Full-Chain Traceability Case Studies:

Key Findings from the Field

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Introduction

In 2016, Future of Fish conducted primary research across nine traceability implementation initiatives to better understand strategies and challenges with existing full chain traceability efforts. We spoke with thirty-one processors, wholesalers, retailers, and traceability vendors, as well as NGOs that facilitated these efforts. The nine case studies included domestic US supply chains (both local and national distribution), and artisanal export supply chains of international origin. In addition to this initial research, we have continued to gain insights from our own traceability pilot work in the field and our continued engagement with traceability technology vendors. The following document provides a high-level summary of key findings from these efforts to date. Due to the sensitive nature of data collected, all findings are presented in aggregate and specific details about pilots and pilot participants remain anonymous.

Our aim was to understand the motivations behind supply chains adopting traceability systems, and to identify the types of costs and benefits businesses were seeing as a result of implementation, especially with regard to a return on their investment. Our goal was to collect information from projects that involved multiple nodes, and ideally, multiple independent traceability systems that were interoperating. We also looked for patterns in strategies that worked well for engaging stakeholders in pilots.

Key Findings

Few Full-Chain, Interoperable Traceability Pilots

As of July 2016, we were unable to find examples of multi-node (more than two) supply chain actors engaged in traceable trade using multiple, interoperable technologies. We did identify cases where two nodes had connected two independent systems; or where multiple nodes used the same system—with companies often reporting only a portion of their total trade volume through this shared system.

To date, there continue to be very few—if any—(non vertically-integrated) seafood supply chains where electronic, full-chain traceability exists due to successful implementation of interoperable, independent traceability systems. Future of Fish is currently engaged in pilot projects that are seeking to achieve full chain traceability to augment these findings and we continue to look for examples of other initiatives in the space. Please contact us if you are involved with or know of any initiatives.

We therefore focus our findings on understanding the the motivations for pursuing full chain traceability and the strengths and weaknesses of different processes and strategies for engaging multiple stakeholders in a traceability initiative.

Motivations Vary by Actor

Similarities and differences among the case studies existed in terms of the types of stakeholders involved, the source of pressure for traceability adoption, and how the pilot was structured—for example, whether technology was paid-for or provided for free or at a subsidized rate. Based on these observations, we created a "Deployment Typology" (Figure 1) to look for patterns across this variation.

To assist with pattern-finding, we categorized the stakeholders in each supply chain as follows:

(a) First-mile (fishers and primary processors)

(b) Mid-chain (wholesalers, distributors, secondary processors, exporters, importers)

(c) Last-mile (retailers)

Additional participants in pilots also included third parties such as NGOs working in the fishery, certification bodies, fisher associations and traceability technology vendors.

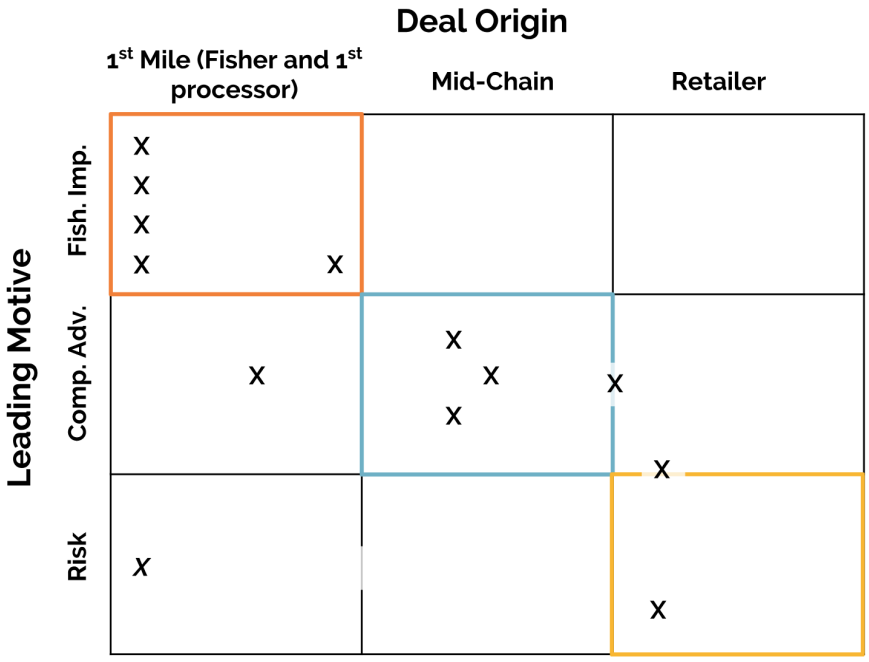

Figure 1. *Deployment Typology Framework to capture motivations driving traceability implementation across the supply chain. Deal origin: from where in the supply chain the work for traceability originated; Leading Motivation: the original motivation for the primary or first stakeholder to initiate or join the project. X denotes the supply chain node of the initiating stakeholder for all case studies, including those beyond the original nine from 2016, and their primary motivation for engagement.*

Overall, we found a strong correlation between position in the supply chain and three primary drivers for traceability implementation:

FIRST MILE

Motivation: In the first mile of the supply chain, organizations (typically 3rd party such as industry associations or NGOs) were most motivated by fishery improvement outcomes including conservation and fisher/community livelihoods and wellbeing. Risk can be a driver for the first mile where proof of origin alleviates a health risk or IUU contcern.

Funding: Pilots originating in the first mile tended to be funded or subsidized by grants (charitable foundations or non-governmental organizations), to progress conservation outcomes.

MID-CHAIN

Motivation: For traceability projects initiated in the middle of the supply chain, wholesalers and processors tended to be motivated by competitive advantage. For these businesses, traceability represented differentiation over commodity competitors, and offered a means of achieving higher quality, sustainable product and great operational efficiencies (e.g. faster inventory turns, avoiding lost or spoiled product, etc.).

Funding: Mid-chain deployments tended to be self-funded by industry.

RETAILER / LAST MILE

Motivation: In the last mile of the supply chain, organizations were seen to be avoiding or managing risk (e.g. ability to prove the origin of product to not be associated with claims of fraud, etc.). For these organizations, traceability allows for effective, efficient recalls, and solid food safety compliance. For suppliers in these pilots, traceability offered a way to ensure continued access to large buyers.

Funding: As with the mid-chain deployments, last mile deployments tended to be self-funded by each organization.

While it is not surprising that different actors in the supply chain are driven by different motivations, understanding the specific incentives is critical to effectively engaging supply chain partners. The findings here provide insight into some general guidance that can be used to manage expectations and align trading partners around traceability initiatives. For example, a mid-chain business may not be convinced to pursue traceability on the basis of risk mitigation, but may be more engaged by a program that highlights potential for increased revenue and competitive advantage. Likewise, conservation benefits may drive first-mile actors to the table, but the program will require clear incentives for business benefits that reduce risk or increase competitive advantage in order to expand participation downstream.

Alignment Before Implementation

It is important to seek shared understanding of motivations and individual barriers before commencing traceability deployment. Government alignment should also be considered, as policy can often dictate a large subset of data to be captured and shared. Investing in alignment of traceability stakeholders upfront yields a more coordinated program with increased buy-in, and makes programs more resilient to changing circumstances.

Market the Benefits of Traceability, Not Traceability Itself

A common characteristic of implementations that gained positive traction, was that becoming a traceable supply chain was not seen as the goal of the program—nor is there evidence for a market for traceability in and of itself. Anchor organizations leading traceability adoption efforts should orient conversations around the benefits of traceability, rather than proposing traceability as an outcome unto itself. Traceability technology is a powerful tool that can deliver myriad benefits, from gaining market access to informing better management and efficiency gains. Traceability is a core part of supply chain and fishery transformation that leads to better outcomes for those that take part.

Accomodate Workflows

Technology products are often designed with a workflow in mind, however supply chain organizations should ensure that the technology adequately integrates with their core business processes. This may require some customization of software, but can achieve better socialization and buy-in from staff. There is a balance to be struck between change management for new processes, and adaptation of traceability technologies to the unique ways that each business establishes its own workflow.

Lack of Standards Thwarts Interoperability at Scale

Traceability is still nascent in the seafood industry. One common barrier encountered was the lack of an interoperability protocol with which to easily share data between organizations. Future of Fish has been engaged with multiple traceability vendors, in a pre-competitive trade association to try to address these barriers, in pursuit of common standards and interoperability practices. Read more about the Trade Association for Seafood Traceability Technology (TAST-T) here: *https://www.tastt.org/*. In addition, efforts to align industry to develop agreed-to standards for interoperability are underway via the *Global Dialogue for Seafood Traceability*.

Moving Forward

As has been noted in *Hardt et al., 2017*, the barriers to full-chain traceability implementation are not technological; instead, they result from a lack of supply chain alignment; the absence of standards; and other change-management and financial challenges. Efforts to push for greater transparency and traceability in seafood supply chains will benefit from incorporating a nuanced and targeted approach with different stakeholders, dependent in part on the position they occupy in the supply chain. Continued support to execute full chain traceability and examine where and how these efforts succeed, and share learnings across the space, would go a long way in helping to accelerate progress. Such efforts would help distill robust best practices, as well as identify the costs and benefits of traceability in action.

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