Background

The OpenHIE initiative grew out of the RHEA project, where a Health Information Exchange has been developed to support maternal health in Rwanda. More information about this project and the HIE implementation is available here . The OpenHIM (http://openhim.org/) tool was designed and developed as the interoperability layer for the Rwandan project and has been implemented and is currently operational in one district of Rwanda.

Following the rollout of the RHIE in Rwanda, and as the one of first activities of the OpenHIE project, our community was tasked with reviewing and evaluating what makes a good interoperability layer. This included a review of the OpenHIM tool, and an exercise to determine what technologies best suit an interoperability layer for our purposes. The objective was to provide a recommendation of whether we should use/modify an existing technology or built something ourselves, with the ultimate aim of providing a generic IOL tool that is appropriate for use in low-resource settings.

The evaluation

The process and methodology we used to evaluate options for an interoperability layer were:

1. Document use cases and requirements for a Interoperability Layer
    a. Interoperability Layer - Use Cases and Requirements
2. Performance test the current OpenHIM used in RHEA in order to ensure the OpenHIM is scalable to national level
    a. Interoperability Layer Performance Analysis
    b. Estimated load figure for a Rwandan national deployment
3. Create a tool to evaluate how well the Interoperability Layer software meets the requirements
    a. Interoperability Layer Evaluation Tool
4. Compile a list of software that could be used as an interoperability layer
    a. Interoperability Layer - Tools for review
5. Evaluate list software options using the evaluation tool
    a. Interoperability Layer Evaluation Tool
6. Write up results of the evaluation and come to consensus on a recommended way forward i.e. whether to use or modify an existing tool or build from scratch.
    a. Interoperability Layer options and recommendation

The final recommendation

The evaluation showed that there are a number of open source products that could be adapted to function as an interoperability layer for OpenHIE, but the tool which fits our use case most closely is OpenHIM. This tool would need to be built out further in order to meet every feature requirement of OpenHIE and build a stronger community around it, but the core architecture design and the fact that it is fully open source makes the OpenHIM our interoperability platform of choice.