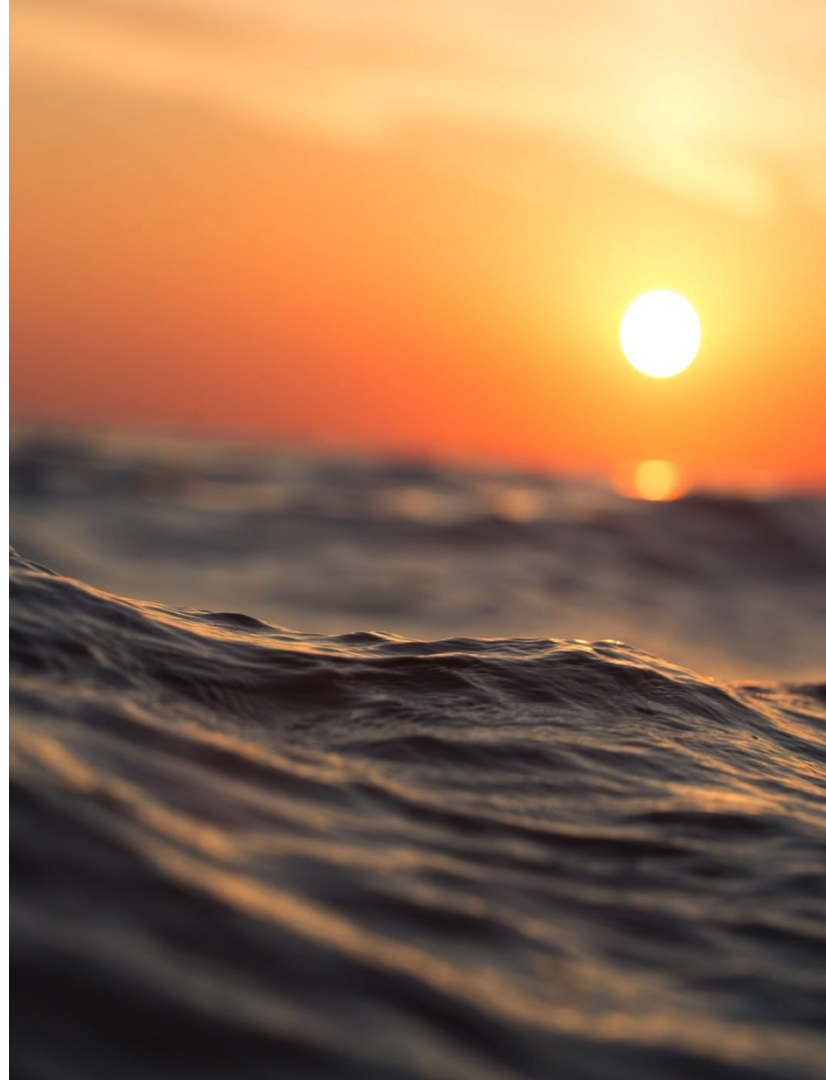
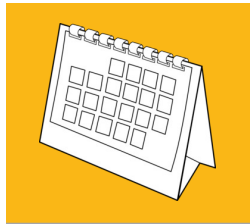

Traceability ROI

Evaluating the costs and benefits of implementing a traceability system



Purpose

- Traceability is a big investment for seafood companies, with many factors to consider
- Future of Fish seeks to provide an objective return-on-investment analysis to guide the decision making of seafood companies when considering electronic traceability
- Our analysis focuses on three core facets of ROI



True Costs & Benefits

- In addition to equipment and wages, what are the true costs faced by those who opt-in to full traceability?
- What additional benefits can be realized (e.g. through full-chain traceability)?

Cash Flow

- For those who opt in to traceability, when will there be cash flow issues?
- What types of organizations can expect what types of cash impacts?

Payback Period

- How quickly, if at all, will investment in traceability pay for itself?
- Which factors drive the ROI profile?

Method

- Our analysis considers a comprehensive range of costs and benefits to your organization, to highlight the “true costs” and benefits that may be less intuitive
- A worksheet is provided to estimate the impact of each cost and benefit category – factors can be omitted where they do not apply
- The model considers focuses on the bottom line (e.g. does not consider staff reallocation to be a cost, but will assess net increase or reduction in FTE)

We conducted primary research across 9 traceability implementations with 31 processors, wholesalers, retailers and traceability vendors, and have iterated this model through feedback from seafood companies and traceability vendors.

You can read more about our traceability case study research on our website futureoffish.org

Cost Framework

Category	Factor
Hardware	<ul style="list-style-type: none">• Servers• Network Devices• Terminals• Scales• Scanners• Renovations to accommodate the above
Software	<ul style="list-style-type: none">• Activation Fees• License Fees
Contractors	<ul style="list-style-type: none">• Implementation• Full Chain Integration• Training• Support & Maintenance (IT)
Trade	<ul style="list-style-type: none">• Supplier premiums (i.e. higher cost incurred from new suppliers, if your current can't meet requirements)
Staffing	<ul style="list-style-type: none">• New hires (e.g. data analysis, marketing)



Benefit Framework

Category	Factor
Efficiency & Quality	<ul style="list-style-type: none">• Reduced product waste (i.e. from faster inventory turns and reduced shrink, reduced spoilage and lost product)• Reduced packaging waste (lost, damaged product can be tracked, and root cause addressed)
Pricing	<ul style="list-style-type: none">• Optimization (e.g. more accurate cost-based pricing, more responsive to demand, etc.)• Certification premiums (if traceability will help you achieve certification)• Story premium (if your supply chain will convey traceability data to high-paying consumers)
Trade	<ul style="list-style-type: none">• Reduced credits (e.g. from more accurate weights)• Reduced insurance premiums (e.g. for verifiable origin)• Increase profits from new sales (i.e. new market share)
Staffing	<ul style="list-style-type: none">• Headcount reduction - Data (e.g. data gathering, processing, reporting activities, including audit and compliance reports)• Headcount reduction - Operations (e.g. by identifying and reducing idle labor)



Guide

1. Review the ROI Factors, to familiarize yourself with the types of data you will need to gather and prepare for input (e.g. percent of product waste today vs. future state)

Costs				Benefits			
Category	Factor	Description	Calculation Method or Source	Category	Factor	Description	Calculation Method
Hardware	Servers	Your traceability system may require one or more onsite computers to serve the application.	Unit cost	Efficiency & Quality	Reduction in Product Waste	A core benefit of traceability systems, resulting from reduction in lost inventory, faster inventory turns, first-in/first-out process adherence, and decreased shrink.	Percent waste avoided (relative to total product) * Percent applicable product
	Network	You may require new WiFi routers and/or wiring to support the system.	Unit cost		Reduction in Packaging Waste	Beyond product costs, traceability may help you track and better manage packaging waste.	Percent waste avoided * Percent applicable packaging
	Terminals	Most traceability systems require terminals (monitor, keyboard, stand, etc.) to enter data.	Unit cost	Pricing	Certification Premium	Traceability can help to achieve new certifications that yield a price premium.	Percent premium * Percent certified product
	Scales	Electronic scales to weigh product.	Unit cost		Story Premium	Traceability can allow you to market "storied fish" for a premium price with end consumers (or avoid discount for opaque origin).	Percent premium * Percent storied product
	Scanners	Bar code scanners to track flow of product, typically included on terminals.	Unit cost		Pricing Optimization	Traceability allows for more accurate cost-based pricing.	Avg. percent increase
	Other	Any other peripheral devices or hardware required by your system (e.g. iPad/tablet, RFID reader, etc.)	Unit cost	Trade	Increased Sales Volume	Traceability may help you attract additional buyers looking for traceable, verifiable product.	Percent volume increase
	Software	Activation Fee	One-time software fee charged on setup of the traceability system		Vendor quote	Reduction in Insurance Premiums	Having proof of origin and more robust product data can unlock lower premiums from general liability insurers.
	Annual License Fee	Annual fees for usage of your traceability system - these may be charged per user, per seat, or as a flat annual fee.	Vendor quote	Reduction in Credits	Customers may ask for credits due to discrepancy in order weight and items - traceability can provide a verifiable source to dispute false claims.	Percent reduction * Current credits (annual)	
Contractors	Onsite Implementation	Fees charged during configuration and customization of your traceability system.	Days per Year * Day Rate	Staffing	Headcount Reduction - Data	Traceability greatly reduces the effort required to collect and process data and reporting (e.g. during audits), and may allow you to remove or redeploy these staff.	# FTE * Avg. Salary
	Full Chain Integration	Additional configuration or customization fees charged to integrate your system with buyer and/or supplier systems.	Days per Year * Day Rate		Headcount Reduction - Operations	Traceability can optimize workflow on the floor, yielding a more efficient operation, and potential labour savings.	# FTE * Avg. Salary
	Training	Costs of external trainers to help staff learn the traceability system and new business practices.	Days per Year * Day Rate				
	Support & Maintenance	Fees charged by external consultants to fix and/or maintain your traceability system.	Days per Year * Day Rate				
Trade	Supplier Premium	Committing to traceability and transparency may require you to switch to different suppliers for some products (e.g. for proof-of-origin) with higher costs.	Percent Premium * Percent Eligible Product				
Staffing	New FTE	You may choose to hire new staff for value-added functions like data analysis, or traceability marketing ("storied fish").	# FTE * Avg. Annual Salary				



Guide

2. Complete the ROI Worksheet on the second tab, leaving any non-applicable items blank

Company Info				
Company Name	Annual Sales (\$)	Volume (MT)	Packaging Costs	Core Product(s)
Traceability Fish Ltd	\$ 20,000,000.00	2,000,000	\$ 5,000,000	Tuna, Squid, Lobster

Hardware Costs			
Item	Number	Unit Cost	Longevity (Years)
Servers		2 \$ 5,000.00	5
Network Devices		4 \$ 200.00	5
Terminals		2 \$ 5,000.00	5
Scales		2 \$ 1,000.00	5
Scanners		2 \$ 200.00	5
Renovation Costs		1 \$ 1,200.00	N/A
Other			

Software Costs			
Item	Number	Unit Cost	
Activation Fee		1 \$ 65,000.00	
Annual License Fee		1 \$ 5,000.00	

Contractor Costs			
Item	Days	Day Rate	Comment
Onsite Implementation		8 \$ 1,000.00	Initial setup
Full Chain Integration		4 \$ 1,000.00	Initial setup
Training		10 \$ 600.00	Initial setup
Support & Maintenance		5 \$ 1,000.00	Ongoing operation

Trade Costs		
Item	Premium	% of Product
Supplier Premium	1%	20%

Staffing Costs			
Item	# FTE	Avg. Salary	Examples
New Hires		0.5 \$ 30,000.00	Marketing, Data analysis, IT

Efficiency & Quality Benefits			
Item	% Improvement	% of Product	Examples
Reduction in Product Waste	1%	100%	Shrink, Spoilage, Lost Inventory
Reduction in Packaging Waste	1%		Lost Inventory

Pricing Benefits			
Item	% Improvement	% of Product	Examples
Certification Premium	0.50%	20%	
Story Premium	2%	20%	
Pricing Optimization	0.50%	100%	Better cost-based price calculations

Trade Benefits			
Item			
Increased Profits from New Sales	\$200,000		
Reduction in Insurance Premiums	\$3,000		
Reduction in Credits	\$100,000		

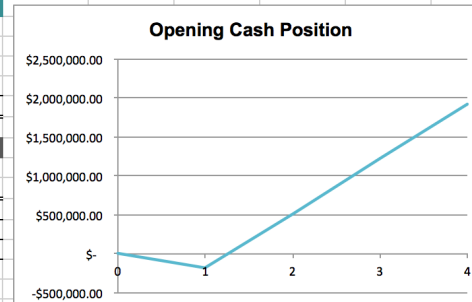
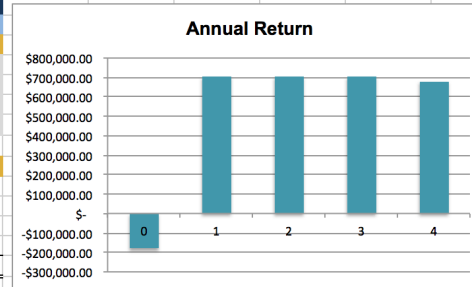
Staffing Benefits			
Item	# FTE	Avg. Salary	Examples
Headcount Reduction - Data	0.5	\$ 30,000.00	Data collection, reporting, audit
Headcount Reduction - Operations	0.5	\$ 25,000.00	Streamlined processing, idle labour



Guide

3. Review the ROI Model, which will indicate payback period and IRR

Year	Baseline	Year of Operation			
	0	1	2	3	4
Implementation Costs - Standalone					
Hardware	\$ 24,400.00				
Software Fees	\$ 65,000.00				
Contractor Fees	\$ 18,000.00				
Total Setup Cost	\$ 107,400.00				
Ongoing Annual Costs - Standalone					
Hardware Replacements	\$ 23,200.00	\$ -	\$ -	\$ -	\$ 23,200.00
Software Fees	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00
Contractor Fees	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00
Supplier Premiums	\$ 40,000.00	\$ 40,000.00	\$ 40,000.00	\$ 40,000.00	\$ 40,000.00
Total Ongoing Cost	\$ 73,200.00	\$ 50,000.00	\$ 50,000.00	\$ 50,000.00	\$ 73,200.00
Ongoing Benefits					
Efficiency & Quality Improvement		\$ 250,000.00	\$ 250,000.00	\$ 250,000.00	\$ 250,000.00
Price Premiums & Optimization		\$ 200,000.00	\$ 200,000.00	\$ 200,000.00	\$ 200,000.00
Trade Benefits		\$303,000	\$303,000	\$303,000	\$303,000
Staffing Benefits		\$ 27,500.00	\$ 27,500.00	\$ 27,500.00	\$ 27,500.00
Total Ongoing Benefits		\$ 753,000.00	\$ 753,000.00	\$ 753,000.00	\$ 753,000.00
Total Cost-Benefit					
Net Costs	\$ 180,600.00	\$ 50,000.00	\$ 50,000.00	\$ 50,000.00	\$ 73,200.00
Net Benefits	\$ -	\$ 753,000.00	\$ 753,000.00	\$ 753,000.00	\$ 753,000.00
Annual Return	-\$ 180,600.00	\$ 703,000.00	\$ 703,000.00	\$ 703,000.00	\$ 679,800.00
Opening Cash Position	\$ -	-\$ 180,600.00	\$ 522,400.00	\$ 1,225,400.00	\$ 1,928,400.00
Breakeven Year?	No	Yes	No	No	No
Breakeven Point (months)	15.1				
5 year IRR	388%				



Interpreting the Results

- Look for your top drivers of ROI, and focus on these items (e.g. an organization with significant spoilage and shrink today should focus on these benefits vs. an consumer-facing organization with concerned customers may focus on story premiums)
- Work with your traceability vendor (or candidate vendors) to realize these core ROI drivers, and mitigate excessive cost
- Set realistic expectations - traceability systems will deliver benefits when the organization embraces the system and new business practices



Additional Factors not Considered

These additional factors have not been modeled due to difficulty quantifying their impact:

- **Mitigation of major risk events**
Full chain traceability protects your organization and its supply chain against major reputational damage during exposés or fraud cases
- **Staffing reallocation to value-added activities**
While redeploying staff to value-added functions does not avoid their salary cost, it can yield benefits, for example by analyzing/solving the root cause of operational problems, or building stronger customer relationships
- **Transparency discount**
Some seafood companies fear traceability will strengthen their buyer's position in price negotiations, however in our research, compromising data was typically not shared unless buyers and supplier were already in a pre-committed cost-plus program



Assumptions & Generalizations

- For simplicity, reporting has been annualized, and does not show the month-to-month impact of costs and benefits
- Benefits are assumed to occur starting in the **second** year of operation, once new business processes and practices have been established – payback period may lack precision as a result (e.g. immediate benefits not reflected)
- Per-product ROI has not been considered – product volume and price averages will need to be used
- All percentages are calculated against total product sales (e.g. 1% waste reduction means 1% of total product sourced is no longer wasted)



Caveats

- This model should be taken as a guide only
- Each organizations will have different types of data readily available – you may find it easier to incorporate the identified costs and benefits into your own ROI assessment - we have incorporated a “ROI Factors” inventory for this reason, along with sample calculations
- This model assumes the candidate organization has limited digital record keeping today – benefits identified may be less additive if the organization already has an Enterprise Resource Planning (ERP) system in place

Thank you

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