Why Roche is Investing We All Should Open Source Software for Clinical Reporting

PHUSE US Connect 2023

Thomas Neitmann, Senior Data Scientist
History Lesson

Pharma has relied on **commercial software** to support filings for 20+ years

Negligible progress has been made in terms of analysis and reporting capabilities

Data Science outside Pharma evolved at a **rapid pace**
Open-Source is the Home of Innovation
Roche’s Goal

Shift towards a language agnostic, open-source centered framework

From 2023 onwards new studies will use R as their core data science tool

Refactored our codebase to enable end-to-end reporting in R
“I understand why you are adopting open-source software but why invest in building it? Why not keep code in house?”
I. Collaboration

Open-source software enables collaboration with other organizations, which can lead to faster development and more comprehensive testing and validation of the software.
Because open-source software is often developed collaboratively, it can benefit from a faster pace of innovation than proprietary software. New features and capabilities can be added more quickly, and bugs and issues can be addressed more efficiently.
III. Cost Savings

Open-source software can be developed and maintained at a lower cost compared to proprietary software, as the development and maintenance costs are distributed across a larger user and developer base.
Open-source software is **transparent**, meaning that all users have access to the source code and can review it, test it, and provide feedback. This can **increase confidence** in the software and make it easier to identify and address issues.
V. Reproducibility

Open-source is hard requirement for **reproducibility**. Only open-source code can guarantee that someone other than the original author can reproduce a particular analysis.
VI. Access to Talent

Open-source software development can attract a wider pool of talent, including volunteers and independent developers who are passionate about the project. This can bring new perspectives and ideas, and can help the project to grow and evolve over time.
VII. Standardization

Open-source software can help to **standardize the submission and review of regulatory data**, which can **improve consistency and accuracy** across different submissions.
“Why are we giving away code that we invested millions in for free?”
“Are we losing a competitive advantage by open-sourcing code?”
“How do we ensure high code quality? Who’s responsible when bugs are found?”
Doing now what patients need next