WHITE PAPER

The Hidden Cost of Returnable Asset Shrinkage

Why supply chain and operations managers can no longer afford to manage trolleys, roll cages, totes, pallets, bins and kegs without RFID.

Executive Summary

Ask most supply chain managers what their returnable asset loss rate is and you will get one of two answers. Either they will quote a number that feels too low, or they will admit they genuinely do not know.

Neither is a good position to be in when you are responsible for a fleet of several thousand roll cages, totes, or pallets moving across a network of sites, customers, and third-party partners.

Key Finding

Most organisations only count what they can directly measure: the replacement cost of assets they know are gone. Once you add over-procurement, manual admin, dispute resolution, and operational disruption, the real cost is typically three to five times higher.

This paper lays out what returnable asset shrinkage actually costs, not just the replacement price but the full picture, and why RFID is now the most practical way to get it under control.

1. The Scale of the Problem

Nobody sets out to lose roll cages. But across most Australian supply chains, a steady attrition of returnable assets is simply accepted as part of doing business. It gets budgeted for, written off, and replaced. The problem is rarely solved, because the true cost of solving it has never been properly calculated.

What Are Returnable Assets?

Returnable assets are any item designed to circulate through your supply chain and come back for reuse. The specific type varies by industry, but the management challenge is consistent across all of them:

- Trolleys and roll cages (retail distribution, grocery, postal services)
- Totes, crates, and bins (food manufacturing, pharmaceuticals, e-commerce)
- Pallets, both pooled and owned (logistics, FMCG, construction)
- Kegs and gas cylinders (beverage, industrial gases)
- Stillages and dunnage (automotive, heavy manufacturing)
- Garment rail units and hampers (fashion and apparel logistics)

Each of these assets is cheap enough that losing one feels trivial. The problem is you never lose one. A grocery DC running 4,000 roll cages at $400 each has $1.6 million in fleet value on the move at any given time. A five percent annual loss rate is $80,000 in direct write-offs before anyone has accounted for what it actually costs to deal with the shortfall.

How Big Is the Loss?

5-15%	$400+	3-5x
Typical annual asset loss rate without tracking systems	Typical roll cage replacement cost (AUD, varies by spec)	True cost multiplier versus purchase price alone

The loss rates we see across clients using manual or spreadsheet-based tracking typically sit between five and fifteen percent annually, a range consistent with figures cited by GS1 and supply chain industry bodies across comparable markets. For a fleet of 5,000 roll cages at $400 each (costs vary by specification and supplier), ten percent lost is $200,000 in direct replacement costs. Once you factor in everything else, the real number is usually three to five times that figure.

The other thing we consistently see is that assets are rarely evenly distributed when they go missing. They pile up at one customer site or cold store while shortages emerge somewhere else entirely. The operational scramble to compensate quietly generates its own layer of cost.

2. The Hidden Costs That Rarely Appear on a P&L

Replacement cost is the number that gets reported. It is also the smallest part of the problem. None of the categories below typically make it onto a formal P&L. Together they add up to far more than the sticker price of the assets themselves.

Operational Disruption

When assets are not where they need to be, operations slow down or stop. Pick delays, cancelled runs, halted production lines. None of this appears on an asset loss report but all of it costs real money.

Emergency and Over-Procurement

When cages or totes seem short, the default response is to buy more. Most of the time those assets are not gone, they are just sitting untracked at a customer site. The replacement stock then creates its own storage and cleaning overhead.

Dispute Resolution

Who had it last? When was it returned? Without a scan record, these questions take days to resolve. The write-off that follows to keep a customer relationship intact rarely gets attributed to asset management.

Compliance and Audit Exposure

In food, pharma, and resources, provenance and inspection records are not optional. One compliance incident costs more than years of tracking infrastructure.

Manual Counting and Administration

A DC doing weekly physical counts can burn through hundreds of hours a year on a task a fixed RFID reader handles in real time without anyone involved.

Carbon and Sustainability Exposure

Every asset replaced unnecessarily has an embodied carbon cost. Under the Australian Sustainability Reporting Standards (ASRS) and AASB S2, organisations are increasingly required to account for their environmental impact. Manufacturing replacement stock for assets that were not actually lost creates measurable Scope 3 emissions that now appear in mandatory sustainability disclosures.

The Fully-Loaded Cost Model

When we work through the numbers with clients, the fully-loaded cost of a lost asset consistently lands at three to five times the purchase price. The multiplier builds from five components: replacement procurement (1.0x), emergency or expedited sourcing premium (0.5x), operational disruption and downtime (0.5-1.0x), dispute resolution administration (0.5x), and manual counting overhead (0.5x). A $400 roll cage is typically a $1,200 to $2,000 problem once the full picture is counted.

3. Why Traditional Approaches Are Failing

There is no shortage of ways organisations try to manage returnable assets. The honest assessment is that most of them work reasonably well when networks are small and simple, and start failing visibly as complexity grows.

Spreadsheets and Manual Registers

Spreadsheets are the most common approach and the easiest to start with. The problem is they are only as accurate as the last person who updated them, which in a busy warehouse is rarely the priority it needs to be. Across multiple sites and trading partners the data becomes almost entirely fictional.

Barcode Scanning

Barcodes create a digital record, which is an improvement. The catch is that someone has to physically scan each asset individually. At a busy dock door with a truck to turn around, that does not happen consistently. Scan compliance rates in barcode systems are often poor enough that the data becomes unreliable.

Periodic Audits

A physical audit tells you where things were on the day you counted. By the time an audit surfaces a large deposit of your assets at a third-party site, months have passed and recovery becomes a commercial negotiation rather than a straightforward retrieval.

Pooling and Leasing

Pooling transfers some of the headache to a third party, but not the operational consequences of shortfalls. You still need to know what you have on hand, and if the pool provider is invoicing you for assets in your custody, you need the data to check that invoice.

4. The RFID Difference

RFID readers identify tagged assets automatically as they move through a space. No line of sight needed, no operator involvement, no deliberate scan. A fixed reader at a dock door will count every tagged cage on a truck as it passes through, in the time it takes to open the door.

Each asset gets a passive UHF RFID tag, applied either at manufacture or during a tagging project at your site. Those tags are read automatically whenever the asset moves through a portal. Everything is timestamped and attributed to a location, vehicle, or shipment record. The platform gives you a live view of where your fleet is, how it is moving, and where it is sitting idle.

99.9%	<2 sec	10-18mo
Read accuracy with fixed RFID portals (optimal conditions)	Time to count a full pallet at a read point (site dependent)	Typical payback period for returnable asset RFID

Fixed Readers: Automated Visibility at Every Transition Point

Dock doors are the most common starting point. A portal reader at each door captures every asset moving in and out without anyone needing to do anything differently. Site gates, stockroom thresholds, and transfer zones all work the same way.

For production and fill line environments, fixed readers at the line entry and exit count and reconcile assets consumed per run. Beverage fillers, food manufacturers, and industrial gas operations use this to spot discrepancies immediately rather than finding out at month-end stocktake.

Handheld Readers: Targeted Scanning for Route and Customer Delivery

Handheld readers give your team a fast way to scan assets against a specific customer or delivery run before they leave the site. A driver or pick operator scans the load in seconds and the system records exactly which assets went out, to which customer, on which vehicle.

For route-based operations like grocery delivery, keg runs, gas cylinder distribution, and postal trolley allocation, the destination matters as much as the count. Handheld scanning at dispatch, backed by a fixed reader at the dock door, gives you the full chain of custody without slowing anyone down.

What Changes Day to Day

The most immediate change is that you stop guessing. Asset location is visible across all sites and partners in real time. Disputes get resolved with a scan record rather than a phone call. Fleet size decisions get made on actual utilisation data rather than worst-case assumptions. Manual stock counts at monitored locations drop dramatically or disappear entirely.

A Note on Implementation

For a single site starting with dock door portals, a few weeks from sign-off to live is realistic. Ramp handles site assessment, tag selection, reader installation, platform setup, and training as a managed process. Integration with existing ERP and WMS systems is scoped upfront to ensure seamless data flow. We start every engagement with an RFID Readiness Assessment, which gives you a clear picture of the right entry point, the investment required, and what you can expect to recover.

5. Building the Business Case

Getting internal sign-off on a tracking investment usually comes down to two questions: what does it cost and how quickly does it pay back. The five steps below give you a framework to answer both with your own numbers.

Step 1: Quantify Your Loss Rate

Run a physical count and compare it against your registered fleet size. The gap is your minimum unaccounted asset number. Multiply by your replacement cost per unit for your direct loss baseline. Most operations find this number is higher than expected even before any other costs are considered.

Step 2: Apply the Multiplier

Apply a 3x multiplier as a conservative estimate of the fully-loaded cost, accounting for the categories in Section 2. If your operation has high dispute frequency or significant manual counting overhead, 4x to 5x is more realistic.

Step 3: Estimate Labour Savings

Add up the hours spent on manual counts, chasing disputed assets, and managing emergency procurement each month. Apply a blended labour rate. This number is almost always larger than people expect when they sit down and actually calculate it.

Step 4: Model the Investment

Ramp provides budgetary pricing at the readiness assessment stage, so you can run a preliminary ROI calculation before any capital commitment is made. Hardware, installation, tagging, and first-year platform costs are all scoped upfront with no surprises.

Step 5: Calculate Payback

Payback typically falls between ten and eighteen months. Operations with loss rates above ten percent often see it within the first year. From year two onwards the ongoing cost of the platform is a fraction of the annual saving.

Case Study Illustration

Based on a composite of client outcomes across multiple Australian food and beverage operations. A manufacturer with approximately 8,000 reusable totes identified a 12% annual loss rate through a baseline physical count. At $95 per unit that was $91,200 in direct replacement costs, or roughly $273,600 fully loaded. After RFID portals went live across four distribution sites, loss rate dropped below 2% within six months. Total first-year investment including hardware, tagging, and platform: $148,000. Net saving in year one: $204,000. Every year after that is clear margin.

6. Next Steps

If any of this matches what you are seeing in your operation, the simplest next step is an RFID Readiness Assessment. It is a short, structured process, usually completed remotely or with a single site visit, that gives you:

- **An honest assessment:** of your current returnable asset management approach
- **A clear view:** of where RFID would deliver the highest value in your specific operation
- **A preliminary ROI model:** built around your fleet size and loss rate
- **A costed proposal:** with phasing options that suit your budget cycle

There is no obligation to proceed. The assessment is designed to give you enough information to make a confident decision either way.

Request an RFID Readiness Assessment

Contact Ramp RFID Solutions to discuss your returnable asset challenges.

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About Ramp RFID Solutions

Ramp RFID Solutions is an Australian specialist in RFID tracking and inventory management. We work with operations teams across retail, logistics, food manufacturing, healthcare, and resources to design and deliver tracking systems that give real-time visibility over assets, inventory, and people.

Our clients range from single-site businesses running their first RFID pilot to large national operators with multi-site deployments. We handle everything from site assessment and hardware selection through to installation, platform configuration, and ongoing support. The Ramp360 Partner Program extends our reach across Australia through a network of qualified implementation partners.

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