

Paper Three Summary

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September 23, 2015

Reference

Bird et al [1] listed below.

Important Keywords

Global development Development that is globally distributed but takes place within one company. The authors contrast this to *outsourcing*, in which development takes place among multiple companies and *collocated development*, where development takes place in one location.

Coordination breakdown A difficulty usually encountered in distributed development where employees in one location are not appropriately aware or responsive to the work of employees in another location.

Binary distribution Different levels of classifications for where binaries are developed. The authors give *building*, *cafeteria*, *campus*, *locality*, *continent*, and *world* as different ways to classify binary distribution.

Organizational integration An organizational structure that spans geographical locations at low levels.

Feature Extraction

Motivational statements The motivation of this study was to compare the post release failures of Windows Vista components developed in a distributed fashion to those developed by collocated teams as to attain insight into the affect of distributed team development against collocated team development. The researchers main goal is to confirm or refute the notion that distributed development on a global scale leads to a greater number of software failures.

Hypotheses The authors list two hypotheses [1]:

H1: Binaries that are developed by teams of engineers that are distributed will have more post-release failures than those developed by colocated engineers.

H2: Binaries that are distributed will be less complex, experience less code churn, and have fewer dependencies than colocated binaries.

Future Work The authors note that there haven't been any causal relationship established between development practices and effective distributed development. They suggest studies to examine the effects of various development practices on distributed development.

Possible Improvements

Connection to Other Papers

Our first paper [2] cited geographical issues as a difficulty in interpreting aggregated results. They ask how the work should be divided among multiple locations to maximize quality and productivity, initially suggesting that development should not be split over different locations. They note that this study found different results, that geographical distribution had little to no effect on software quality.

The authors also mentioned that this study examined software on the binary level (an aggregated level), which supports their claim that aggregation is very common in defect modeling research.

References

- [1] Christian Bird, Nachiappan Nagappan, Premkumar Devanbu, Harald Gall, and Brendan Murphy. Does distributed development affect software quality?: An empirical case study of windows vista. *Commun. ACM*, 52(8):85–93, August 2009.
- [2] D. Posnett, V. Filkov, and P. Devanbu. Ecological inference in empirical software engineering. In *Automated Software Engineering (ASE), 2011 26th IEEE/ACM International Conference on*, pages 362–371, Nov 2011.