READY EDI

Software Development for the 21st Century

A Solution to the Move Health Data Forward Challenge: An API For EDI to Json/Json to EDI Transformation That Can Be Easily Mapped to Any Existing Data Structure

Proposal Description

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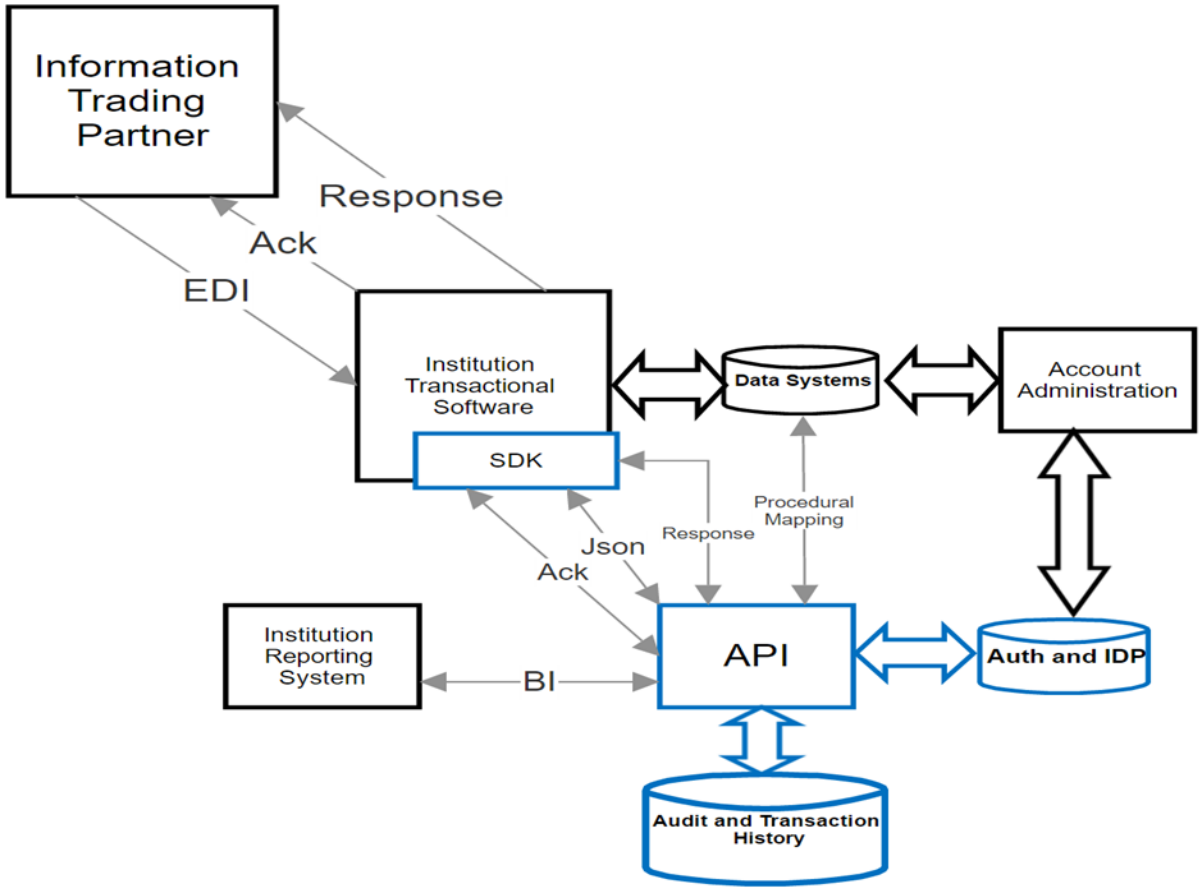
Our Solution:
Our proposed, API for EDI to Json /Json to EDI Transformation can easily be mapped to any existing data structure. This product will include:

- EDI Validation and Acknowledgement
- OAuth 2.0 Authentication (a HEART guideline)
- Built-in Identity Providers (IDP) that meet open ID connect specifications and HEART guidelines
- SDKS for both .Net and Java platforms
- Accelerated Development using our proprietary EDI tool set (EDIOM™) and Application/API generator (BluePrintORM™)
- Procedure driven data mapping
- Meet HIPAA Compliant standards
- Hosting available through Ready EDI
- Auditing and transaction history

Data-Flow Diagram



The above diagram outlines the general flow of information in our proposed API solution. The items in blue represent the deliverables of our solution.

Information Trading Partners can submit their EDI request, in either a standard EDI string or Json string, to the receiving institution. Our SDK, available to reference by the institution's transactional software, can be used to transport the received string to our API. The API may reside within the institution network or on our AWS Cloud network.

The API will validate the string and return a 997 acknowledgement to the Information Trading Partner in either EDI or Json format. For requests requiring a response, such as an Eligibility request, institutions with existing software to support this can transport the response to the API through the SDK for validation and transformation. Institutions that do not currently have this capability, can utilize the built-in procedural mapping. The API provides procedural stubs that can be used to map the response to the information in their data systems.

Authorization, Roles and Identities can be managed by either using existing information in the institutions system that connect with mapping procedures, similar to those provided for response, or through a user interface we will provide. All transactions are recorded in the audit and transaction history repository, whether they pass authorization or not. This information can then be compiled and reported by any existing Business Intelligence System the institution may have or through canned reports we provide.

For smaller institution that lack transaction software, we can provide the application generated from the data model created for the API. Admittedly, this application will only provide the bare necessities for handling transactions. Nevertheless, it will serve as a very inexpensive way for smaller entities to share information. A video demonstrating applications generated through BluePrintORM™ can be viewed at http://www.blueprintorm.com/home/demo. In this 20 minute video a small application for tracking students and grades is generated.

II. How our proposed Solution will improve the exchange and accessibility of Consumer Health Data

Background:

Electronic Data Interchange (EDI) is the computer to-computer exchange of business documents in a standard electronic format between business partners. EDI is the most widely use tool for moving health data. Newer technologies such as Json (JavaScript Object Notation) are increasingly becoming part of the IT environment because it is a lightweight data interchange format which is easy for humans to read and write, as well as for machines to parse and generate. A tool for EDI to Json/Json to EDI transformation that can be easily mapped to any existing data structure will be a huge asset to users who are generating, using and exchanging data.

Additionally, our API solution will offer procedural mapping for generating responses to EDI requests from existing data systems. In computer science, 'mapping' is defined as means for matching items from one set with items from another set. This process involves matching tables in a database with objects in code or performing an operation each item on a list. These objects then become the response and can be delivered to the trading partner in either EDI or Json formats.

Projected Improvements:

Our API will improve the exchange and accessibility of data. Large institutions such as hospitals, insurance companies and others that already have existing systems will be able to send and receive EDI to Json/Json to EDI with their trading partners securely and seamlessly. The resulting transformations facilitate the very movement of data between partners more effectively, faster and at costs below market standards. The savings resulting from use of our API could be passed on to patients and/or insurance companies, lowering the overall cost of healthcare.

This product can help smaller health care institutions such as regional or community hospitals that do not have systems in place or may be using non-compliant and outdated legacy technologies to comply with emerging HIPAA requirements, without the need to buy expensive software. This product can be installed on systems or run from the cloud. Either way, the result will be secure, more efficient data transactions at lower cost; savings that will increase over time.

III. Our target consumer population and/or target health care providers

We will seek to engage health care providers for the test cycle of our solution. We have reached out to administrators at several hospitals near our home office. They include UMass Memorial, Cooley Dickinson, Western Mass Hospital (a state facility) and the Heywood Hospital Group. If we are selected to submit a phase two proposal, we will solidify a memorandum of understanding with one or more of these potential partners.

Once a stable product is achieved, additional potential users include organizations government agencies, hospitals, health centers, public health departments, stand-alone medical practices and medical insurers. We contend these organizations will engage us because our technology will help them meet the challenge to lower the cost of healthcare by promoting the use of electronic data.

IV. Description the specific problem being solved

Many smaller medical facilities lack the IT resources to comply with data interchange standards. The API solution we purpose along with supporting applications will offer an affordable alternative to the facilities. By leveraging our toolsets to produce this solution with very low overhead, we will attempt to offer these services to small institutions at little or even no cost. Creating a large group of users will better enable us to market our services to the larger institution that can afford our standard rates, while still offering a great return on investment.

The centralization of service will prevent individual institutions from taking on this endeavor on their own. As new techniques for data interchange develop, we will extend our service to incorporate them, leaving the burden on the centralized resource rather than the individual organizations. This includes changes in the HIPAA standards for data interchange and meeting those compliances.

V. Methods and technologies used to develop the Solution

In addition to our proprietary technologies, EDIOM™ and BluePrintORM™,
We will use the following technologies: SQL Server, .Net, C#, Java, NUnit, WCF, Web API, MVC, Javascript, JQuery, AngularJS, MEAN Stack, Responsive Design, CSS, HTML, AWS

VI. HEART implementation specifications

Our Custom Authentication Manager extends the Service Authorization Manager that drives the IIS Access Core. This allows us to trap the HTTPS request before the API is invoked. It is here that we analyze the OAuth credentials and recognize the incoming identity by using the IdentityServer 4 and Json Web Token Handler libraries. The results are recorded in the audit table and the user is either sent a 403 unauthorized response or the request is passed on to the API method being called with the appropriate connection string information.

HIPPA Compliance:

Our proprietary tool Electronic Data Interchange Object model (EDIOM) can also be set up to transform transactions to meet HIPAA standardization. Our process facilitates Medical EDI /Json transactions. In our process, hospitals are sent acknowledgement of transactions, as well as text detailing what and where errors occurred. We can validate this EDI string for HIPAA compliance and against HIPAA codes (e.g. 270 standards can be checked each time the 270 code is submitted). This same process is available for all HIPAA-based codes.

VII. Financial Overview

Projected Revenue

We are anticipating slow revenue growth over the initial year or two while we grow a base of small health care providers. Through this user base we hope to attract larger institutions that will pay the following standard rates:

- Internal Endpoint - $499 annual
- AWS Endpoint - $99 monthly up to 10,000 transactions (1 cent per transaction after)
- Mapping - $150 per hour onsite, $115 per hour offsite
- Online Applications - $199 annually per transaction set

On our third year we would like to achieve $400,000 in revenue with 20% growth going forward.

Expense Budget

Our current funders are our clients that we are currently providing software development services to. These include; Travelers Insurance, Planetshoes, Wash Depot and MRCS Imaging.

Should we meet the requirements of this challenge, our budget for the Awards are as followed:
1st $5,000 will go towards the purchase of the latest 7000 series EDI Implantation Guides, so we can support the latest standards.

2nd $20,000 will go towards providing services to the small health care providers that can't currently afford electronic data interchange.
3rd $50,000 will go to marketing our services to larger institutions through trade shows and publications.

Ready EDI as the bandwidth to support the office space, equipment and resources to meet the expenses required of this project, while we are achieving our benchmarks.

Success Matrix

- The development and engineering of our solution has been done
- Our internal tool for benchmarking has met our standards; upon being chosen for phase two we will begin that process.
- secure partners 3 small institutions (community hospitals, standalone practices and/or community health centers)
- Engage 1 large institution/regional hospital/large city health department
- Software has successfully completed pilot testing and met all standards for success

Plan and Timeline

11/15/2016 – Complete testing of latest version of our API generator and publication of the demonstration video on http://www.blueprintorm.com/home/demo
11/30/2016 – Begin onsite testing with partner
12/15/2016 – Complete integration of latest 7000 series X12 EDI standards.
1/102017 – Begin onsite test of full suite of services with a small health care provider.
3/15/2017 – Production release of solution. Begin marketing toward small providers.
9/1/2017 – Begin marketing toward larger institutions.

Key Activities and Resources Required to Employ the Solution

Acquiring testing partners – Along with the outreach we have begun, we will attend a conference of Massachusetts Medical IT professionals on September 14th. We will be promoting our solution and reaching out to more potential partners in our local area.

Production of the API generation demonstration video – The latest version of the API generate is in its final testing and will be ready for demonstration in the coming weeks. We are excited to show off its functionality to the committee hosting this challenge as well as the other entries that may benefit from its capabilities.

Implementing latest 7000 series X12 EDI standards – Each transaction set requires about 12 hours to implement. We plan on intruding 11 of them (269, 270, 271, 274, 275, 276, 277, 278, 834, 835, 837). Developer resources have been allocated.

Engagement with testing partners – We have allocated 200 hours to setup testing partners and address any defects they may encounter.

Marketing – Identification of local small providers without electronic data interchange capabilities has been carried out. Beginning in February of 2017 we will actively market our services at discounted rates to these providers. We have yet to identify the trade shows and publications we want to target for a larger campaign. We will begin that early in 2017.

Plan to make the solution readily available to consumers

Through our AWS Cloud Servers we will publish an endpoint for our API solution. Also on this network, applications for managing API consumers, entering data for transactions and monitoring audits and transaction history will be available. This will allow consumers to utilize the full suite of offering our solution will provide. Instructions for creating the endpoint on local environments will be made available on our public website http://www.readyedi.net.
Success of this solution can be measured by just one small health care provider's ability to interchange data with this API when before they could not, because it is highly unlikely it would end there. When others that have struggled to provide the sharing of information electronically discover that a workable solution is available to them, them will seek it out.