

MISQ Archivist

Human Capital Development for Programmers Using Open Source Software

Amit Mehra and Vijay Mookerjee

Abstract

A firm can upgrade relevant skills of its programmers by ensuring their participation in carefully chosen open source projects. Highly skilled programmers are more valuable for the firm but participating in open source projects reduces the time they spend doing the firm's projects. This tradeoff determines the optimal extent of programmer participation in open source for the firm. The extent of open source participation may also be influenced by the minimum compensation that must be paid to hire a programmer in the labor market. This is because providing better skills is a way of compensating the programmers by improving their future market value. Hence the firm may want to increase open source participation to keep direct wage payments in check. We develop an analytical model based on optimal control theory to characterize the employment contract that features the best mix of open source participation and wage payments. We also find that the firm benefits more from the presence of open source in a tight labor market (i.e., when programmers have good options beside the employment offered by the firm). On the other hand, programmers are compensated better in the presence of open source opportunities when they have few outside options. This benefit is more for less skilled programmers.

Keywords: Human capital, open source software, employment contracts, training, skill development,; incentives