

## Starting the InnerSource Journey: Key Goals and Metrics to Measure Collaboration

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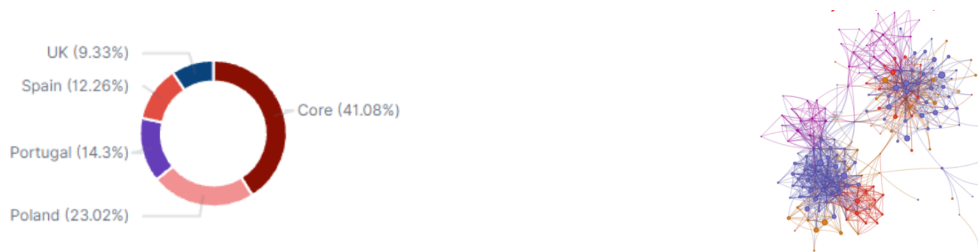
InnerSource is the application of best open source practices within the walls of the organization. Large corporations are required to be more and more efficient in the development of software and even more in the banking industry. There are three main areas of expenditure: infrastructure and facilities, people, and technology. The latter is of importance nowadays as key for the business and core to this paper. Reusability and collaboration are some of the ways a large corporation can be more efficient in technology. By being able to discover existing software and collaborating across business units, departments, or even geographical regions, corporations can share effort across them, and avoid starting once and again a similar piece of software.

Santander Bank has four development teams across Europe (Portugal, Spain, Poland, and the UK). The InnerSource journey started with the ONE App -an end-user mobile app- and this consisted of building the operational model (product owners and others), and the working model (how developers collaborate). In the working model, developers were moved into a process where a PR (pull request in GitHub terminology), testing, and code review were stressed and enforced. Beyond the more policy-related steps, there is a need to measure if these policies are working. Using a Goal-Question-Metrics approach, we defined the main business goals (collaboration in the first stages), discussed with management and developers the main questions and metrics of interest as detailed in the following table. The Collaboration goal was split into four main areas: a) Silo, to check if silos tended to disappear, b) Balance, to see the process of onboarding new countries and the relationship between workforce and actual activity, c) Onboarding, to see the effect of new teams joining the initiative, and d) Activity Focus, to check if activity took place more on the core part of the project than in the local repositories.

Silo	Balance	Onboarding	Activity Focus
Q1 - Are we breaking down the silos by allowing collaboration?	Q3 - Are the several countries working at the same level?	Q5 - Is the taking aligned with the onboarding timeline?	Q7 - Are developers focusing on the core part of the project?
Q2 - How is collaboration taking place at the level of PRs?	Q4 - Are there bottlenecks during the review process?	Q6 - Are the number of developers growing over time according to the onboarding process?	Q8 - Are the core projects the ones with the highest activity?

Table I. Questions related to the Collaboration business goal

All of this information is stored over several pieces of the Santander Bank infrastructure -usual ones in the industry- such as GitHub Enterprise, Jira, or Confluence. The gathering tool is GrimoireLab (a 100% open source tool, a Linux Foundation project) through the commercial service of Bitergia Analytics for InnerSource. This tool gathered all information from GitHub (git logs, and GitHub APIs for issues and PRs), Jira, etc. Once this was curated, it was transformed into the specific insights through the consultancy discovery process that produced the previous table. The questions were answered by the information found in the Bitergia Analytics database.



Questions related: Q1, Q2, Q3, Q5, and Q8. The left chart displays country activity. Those with a bigger slice indicate higher activity. A recently onboarded country (Poland in this case), shows an activity growth over the average and slowly decreases. This is mainly related to local updates required to make the code work. At the same time, the activity of the core grows in net number. The right chart displays collaboration across countries (colors) where nodes are developers, and edges exist between two developers if they participated together in the same PR. This illustrates the size and shape of the existing community.

