



Effects of Serialization on ROI

Increasing your ROI and increasing your profit go hand in hand. So, naturally, you want to do everything in your power to keep your ROI increasing—**serialization is the answer.**

In this article, we'll explain the uses of serialization and detail the many benefits it brings.

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How does Serialization Impact ROI?

ROI is standard in business. It evaluates your gains from investment relative to the original cost of the investment.

But how do you define “gain?” In the case of serialization, much of that gain comes from minimizing losses.

Too many businesses suffer losses from threats like theft and counterfeiting. Avoiding those losses would be a financial gain to any business.

Gains can also come from repeat business. Earning customers’ confidence and trust increases customer satisfaction, thus ensuring their loyalty to the company.

Serialization can do both.

To break it down:

$$\text{ROI} = \frac{\text{gain from investment}}{\text{investment cost}} = \frac{\text{customer satisfaction} + \text{reduction in losses}}{\text{investment cost}}$$



Annual Losses to Manufacturing Companies

In order to determine how you can increase your ROI, it is important to understand where some of your most significant losses may be so that they can be minimized.

Counterfeiting

The US loses [\\$29 - \\$41 billion](#) on counterfeit goods a year according to the Commission on Theft of American Intellectual Property.

The global pharma industry alone loses [\\$75 million to counterfeiting annually](#).

Recalls

The food industry loses [\\$10 million to recalls](#) as a result of direct costs per year. However, when including indirect costs, the total is probably closer to \$100 million.

The pharma industry loses [\\$228,000 in worker hours](#) alone on recalls annually.

Cargo Theft

[In a 2016 study](#), there were 221 incidents of cargo theft from January 1st to March 31st. The average loss due to cargo theft for a company per incident is \$112,467.

Food and drink account for [20% of cargo theft incidents](#). Clothing and shoes account for [10%](#).

Do the math. You won't like it.

Drug Diversion (Pharma only)

Drug diversion is when legally prescribed controlled substances are transferred from the individual they are prescribed for to another individual for illicit use.

[Quantifiable losses](#) include loss of pills and monetary worth of lost controlled substances.

45 incidents of drug diversion account for \$302 million lost to organizations and payers.

Unquantifiable losses of drug diversion come from reputational damage and loss of customers.

[In 2018](#), 324 incidents of drug diversion were reported.

Drug Shortages (Pharma only)

[According to a 2013 report](#), the annual cost of drug shortages in US hospital is \$416 million.

“The US loses \$29 - \$41 billion on counterfeit goods a year according to the Commission on Theft of American Intellectual Property. The global pharma industry alone loses \$75 million to counterfeiting annually.”



Enter: Serialization

First, some terminology so we're all on the same page. For our purposes, *serialization* refers to when an object is converted to a stream of bytes which stores data such as product version or assembly name.

The stream is used to store the object or transmit it to memory, database or a file.

Simply put, serialization is the application of serial numbers on products that makes it easier to store, access, and transfer product information.



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How Serialization Affects ROI

Let's look at some cause-and-effect scenarios for the uses and benefits of product serialization. Each of these effects would have a tremendous positive effect on a company's overall ROI.

Cause: Serialization...	Effect:
Increases quality assurance	Assures customers that products are authentic. Allows customer access to additional product information or promotion.
Increases efficiency and accuracy in processes with trading partners (returns, recalls, chargebacks)	Less time dealing with returns, recalls, and chargebacks and less time spent correcting errors. Time is money.
Minimizes product recalls	Fewer monetary losses from recalls. Increase in customer confidence in the company, thereby ensuring their loyalty.
Allows for easy identification of items affected by problems	Minimizes time spent on problems such as recalls.
Provides near real time inventory event data	Shortens replenishment times and helps to avoid stockouts. Minimizes the cost of shortages and creates a better relationship between company and customer.
Allows product location to be monitored for shipment time and arrival	Easy to determine if the products make it to their destination, thus minimizing risk of theft.
Reduces filing errors	Less time spent correcting errors.
Reduces counterfeiting	Limits monetary loss due to counterfeiting.



What You Can Do

Serialization alone will not do all the work for you. In order to ensure that you maximize the positive effects of serialization on ROI, there are a few things you need to do too:

1. Automatic serial number reading in your supply chain

Without automation, serialization will likely have a negative effect on productivity. With automation, accuracy and efficiency will be ensured so serialization will have a positive effect on ROI.

2. AIDC (Automatic Identification and Data Capture)

You need to have an efficient data exchange to communicate numbers between organizations to reap the efficiency benefits of serialization.

One example of this data exchange is electronic data interchange which communicates information that would normally be communicated by paper such as purchase orders.

Who Should Use Serialization?

Any manufacturing company or company that deals in physical products should leverage serialization.

That includes brick-and-mortar retailers and online sellers. The most common verticals we see utilizing serialization to improve ROI are: clothing, pharmaceuticals, food, cosmetics, and luxury items.

But there are limits.

The Exception

If your business requires that someone be able to read any serialization number over the phone you are unlikely to see the positive effects of serialization on ROI.

These positive effects require accuracy to be maintained. Since serialization numbers are often very long and complex this accuracy can only be achieved electronically.



Conclusion

There are two blanket benefits to serialization that can increase your ROI. We built a business on delivering these benefits to our clients.

1. Serialization helps minimize cases of counterfeiting and cargo theft. By limiting these cases, serialization allows your company to save a significant sum that would otherwise be lost.
2. By minimizing errors and recalls and increasing accuracy and efficiency, serialization boosts customer confidence and helps to ensure their loyalty. This not only keeps their money rolling in, but increases the likelihood that they will recommend you to other potential customers.

