Request for Information (RFI)

For Proof of Concept

Catalyst by Wellstar Overview

Catalyst by Wellstar is the first-of-its-kind global digital health and innovation center created and operated within a health system to holistically address healthcare disruption by harnessing problems, solutions, investments, and partnerships across industries.

Catalyst by Wellstar uses proven innovation approaches to explore, define, identify, assess, test, and implement new capabilities. This methodology accelerates the innovation lifecycle so that Wellstar Health System can realize the impact and value of emerging capabilities within a 90-day cycle.

Client Overview

The Wellstar Consolidated Service Center (CSC) manages over $1.0B in annual medical supply spend for Wellstar Health System, with facilities including 11 hospitals, 5 health parks, and over 260 physician offices. The CSC is charged with the full supply distribution lifecycle and inventory management for the Wellstar facilities across the Atlanta metro area.

After this initial PoC, selected supplier(s) will have the opportunity to work directly with the CSC to develop a Minimum Viable Product (MVP) of the proposed platform using proprietary data.

Purpose

The purpose of this PoC request for information (RFI) is to solicit suppliers' approach, experience, and expertise for conducting an agile product development process that will result in an end-to-end high-dollar, medical supply asset management RFID solution.

This PoC process will select qualified suppliers based on their demonstrated ability to partner with the CSC and Catalyst by Wellstar teams to build out the framework for the full supply chain lifecycle.

Upon successful demonstration of capabilities during this initial Proof of Concept process, selected suppliers will work directly with the Business Owners and Catalyst team to pilot their solution for six months, with a long-term business agreement in FY2023 pending successful pilot.

Background

Current State of Implant Supply Chain

In the current healthcare environment, reducing costs across the spectrum without sacrificing on patient outcomes is a strategic imperative. Consider medical devices, a vertical that sees $200B in spending annually, accounting for 6% of the total US healthcare expenditure of $3.8T. The supply chain alone accounts for over 40% of the cost of medical devices. Within that silo, implants specifically consume twice the amount of spend as all other medical/surgical products.

Pain points exist at every level of the implant supply chain lifecycle, with inventory ownership affecting manufacturers, facilities, and providers. Manufacturers and vendors only control 27% of their inventory, with the remainder held by sales reps in trunk stock, field offices, or hospital consignment. The current paradigm sees an 8-12% loss annually from product damage and expiration as the cost of doing business. Additionally, the implant supply chain sees exceptionally low turn at two or three times per year on average.

Facilities see inefficiencies on the procurement side, with product loss and expiration risk alongside a lack of visibility into product availability and backorders that force expedited freight. Patient-facing providers struggle with product availability- a 2019 Cardinal Health survey of providers found that 74% said “looking for supplies that should be available – but aren’t – has the *most* negative effect on their workplace productivity.”

Current Process & Pain Points

The current implant supply chain process involves a variety of people from different companies and variable roles, thus introducing risk of error. The implant inventory is owned by the manufacturing company.

The initiation point is when the procedure is ordered- on the scheduled day, the physician and sales rep review the case and select the appropriate device(s). A hospital employee must log into the internal electronic health record (EHR) system for the sales rep to enter relevant device data such as serial number and lot number. This step alone represents a compliance risk, both in terms of login security as well as the data entry for the device(s). After the device is implanted into the patient, the sales rep writes any necessary updates into the EHR data and fills out a paper “bill only” form. This form, which is left in a bin, is used by hospital staff to reconcile inventory and generate a retroactive purchase order for the sales rep before the process is handed off to the accounts payable team.

The two critical points of risk in this operation are inventory availability and data entry. The real-time visibility into the inventory levels is currently minimal for each stakeholder: the vendor, the

sales rep, and the hospital staff. Expedited freight costs are a regular occurrence due to subpar inventory management, potentially affecting the timeline of the delivery of care. On the data entry side, any mistake made in entering the device metadata can invalidate the whole process. The barcode scanning on the packaging often does not work, leading to multiple manual entries by an unauthorized user into the EHR.

For the type of procedure being considered in this use case, the quarterly inventory spend is approximately $2.4M. The volume of inventory moved is about 115 items every 2 weeks. These critical risk points can be mitigated by solving the visibility problem and building fuller automation of the supply chain process. The Client is aiming to drive efficiency and accountability through greater ownership of the inventory and process itself from warehouse to distribution to hospital to operating room.

Potential Solutions

The primary objective is greater visibility and transparency at every step in the lifecycle, from manufacturer to distributor to provider. For the healthcare system, direct ownership of that inventory from the point of delivery until consumption can provide that visibility. Maximizing just-in-time replenishment efficiency will reduce the risk of both product expiration and slow-moving inventory. Another benefit to greater visibility is having the product-level metadata for each implant consumed in a procedure. A solution will enable the user to locate the product anywhere in the Supply Chain process.

One of the current best practices in supply chains outside of healthcare is a **radio frequency identification (RFID)** system. RFID is a type of automatic identification and data capture technology that uses radio waves between a tag and a reader to transmit data. A critical difference between barcodes and RFID is that an RFID tag can be read outside of the line of sight, while barcodes must be visible to an optical scanner. An RFID solution must be able to read a unique identifier (UID) from a distance without manual interaction. RFID tags can either be passive or active; active RFID tags are powered units, making them able to transmit data constantly but at a higher cost.

RFID tags are one small component of an **Internet of Things (IOT)** architecture that serves to improve visibility and drive efficiency in the supply chain. The automation piece alone can eliminate both labor hours as well as risk of human error and inventory loss. The big data collection can help to maximize efficiency in procurement processes such as forecasting and inventory control.

Another solution is **computer vision**, leveraging **artificial intelligence (AI) and machine learning (ML)** to fully automate the warehouse management aspect of the process. One of the challenges with RF signaling is the potential for multipath signal interference, when multiple radio paths

exist between the reader and a tag. An effectively implemented computer vision program could reduce errors in that inventory management piece. Computer vision is also used in the retail space to optimize actions such as shelf placements and pathways through AI/ML to bring even more efficiency to the warehousing process.

From a scalability standpoint, this initial project is focused on asset management for implants, which are high-value, low turn inventory assets in small packages. However, this project is for a variety of general applications, as there is a plethora of high-value, low churn assets in the hospital supply chain outside of implants alone.

The ability to create and write to an API that would integrate with an ERP system is essential to the solution. If properly developed, it would create an abstraction layer that would make the solution more interoperable with various ERP systems.

The Client is interested in any cutting-edge solution that will improve visibility and efficiency in the supply chain of high-value, low turn inventory assets such as surgical implants, whether that is RFID alone, a combination of computer vision and RFID, or something innovated in outside of the above solutions. While the Client recognizes that automated inventory management through RFID is currently an industry best practice, any potential solution to this problem is welcome.

Proof of Concept (PoC) Objectives

The business objectives for this PoC are as follows:

1. Identify and evaluate different technological solution approaches to determine the current technology maturity level of individual components and overall system capabilities.

2. Select supplier(s) based on ability to demonstrate that their approaches can provide a fully automated, high-capacity solution.

3. Determine the technical cost, schedule, and feasibility to develop and deploy a six-month pilot project in 2022.

PoC Approach

- **Task**: Prove out and demonstrate a concept of utilizing technical capabilities to track and manage items through every step in the process, from point of delivery to consumption.
- **End State**: An intelligent, automated system for managing the entire supply chain lifecycle of an implant, from the receiving dock to the operating room, with data integrations into all operationally critical systems.

Key Performance Parameters

The following are the Key Performance Parameters (KPPs) that the solution should satisfy. Each KPP will either have a "(T)" to indicate a minimum threshold requirement or "(O)" to indicate a desired objective capability.

KPP #	TYPE	PARAMETER
Core AIDC Functionality		
1.0		Multi-functional tags
1.01	T	Ability to print OR manufacture and apply tags to packages
1.02	T	Ability to apply in multiple locations
1.03	O	Ability to remove, and reapply tags
1.04	T	Ability to apply tags to small packages of various sizes (approx. 0.5" to 4"x 4")
1.05	O	Tags include temperature detection
1.06	T	Tags include relevant dates data
1.07	T	Tags include product unique information
2.0	T	Read and associate tags
2.01	T	Read tags at multiple storage locations
2.02	T	Read tags during transit
2.03	O	Ability to associate inventory with specific storage environment and location
2.04	O	Ability to reconcile data
2.05	O	Ability to read tags in implant rooms or surgical core rooms
3.0	T	Data integration into third party systems via API
3.01	T	Enterprise resource planning system
3.02	T	Warehouse/inventory management system (if applicable)
3.03	T	Ability to validate data from other systems
4.0	T	Data & Security
4.01	O	Platform has a separate network
4.02	T	Platform sits on separate infrastructure network

5.0	T	Inventory storage
5.01	T	Storage at tag application site via room or large cabinets
5.02	O	Storage at second location via small smart cabinets
5.03	O	Ability to sync inventory data with tags in real-time
5.04	O	Stocking optimization practices
5.05	T	Stored in different ways (DES, BMS, Coils, numerous other stents)
5.06	O	Return of unused inventory to storage / cabinet
Ancillary Functionality		
6.0	O	Packaging functionality
6.01	O	Smart packaging with tag reading functionality
6.02	O	Packing that eliminates the need for tags
6.03	O	Sustainable packaging that eliminates plastic and carboard
7.0	O	Computer vision to read and identify inventory in a room

Additional Use Cases

The issues inherent to delivering implants to patients are consistent across the medical device supply chain for distributors and providers across the spectrum. Regardless of whether health systems have their own in-house supply chain or use a 3PL model, greater visibility to improve both cost- and time-efficiency is an industry pain point. The Client believes that automating the implant supply chain is the first of many business cases for the proposed solution to drive significant strategic value and business growth.

Selected supplier(s) will have the opportunity to learn more about these additional opportunities provided that the initial PoC and proposed project are delivered on to earn the opportunity to participate in additional use cases.

Proof of Concept (PoC) Scope

The goal of the PoC process is to rapidly demonstrate supplier capabilities and subsequently develop an initial working solution so that the potential capabilities and cost of the proposed design can be evaluated in a timely and cost-effective manner.

The PoC is desired to produce / select a solution for deployment. However, it is understood that additional R&D effort may be required using an iterative approach to develop a final solution that fully satisfies all the performance capabilities.

Selected supplier(s) will be invited to perform proof of concepts, demos, and site visits to demonstrate their ability to meet the technical requirements of the project.

Out of Scope

The following requirements are out of scope for this PoC:

1. This PoC will not integrate or implement directly into the Client's existing data systems. The intention of this PoC is for vendors to demonstrate the capabilities of their solution interfaces.
2. The proposed solution must not include a proprietary solution that represents another software layer, including but not limited to item master or inventory transaction master
3. This PoC will specifically cover the supply chain lifecycle of one specific type of medical device to Client facilities.

Post Proof of Concept (PoC) Plan

The goal of the PoC process is to rapidly develop and demonstrate an initial working prototype solution so that the potential capabilities and costs of the proposed design can be evaluated in a timely and cost-effective manner.

The ability to track and manage inventory and reconcile data through API integration to an ERP system is essential to the solution. If properly developed, it would create an abstraction layer that would make the solution more interoperable with various ERP systems and allow for a 'search and identify' of a product at any point in the supply chain process. The final selected supplier after the PoC phase will conduct a six-month pilot with the Client to demonstrate long-term feasibility before fully scaling up. The six-month pilot terms will be negotiated after the PoC process.

RFI Response

Vendors shall submit their response to this RFI by the deadline of November 30, 2021. The response should include but is not limited to the following information:

- The willingness to sign a mutual non-disclosure agreement (NDA) before any further discussions begin
- **Technical Capabilities**: A report on the solution's ability to provide end-to-end asset management for the medical devices in question, including a high-level description of current capacity as well as the plan for future innovation for the solution.
- **Cost**: RFI response should include a description of the cost to conduct a PoC to fully demonstrate the capacity of the solution to meet the Client requirements.
- **Schedule**: Describe how the supplier has developed, integrated, and/or deployed technology to solve other problems that are similar in nature and provide an estimated timeline for this project.
- **Past performance**

All responses and questions should be directed to catalyst@wellstar.org

Timeline

To manage all stakeholder's time, will not accept any calls while responses are being collected. Any questions submitted will be disclosed to all participants during response times.

Questions will be answered Nov 15th and 19th via closed webinar and posted document.

December 3 - 8: Expect a response from the catalyst team including questions on your response.

December 8- 17: Responses will be collected and reviewed by the Catalyst team.

December 18 – 31: Selection of finalists that will move on to demonstrations.

January 6: Proof of concepts and demonstrations of finalists.

February: Pilot

Intellectual Property (IP)

All intellectual property rights, including copyrights, patents, patent disclosures and inventions (whether patentable or not), trademarks, service marks, trade secrets, know-how and other confidential information, trade dress, trade names, logos, corporate names and domain names, together with all of the goodwill associated therewith, derivative works and all other rights (collectively, "Intellectual Property Rights") in and to all products, documents, work product

and other materials are owned by Wellstar. The vendor will not acquire any ownership interest in any of the Intellectual Property Rights.

Frequently Asked Questions (FAQs)

1. **What is a Proof of Concept (PoC)?**
    a. A PoC is a demonstration of a vendor's capabilities to solve a real-world enterprise problem. A typical PoC will last between one and two weeks. It is a great opportunity to showcase products or services with a "real" customer.
2. **How does the vendor selection process work?**
    a. Catalyst conducts a discovery process with due diligence to scope the capabilities that its customer seeks.
    b. Catalyst identifies vendors with products and/or services that address the customer's needs. During this step, the Catalyst team will work directly with potential vendors.
    c. Based on feedback from the Client, Catalyst will short-list those vendors and schedule conference calls to review customer requirements in anticipation of a vendor proposal. Catalyst typically selects up to four vendors from this list to conduct a PoC for the customer.
    d. If the customer decides to move to a pilot stage, or to procurement, the customer will work directly with the vendor(s) it selects, unless the Client authorizes Catalyst to continue in a project management or similar role.
3. **Will the vendor work with the enterprise customer?**
    a. If Catalyst selects a vendor to participate in a PoC, the vendor's representatives will work with the Client directly. During the demonstration, vendor participation should be limited to those personnel necessary to support demonstration, a presenter/spokesperson, and no more than one company executive or salesperson. This is a great opportunity to understand the enterprise context, demonstrate capabilities, and develop a business relationship.
4. **Who will provide the Nondisclosure agreement (NDA)?**
    a. Wellstar will send over a mutual NDA for signature once a response to this RFI is collected via Adobe Sign
    b. The inability to comply or execute the NDA in a reasonable timeframe will result in a dismissal of the vendor from the selection process
5. **Where should any additional questions about the PoC process or this RFI be directed?**
    a. The Catalyst by Wellstar team can be reached via email at catalyst@wellstar.org.