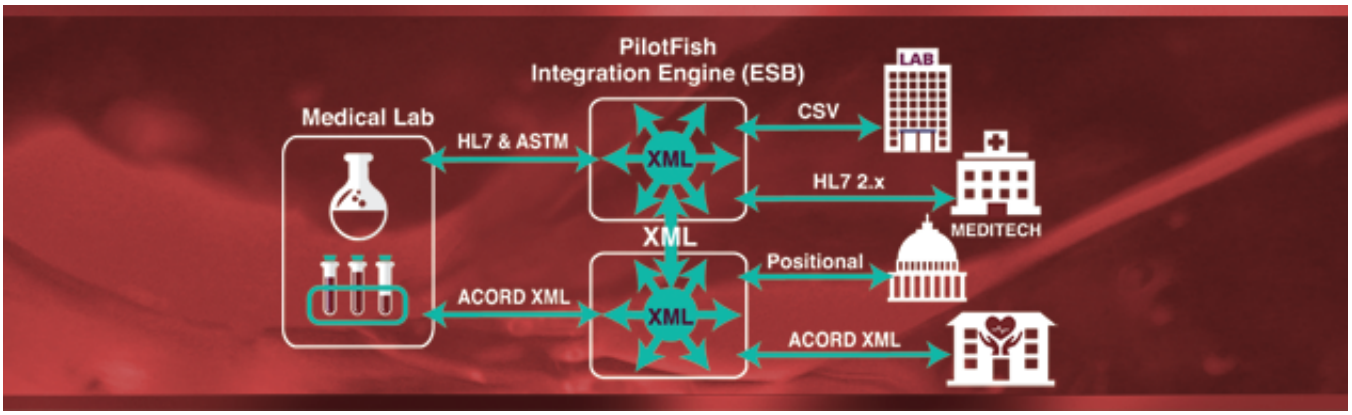
PilotFish Studies in Integration

Standardized Integration Approach Delivers for Leading Laboratory

A subsidiary of one of North America's largest labs is on the verge of being buried under a mountain of requests for interoperability from healthcare providers, insurance providers and government entities. Learn how they partnered with PilotFish to rearchitect their approach to data transformation and transmissions to reach peak integration capability.



THE CLIENT

The client is a leading provider of medical laboratory services and health as well as insurance solutions. Their clients include patients, healthcare professionals, governments, hospitals, other healthcare facilities, sponsors of clinical trials, organizations and payers, as well as other medical laboratories. Their range of services includes medical and genetic testing, digital health, wellness programs and specialized insurance services.

THE CHALLENGE

As one of the largest laboratory companies in the Canada, the client is faced with an unending stream of internal and external integration requirements. Data exchange partners include healthcare providers, government entities, insurance carriers and other laboratories. The client had successfully developed an architecture for addressing these connectivity challenges, along with a team to skillfully execute the implementations. However, the growing need to establish data flows with their clients and partners was rapidly eclipsing the existing team and technology stacks' capacity to deliver.

The organization's incoming CEO immediately identified their integration problem as an area of strategic importance requiring executive attention. She brought in PilotFish (a team of experienced architects) to analyze their existing architecture, assess their current and future integration requirements and work with her staff to propose an action plan to turn this area of risk into a competitive advantage.

The then-current state set of technologies included regionally disparate laboratory information systems (LIS) based on big iron and midrange servers. Integrations were intricately stitched together by a combination of commercial technologies and custom code.

HL7 “standard” lab orders and results are the most common messages dealt with and central to the client’s business. Interfacing with differing HL7 messages required by MEDITECH and other EMRs was just one of the many challenges. The company also manages a growing insurance segment that required implementation of ACORD XML messaging for life policy underwriting. ASTM is also a common source or target data representation, given its prevalence within the medical device integration space.

The volumes and complexity of data integration had reached a level unanticipated by the design of their current architecture. New client implementations were taking too long. An overtaxed staff was backlogged with requests. The knowledge and time required to maintaining existing interfaces continued to compound. The client’s ability to implement was becoming a barrier to growth.

THE SOLUTION

The PilotFish team met with the organization to perform a retrospective analysis of past implementation efforts – with emphasis placed on understanding the calendar time, actual hours worked and roadblocks encountered. Once this analysis was complete, a profile of a “typical implementation” was created. Bottlenecks were cataloged and a list of related, actionable improvements were quantified and prioritized based on value and implementation effort.

The findings were not atypical. The client’s technical architecture was an amalgam of technologies that had accumulated over the years. Each component served a purpose, yet over time the conglomeration of tools led to a growing maintenance burden and an ever-steeper learning curve for new staff members. Aside from the delays directly attributed to technology, client communication, requirement discovery and analysis, testing and debugging were identified as the most time-consuming and risk-prone phases of the average project. Indeed, PilotFish has long observed that communication delays, misalignment of trading partner schedules and priorities as well as availability of requisite knowledge of participating systems are challenges endemic to business-to-business data integration as a whole.

Shortly after the assessment, the organization embarked on a series of improvement to both its business processes and underlying technical infrastructure. The team would add automation and tooling to streamline the time consuming testing process. The plan included implementation of the PilotFish eiPortal, which is be used to “smoke test” issues with trading partner implementations of standards-based messaging (i.e., HL7) without human intervention. As such, visual review is replaced by a set of automated validation rules that report on the conformance of data to the client’s requirements.

The plan also included the implementation of automated regression testing. The number of data manipulation points and the co-mingling of partner-specific transformation rules created an environment ripe for regression issues. The programmatic comparison of known-good pairs of input and output files prior to any production deployment significantly reduces this risk and the corresponding time spent on remediation when issues did occur. Perhaps most importantly, the plan included the overall simplification of the integration architecture. The team has already made significant progress towards gradually reducing the number and complexity of the systems involved in any given interface. The PilotFish eiPlatform has been implemented as the central enterprise service bus and data transformation

framework – a single "interface assembly line" for connecting any two systems, irrespective of data format or connectivity protocol.

The client's relationship with PilotFish has evolved along with the company's growing prominence in the clinical sphere. The laundry list of technologies previously used to support integration across the enterprise is slowly being retired in favor of a standardized architecture built around the PilotFish eiConsole and eiPlatform products.

THE BENEFITS

The client began its migration by using PilotFish as the preferred translation tool when converting between any two data formats. This began to relieve the implementation team – and the organization – of some of the inefficiencies that had plagued them. The variety and depth of technical capability required for transformation work plummeted. Regardless of data format, the same tool and the same approach could now be taken. Business analysts and engineers could collaborate in the same environment.

> *"In metrics, we are finding that by leveraging PilotFish solutions interfacing time has decreased by 50%. With PilotFish we can be more responsive and accommodating to our clients and deliver payloads that are accurate, an absolute necessity in healthcare data exchange. As a result, we consider PilotFish our best vendor of choice."*
>
> Director of Business Applications Development

The implementation of PilotFish across the enterprise for all aspects of data integration has simplified and facilitated all internal integration efforts, allowing the company to much more effectively leverage its small but exceptionally talented technical staff across a larger number of projects. As a result, implementation timelines are becoming more manageable and revenue opportunities are being realized that may have otherwise languished.

THE FUTURE STATE

Client initiatives have an increasing focus on the consumer. Currently, one focus is on personal health management and information that is delivered via a patient portal. Test results, interpretations of these results and personal health trends are readily accessible to the consumer. As health fitness and medical devices, applications and remote patient monitoring become more ubiquitous and part of patient care and consumer wellness, the client will be able to leverage PilotFish's mHealth offering – HealthConnect.

PilotFish HealthConnect enables end-to-end integration of Apple and Android supported medical and fitness tracking devices. It is a platform agnostic application that resides on a smart device (smart phone, tablet or Health data aggregation device). The HealthConnect solution connects the smart device to the PilotFish eiPlatform Integration

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Engine which provides powerful capabilities to transform data into any format and transmit it using any communications protocol. Through the eiPlatform the aggregated data can be delivered to the consumer via the Portal thereby providing them with a complete wellness or fitness record. With this data, the client will be able to provide additional customized health information, personal fitness and wellness trends and other information for improving health.

The architecture and inherent flexibility of the PilotFish solution will enable the client to leverage new web technologies and new standards as they take hold. FHIR (Fast Healthcare Interoperability Resources) the new HL7 specification shows real promise to supplant the HL7 2.x standard. For example, one of the EHR giants in the industry recently announced they will be moving to the FHIR standard and will require their customers to support it. On another front, it is also reported the mHealth developers prefer FHIR. As FHIR is adopted, the client will be well positioned with the already implemented FHIR support in the PilotFish solution.

Overall – with the future-proofed PilotFish integration suite and highly extensible architecture, new client systems can be implemented much more rapidly, which in turn minimizes internal resource costs and realizes new revenue opportunities sooner.

Over the course of nearly 15 years and hundreds of implementations, PilotFish has developed and refined a methodology for the configuration, testing and deployment of interfaces and process orchestrations. We have an unblemished track record of success. Through years of Bake-Offs and Proof of Concepts (POCs) we have demonstrated the value of our integration engine solutions to future customers. Let us conduct a Free Use Case Evaluation for you to determine where PilotFish can provide the most value to your organization and solve your most complex integration challenges.

To schedule a Free Use Case Evaluation and to learn about what PilotFish Solutions can do for your organization please contact us at 860 632-9900 x 309 or Email us at info@pilotfishtechnology.com