New Paradigm – Automated Message Testing and Validation

Electronic data exchange between trading partners has become an imperative for commercial organizations and public institutions alike. In order to remain relevant, cost competitive, or even viable – companies must replace manual processes with automated solutions. For larger entities in particular, the digitization of business-to-business communication entails the planning, development, testing and deployment of point to point connections with dozens – to in some cases thousands – of discrete trading partners. This backlog of time consuming interface work creates a resource strain and expense that challenges even the most well-staffed and well-funded information technology teams. In this case study learn how PilotFish has dramatically reduced the man hours, calendar days and budget hours required to successfully onboard electronic trading partners using the innovative eiPortal framework.
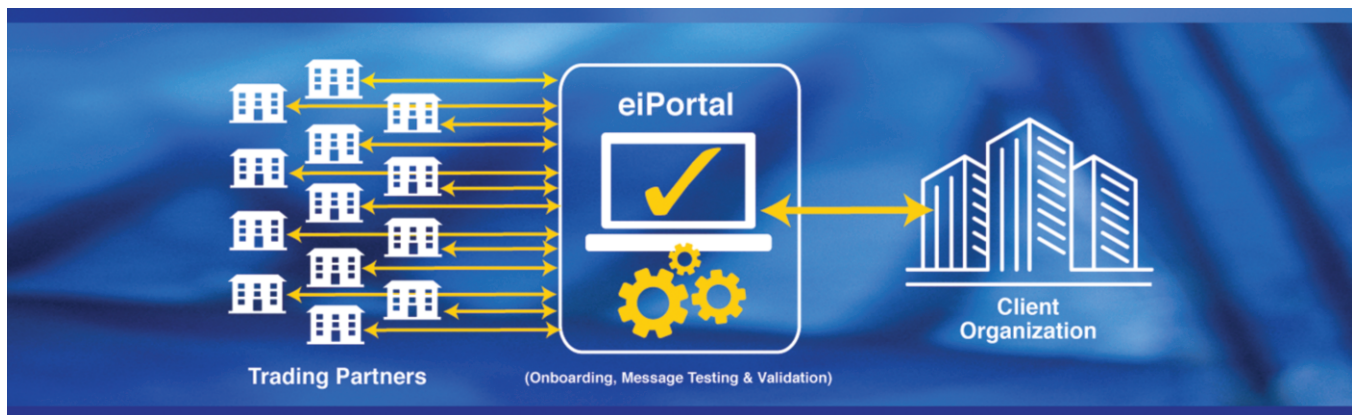
THE CLIENTS

PilotFish worked with a number of clients over the last several years, all of whom share a similar profile. These clients each provide a set of business functions to third-party organizations, where these functions are exposed through a well-defined, common electronic interface.

These clients include:

- A global, nonprofit data standards organization that serves the insurance and financial services industry, working to facilitate the rapid and accurate exchange of data and more efficient workflows through it's stewardship of electronic standards, forms and tools.

- A government Department of Public Health that is subject to a federal mandate to collect and report on pediatric immunizations performed by providers throughout the State, including medical practices and centers, hospitals, clinics and nursing facilities.

- A vendor of laboratory and other medical underwriting services, who received orders from and sends results to companies large and small throughout North America.

THE CHALLENGE

While each of these clients operate in markedly different ways (one is a nonprofit standards organization, the second a government entity and the third a commercial for-profit), they all faced a similar challenge. Each of these organizations exposes a standard set of functionality to the outside world using a single, consistent message format and electronic business process. Due to the number of trading partners with which they are required to communicate, the development of custom "one off" integrations for each is not feasible with respect to initial implementation and ongoing maintenance costs.

Fortunately, as a result of their size and position in their respective markets, they are in a position to dictate the means through which their partners must integrate. This means that they each are able to define the data formats, connectivity protocols, business rules and message flows that will govern the business-to-business data flow. Despite this reality, the implementation of an individual trading partner was not a quick nor inexpensive endeavor. While our clients have performed these implementations dozens of times, it was the first time for each of their trading partners as they implemented to our clients' specifications. Each time a new company came to the table looking to integrate, a protracted implementation process ensued. Typically, a kickoff meeting was scheduled, during which our clients began the process of communicating the standard interface requirements. After the kickoff, the trading partner spent some period of time attempting to implement to the provided specifications.

Once interface development completed, the trading partner sent our client a test message – often via email. Our client then scheduled time to review this message for adherence to the specification. This process often began by a manual "desk check", with issues typed into an email or communicated via phone. Our client and their partner iterated over this process, often many times, before arriving at a message or data feed that "looked" good.

After a message appeared ready based on human review, it was tested by running it through our client's internal system test environment. The process of configuring an appropriate test environment was time consuming. Sometimes, the file or message processed successfully and sometimes it would not. When a file did not process, the reasons for the failure required both diagnosis by our client's IT staff and actionable communication back to the trading partner. This entire process unfolded against a backdrop of competing organizational priorities and schedules. Our clients needed to implement not just one trading partner, but hundreds.

The standards organization was constrained by limited funding and resources. It found itself overwhelmed by member requests to validate messages created using the organization's standards. The for-profit service provider found itself falling woefully behind on strategic IT initiatives, with staff constantly diverted to supporting interfaces. Opportunities to bring on new, revenue-producing clients had to be delayed or, in some cases, turned away as the integration challenges could not be met. The Department of Public Health, already under the crunch of budget cuts, faced ever-mounting mandates to report to the federal government. The state's medical practices and centers, hospitals, clinics, nursing facilities and other providers, had limited technical resources and funding to provide this data to the state. Faced with reimbursement losses and backed up with requests for validating provider messages, this state agency needed a solution, and soon. Across all three, costs were too high, staff was stretched too thin and timelines were too long.

THE SOLUTION

The PilotFish eiPortal product automates every aspect of customer implementation from the distribution of interface requirements, to the automation of testing and the validation of end-to-end business processes. It was designed to offer "low touch" trading partner integrations, replacing many of the typical, manual bottlenecks in the implementation process with automated, self-service equivalents.

PilotFish worked collaboratively with each of these clients to unambiguously document and codify the business rules related to their trading partner interfaces. These rules included everything from basic, schema-driven validation of message formats to more complex business rules related to the interrelationship of different messages across the business process. Simply stated, the goal was to ensure that these rules were documented with enough specificity that adherence could be tested electronically. Furthermore – once a trading partner passed these tests, their interface should be close to, if not completely, production-ready.

Once authored, these rules were configured in the eiPortal framework. All corresponding documentation was also uploaded. Once implemented, the eiPortal provided our clients with a web-based replacement for their traditional means for onboarding clients.

> **"** *"We are excited to partner with PilotFish for our Meaningful Use testing. Managing the attestation of our providers has posed a significant challenge. We have hundreds of hospitals and practices vying for our attention as they scramble to meet federally mandated deadlines. In these fiscally challenging times, our employees at DPH are overwhelmed with work. The eiPortal allows us to eliminate significant human intervention, while providing a higher level of service to our healthcare providers, than would otherwise have been possible.* **"**
>
> Mark Raymond, CTO for the State of Connecticut

Rather than communicating requirements to each and every partner, the eiPortal now provides a means for registered users to download all implementation guides, sample messages and other documentation on their own.
Once the partner has developed an interface to the provided specification, they can log on, upload or paste their sample message and immediately review any issues that the system identifies in the payload. This replaces the process of sending and receiving sample files via email, as well as the resource-intensive desk-checking procedure. When payloads have been validated, the partner can directly send messages from their system to the eiPortal.

The eiPortal has been configured to act as a "virtual trading partner" and will provide contextually-relevant responses consistent with our client's target system(s). This allows the trading partner to test not only the validity of individual messages, but their system's ability to react properly to messages that it may receive throughout the electronic conversation.

THE BENEFITS

The eiPortal is available 24/7, as soon as the partner is ready. This provides them with an immediate response, while eliminating the need to coordinate calendars and to juggle often competing priorities. For the standards organization, the eiPortal has served as the foundation for a "test harness" that is used to certify member organization's adherence to published standards. Replacing what was previously a manual certification process with the automated test harness has dramatically improved the value of the standards, facilitating more consistent implementations that moves their industry closer to "plug and play".

The severely understaffed and underfunded Department of Public Health now serves as a model for other states and agencies after implementing the eiPortal. It was able to handle the deluge of healthcare providers looking to certify their messages against Meaningful Use criteria, and continues to use the software to facilitate onboarding providers into to the State's immunization registry.

The for-profit service provider has been able to redirect critical IT resources to strategic initiatives, while simultaneously offering "self service" testing of new integrations. This approach has allowed them to bring on new revenue streams faster with much reduced expense.

THE FUTURE STATE

Each of these clients has implemented only a subset of the total universe of business processes that they currently expose, or plan to expose, to outside trading partners. Over time, they may expand the number of these workflows that can be validated and simulated through the eiPortal.

Looking forward further, the work done by the standards organization, in particular, provides a roadmap for the future of standards-based interoperability.

Across many industries, such as healthcare and insurance, accepted standards do exist. However, the proliferation of differing versions and interpretations of these supposed standards make "plug and play" integration a myth rather than a reality.

By supplementing written standards documentation with an explicit and complete codification of the related rules, much of this ambiguity is removed. The eiPortal provides the means through which this can be accomplished today. Once business processes are testable through an industry-accepted platform, meaningful certification programs will be developed, and that elusive ideal of standards-based "plug & play" integration will finally become a reality.