



**Turbine Media**

Diminished Manufacturing Sources White Paper Series: WP1

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## **Refurbish or Refresh?**

Making the case for Nemonix Technology Refresh™

A description of why buyers of legacy computer hardware should purchase Nemonix Technology Refresh™ solutions in lieu of traditional “refurbished” systems and components.

## WHAT IS A REFURBISHED PRODUCT?

In the United States, the refurbished market was created in response to state statutes that sought to protect against merchant statements and actions that might deceive, confuse, or otherwise defraud consumers. Merchants are barred from selling any product as “new,” if it had previously been repaired, remanufactured, or owned. However, the law is silent on a specific replacement label.

Original equipment manufacturers (OEM) like Apple, Dell, and HP needed a marketing label to recoup lost revenue due to returned or defective product merchandise. The term “refurbished” was popularized in the consumer electronics industry because it lacked the negative connotations implied by labels such as “used” or “pre-owned.” Refurbished products, especially brand-name consumer electronics, are generally seen as good quality, “like new” alternatives to purchasing new.

In the technology industry, “refurbished” is generally understood to mean the following:

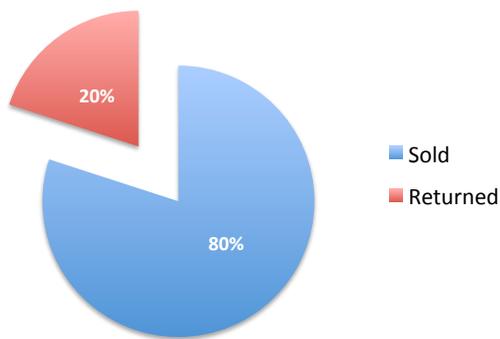
- The product was defective but is now repaired.
- The product only needed an exterior touch-up.
- The product carries a short warranty of between 30-60 days (unlike most used products, which are sold “as is” with no warranty).
- The product line is relatively new, and is still in production.
- The product is sold at a substantial discount in comparison to new products.



Refurbished products have become so popular in the consumer electronics industry that some consumers actually prefer them to brand new products. Why pay a premium for new when you can get the same model—albeit repaired or slightly used—at a significant discount.

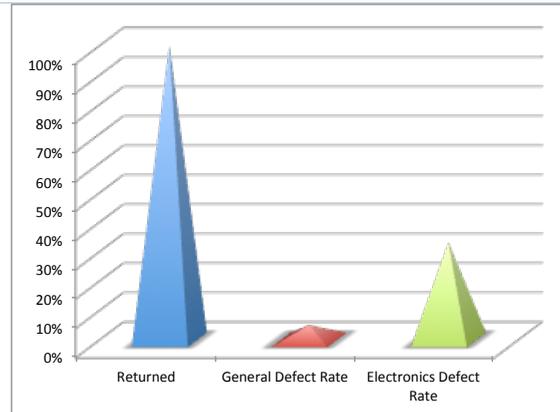
## WHEN TO BUY REFURBISHED

According to Consumer Reports, 1 in 5 new products are returned by first-time buyers. Of these returned products, a mere 5% are actually defective. This means that 20% of all products manufactured will be resold as refurbished, and that consumers can expect refurbished products to be



relatively defect-free.

However, there is a note of caution in the Consumer Reports statistics. The number of defective returns for the electronics market jumps dramatically to 33%. *That is over six times higher than the general defect rate.* This reflects the relative complexity of electronics products, in comparison to other manufactured goods. Computer systems, for example, consist of multiple sub-systems dealing with video display, digital storage, input/output, cooling, power consumption, etc.



In spite of the dramatic difference between the general defect rate and the electronics defect rate, the problem rate is generally low because most refurbished products in the consumer electronics business belong to product lines that are relatively new.

### The Bottom Line

Purchasing refurbished is reasonable if you follow this rule of thumb:

- The product is still in production.
- Critical parts are in production.
- The product is backed up by a manufacturer's warranty.

*When purchasing refurbished, you have one overriding consideration: the underlying product line is in fact new.*



## THE RISKS OF REFURBISHING LEGACY PRODUCTS

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As discussed earlier, the refurbished label is a tool to handle retail product returns for *new* product lines. A refurbished program built around new products works well for all parties. Merchants like refurbished because they can recoup their costs without losing customer loyalty. Barring a severe design flaw, chances are good that if a product was returned for one or two defects, that the remaining product components and sub-systems will function without malfunction, at least within the typical 30-60 day warranty period—*IF the product is new*. Customers like refurbished because they can pay significantly less for an item that generally works as advertised.

However, what if the product line is NOT new? Do merchants still apply the refurbished label to products that are no longer in production? Unsurprisingly, yes, merchants still apply the refurbished label to old products.

However beautiful the strategy, you should occasionally look at the results.

- Sir Winston Churchill

Their reasoning is simple: if the strategy works so successfully for new consumer electronics products, it should work equally well for legacy products.

The problem is, the fundamental assumptions that support refurbished products in the new consumer electronics market do not hold true in the legacy electronics market.

### Broken Assumptions

**NOT NEW.** First, unlike the retail product market, a “refurbished” product in the legacy or diminished manufacturing sources market is based on a product line that is not new. In fact, the product line is so old, the original manufacturer has long terminated support for it. In some cases, the original manufacturer may have closed its doors, or moved on to entirely different pursuits.

The old merchant strategy of “touch up and go” might work for new product lines, but will not work for products this old and complex.



If a new product is returned due to a defect, you can reasonably expect that the remaining parts of the product will work without further problems. However, if the product is beyond its End of Life date, and a part breaks down, the opposite holds true for the remaining components. You CAN expect a high likelihood of failure from your remaining parts and sub-systems.

These legacy machines, especially computer servers, have too many mechanical or electrolytic parts and sub-systems that will absolutely wear down or run out with time—no matter how well manufactured they were. More importantly, as these critical parts fail, they usually cause collateral damage to non-mechanical parts or systems. You can't expect to fix a few immediate problems, slap a "refurbished" label on it, and expect the machine to work "like new."

**NEW PARTS ARE NOT AVAILABLE.**

Second, many legacy servers do not have new replacement parts in production. To repair the machines, many vendors will simply replace old, defective parts with equally old, used parts. It's like jumping from

one boiling pot into another boiling pot! You cannot rely on the efficacy of refurbished legacy products, if you cannot replace broken parts with new or reliable parts.

It's significant to note that a "bumper-to-bumper" automobile warranty doesn't include the bumpers.

- Andrew Green

**No CONFIDENCE = No TRUST.** Finally, most refurbished products in the legacy market carry warranties of between 30 to 60 days, with no possibility of extension.

This begs the question:

*Is the merchant not confident that the product will work beyond the short warranty period?*

If the merchant is not confident, why should the buyer trust the merchant's implied promise that the product will work beyond the warranty period?

It seems as though the warranty is provided merely to engender enough buyer confidence to make the sale, rather than serve any real protective service for the buyer. A refurbished warranty is like an automobile "bumper to bumper" warranty—it implies wide coverage, but how effective can it really be if it doesn't even cover its namesake: the bumpers!

## NEMONIX TECHNOLOGY REFRESH™ SOLUTION

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Fortunately, there is an alternative to buying old refurbished products. Nemonix Engineering, Inc., a 30+ year veteran of the big iron server era, developed a solution that is specifically designed to address the requirements of legacy technology products. Nemonix offers the service as an upgrade to existing, working systems. In fact, they will not perform a refresh service on a machine that is not in working order. The customer needs to repair the machine (Nemonix also provides repair services), before performing a system refresh.

Unlike refurbished, which is a repair and resell approach, Nemonix Technology Refresh™ is an upgrade service that directly addresses the core issues of End of Life machines. The refresh goal is simple: replace any component that is at risk of causing system failure within 10 years of the refresh date, with new, more efficient parts.

### **What is in a Nemonix Refresh?**

Nemonix uses a 7-step process:

1. Inspect and inventory the legacy machine's critical hardware parts;
2. Diagnose and verify that the machine, in its pre-refresh state, is working properly;
3. Disassemble the machine. Remove and replace all parts that are at high risk of failure, with new, military-grade parts;
4. Reassemble and test for at least 48 hours to ensure good working condition;
5. Attach all necessary labelling, for warranty and future upgrade purposes;
6. Quality check the machine based on strict internal engineering certification guidelines;
7. Package and return the refreshed machine to the customer with a standard warranty of 1 year, extendable to 10 years total.

In step 2 and 3 above, Nemonix diagnoses the machine to determine its overall health—including sub-systems such as fans and power supplies. Nemonix will then remove all critical mechanical and electrolytic components (such capacitors and batteries) and replaces them with new, military-grade parts. The machine is then rigorously tested to



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ensure that it will function well for the next 10 years.

The resulting machine is greener. It uses power more efficiently, requiring less energy to run and cool it. Furthermore, ALL critical failure points have been dealt with—effectively transforming an End of Life machine into a “like-new” server that will provide up to 10 more productive years.

A customer can either send its legacy machine to Nemonix for refresh, or have Nemonix purchase and refresh a machine to the customer’s specifications. If the customer would rather not ship customer’s machine to Nemonix, due to size or other consideration, Nemonix also offers a Nemonix Technology Refresh™ Kit. The kit is customer-installable, and contains all the critical replacement parts for the customer’s site-bound machine.

### REFURBISH VS REFRESH AT A GLANCE

As demonstrated in the table below, there is a substantial gap between the

typical refurbish and a Nemonix Technology Refresh™.

	REFURBISHED	NEMONIX REFRESHED
<b>Approach</b>	Only repair immediate or visible problems	Upgrade ALL critical failure components
<b>Replacement Parts</b>	Used parts	New, military-grade parts
<b>Expected Life Before Failure</b>	60 days	10 years
<b>Standard Warranty</b>	30 days	1 year
<b>Warranty Extensions</b>	None	+1 to 9 years
<b>Multi-Decade Extensions</b>	None	30 years with planned refresh every 10 years
<b>Technical Support</b>	None	Up to 24 x 7 support



## CONCLUSION

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There is an irony in using the “refurbished” label for legacy machines. Originally, the refurbished label was used to differentiate new products from repaired product returns—to protect the consumer from the high risks associated with repaired or used products. Given the significantly higher risks associated with refurbished legacy products versus refurbished “new” products, reasonable consumers would be justified in expecting regulation banning merchants from labelling old products with the refurbished label.

That said, the real comparison arises when comparing refreshed legacy machines against the Nemonix Technology Refresh™. As demonstrated in the previous table, the gap between the results of the two services is wide and substantial.

Refurbishing a legacy machine is akin to putting a band-aid on a cancer patient. In comparison, a technology refresh is a complete, across-the-board replacement of heart, lung, liver, and other important organs, with brand new reject-free organs. Buying a refreshed product is by far the better choice.

### More About Nemonix

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### About Turbine Media

Turbine Media is a 10-year old technology company with three main offerings:

- IT Marketing Research & Content Creation
- Marketing Collateral Creation
- Web Application Development & Design

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