open-source software.¹⁸ These models can provide examples of sustainable approaches for those **Made with Creative Commons**.

It isn't just about an abundant availability of digital assets but also about abundance of participation. The growth of personal computing, information technology, and the Internet made it possible for mass participation in producing creative works and distributing them. Photos, books, music, and many other forms of digital content could now be readily created and distributed by almost anyone. Despite this potential for abundance, by default these digital works are governed by copyright laws. Under copyright, a digital work is the property of the creator, and by law others are excluded from accessing and using it without the creator's permission.

But people like to share. One of the ways we define ourselves is by sharing valuable and entertaining content. Doing so grows and nourishes relationships, seeks to change opinions, encourages action, and informs others about who we are and what we care about. Sharing lets us feel more involved with the world.¹⁹

The Birth of Creative Commons

In 2001, Creative Commons was created as a nonprofit to support all those who wanted to share digital content. A suite of Creative Commons licenses was modeled on those of open-source software but for use with digital con-