

A Time For Change - The Not So Hidden Truth

By: Kristal Snider

In today's market, an individual can visit one of the numerous online trading platforms, conduct a part search for a part they are in need of and, more often than not, obtain immediate offers and/or availabilities. We have been told by Members that if the part they need is not listed and/or available in the part search database the first time they conduct a search, it often times "magically appears" in the days that follow.

In order for one Member to substantiate his suspicions that unscrupulous brokers and/or counterfeiters carefully monitor these trading platforms, he submitted a requirement for his 10-digit telephone number. Soon after doing so, a part search revealed 16 Chinese distributors offering his phone number as "available". Sadly, so did 4 distributors in the US, one in Japan and another in Canada.

While you may have just enjoyed a laugh due to the ridiculousness of the above noted situation, we do hope you recognize that we are dealing with a serious problem that only seems to escalate. For those of you who have been involved in the electronics supply chain for more than the last seven years, you likely recognize we are not trading in a realistic market. Gone, it seems, are the days when a customer must be told the part they need is nowhere to be found. Today nearly every part known to man (and even ones that don't exist, as our report already revealed) seems to be readily available in the independent supply channel, often times originating in China.

No one we spoke to while preparing this report cared to debate the fact that a large portion of the parts sold in China are used or substandard on some level. What we were told is that the percentage of parts that pass testing or visual inspection generates adequate revenue to justify the risks some distributors take.

ERAI asked numerous people why they continue to source in this high risk market if they know much of what is sold there is inferior in quality or is counterfeit. The most common answer was:

We know a large percentage of the parts coming from the open market in China are substandard or counterfeit, but we also know that because manufacturing continues to move to China, so will the excess inventory. We feel we have no choice but to sort through the substandard and counterfeit parts to find the good ones.

This popular response being given by those distributors who believe they must sift through faulty material in order to locate legitimate OEM excess inventory may be a farther reaching argument than you might think and is the basis of this report.

We have reason to believe only a small portion of OEM excess is making its way from Shenzhen distributors to your facility. ERAI has spent the last several months researching exactly what is being traded by the countless number of brokers popping up in China; today we are going to expose what we believe is a not so hidden truth.

“...far too much of the nation’s electronic garbage...gets shipped overseas to poor countries, where it pollutes the environment and exposes workers to dangerous chemicals.

The U.S. Environmental Protection Agency says American consumers generated nearly 2 million tons of electronic waste in 2005...estimating that 133,000 PCs are discarded by U.S. homes and businesses each day. Only 10 to 15 percent of electronics are currently recycled...up to 80 percent is exported overseas to dismantling shops where poor workers are exposed to hazardous fumes and chemicals while trying to extract valuable metals and components.”

Often times, the waste that is sent to these regions for processing is done so illegally by transporting the goods through alternate ports, disguised as charitable donations or is done so despite international laws and with no controls whatsoever. Fred De Sam Lazaro of Twin Cities Public Television was quoted on February 19, 2007 in an article titled “Electronic Waste Adds to Pollution in India”³ :

“International treaties prohibit the export of obsolete computer hardware from developed to developing countries. But there are loop holes. The stuff is shipped to intermediate points, where shipping labels are changed to hide the real point of origin. Other shipments are disguised as charitable contributions.”



Source: Silicon Valley Toxics Coalition⁴

The most documented example of e-waste is the story of Guiyu, a city within a region of China known as **Shantou** (also known as Swatow or Suatao).

Guiyu, Shantou, from ERAI's investigations, is a well-known center for e-waste reclamation due to a large and readily-available workforce. According to an article by Zhan Lisheng in the website News Guangdong⁵:

*“Official statistics indicate that over 5,500 households, or over 50,000 people, in the town depend on the e-waste business for a living and over 75 per cent of the town's 300-odd private enterprises are in the business of reclaiming, dismantling or processing e-wastes...**Dismantling and processing e-wastes is easy money....That is why the majority of local people are involved in this business in some way.**”*

The large workforce is able to produce a staggering amount of 'reclaimed' material, **most of which winds up being exported**, according to The Seattle Times⁶:

“Guiyu, a few hours' drive northeast of Hong Kong, is by far China's biggest e-waste scrap heap. The city has 21 villages with 5,500 family workshops handling e-waste. According to the local government Web site, city businesses process 1.5 million tons of e-waste a year, pulling in \$75 million in revenue. As much as 80 percent of it comes from overseas.

City officials are proud of the e-waste industry but sensitive about its reputation as a dirty business that feeds off smuggled waste and abuses workers. Journalists who probe quickly find themselves detained by local thugs or police, and their digital photographs or video footage erased.

‘Up to 80 percent of all obsolete electronics that get collected ends up getting exported’”

In this same article, Zhang Tianzhu, a professor in the school of environmental engineering at Tsinghua University in Beijing, stated that the Chinese government in effect also looks the other way due to tax revenues generated at Guiyu⁷:

“...China's central government wanted environmentally safe procedures, but 'existing e-waste businesses are so large that they are major sources of revenue for local residents and the local government.' Taxes on e-waste businesses provide Guiyu with 90% of its commercial and industrial taxes, making officials reluctant to regulate them at all.”

Larger developed countries in the near future will no longer be the sole source of electronic waste. According to an article titled “Chinese City is World's Digital Scrap Heap”⁸:

“Even if e-waste imports dried up, Guiyu's recycling wouldn't go out of business. China is generating more of its own e-waste. Last year, vendors sold 20 million computers in China. Within two years, the country will be buying 30 million computers a year, according to a research firm that's associated with the Ministry of Information Industry.”

High profitability margins are the driving factor behind these 'recycling' economies, while disregarding workers' health and environmental damage. According to Fred De Sam Lazaro of Twin Cities Public Television⁹:

“Computers have become the lifeblood of India’s economy, even defective computers... Recycling these metals has spawned a fast-growing and alarming new industry.”

Ravi Agarwal from Toxics Link continues¹⁰:

“It can cost \$20 to \$30 to dispose of one computer, just to throw it away in a proper way. Now, instead of that, if you then export the waste to a poor, developing country in Africa, China or India, you can actually make money off that waste.

So a trader will, instead of paying \$20 to the local ecology to recycle the waste, can actually sell the waste...”

The fact that it is estimated nearly 82% of the children either living or working in the China scrap yards¹¹ and 53% of children under age 12 in India's reclamation cities¹² are suffering from lead-poisoning tells us that all that the financial rewards that are reaped from trading in e-waste seemingly outweighs human life. If the children of these nations are not an immediate priority why should we think they have any regard for the long-term impact these substandard parts are going to play on the global economy?

Is anyone concerned about the ESD damage that must be taking place during the improper handling and storing of these components? In Guiyu¹³:

“Computer carcasses line the streets, awaiting dismemberment. Circuit boards and hard drives lie in huge mounds.”



© Basel Action Network 2006. One of thousands of Nigerians involved in repairing and reselling imported used electronic equipment¹⁴.

Are these parts that pass testing today a ticking time-bomb?

We cannot fail to consider the potential harm sensitive electronic components might sustain during the dismantling process. The choices we make today will impact the industry tomorrow.

The Basel Action Network (BAN) & Silicon Valley Toxics Coalition (SVTC) have documented much of the e-waste process in Guiyu. The following is an excerpt from their report entitled [“EXPORTING HARM – The High-Tech Trashing of Asia”](#)¹⁵.

“Most of the activity in Guiyu involves physical dismantling by hammer, chisel, screw driver and bare hand. The most high tech piece of dismantling equipment witnessed was an electric drill. The immediate objective of most operations involve dismantling—the rapid separation of primary materials...such as...”

Circuit Boards: *These come from many applications including computers, phones, disc drives, printers, monitors, etc. These boards were subject to further separation in other facilities as follows:*

- Valuable reusable processors and chips: for resale
- Other chips and connectors containing gold: for acid processing
- Solder: (lead/tin base) **for resale**

Circuit Board Recycling

It is likely that the most environmentally destructive recycling overall involves the recovery of the various components and materials found on electronic circuit boards.

While there are differing approaches practiced around Guiyu, the general approach to recycling a circuit board involves first a de-soldering process. Many hundreds of workers, usually women and girls, are active each day in this endeavor. They place the circuit boards on shallow wok-like grills that are heated underneath by a can filled with ignited coal. In the wok-grill is a pool of molten lead-tin solder. The circuit boards are placed in the pooled solder and heated until the chips are removable. These are then plucked out with pliers and placed quickly in buckets. Solder is also collected by slapping the boards hard against something such as a rock...The loosened chips are then sorted between those valuable for re-sale and those to be sent to the acid chemical strippers for gold recovery. Often the pins on chips will be straightened and later dipped in fresh solder to make them look new for use..."



© Basel Action Network 2006.

Laborer de-soldering circuit boards over a coal-fired grill. Rock in the box is where boards are hit to remove solder. Pliers are used to pluck off chips which go into various buckets. The boards are then tossed into a pile for open burning.



© Basel Action Network 2006.

Dismantler cracking a monitor to remove the copper yoke. The rest of the CRT is dumped.

In order to truly comprehend the enormity of this problem ERAI sent its own investigators to Shantou.

SHANTOU – GUIYU BEHIND CLOSED DOORS

It is difficult to gain access to the areas in Shantou where e-waste recycling is taking place. You need to know someone to get into this part of the city. You can find almost any component you need in the Guiyu IC market: pulled, refurbish, substandard, remarked, etc. Our investigator stated: **“if they don’t have it, they can make it for you in a few hours”**. We were told that once inside, a deliberate and well-organized system is in place. As circuit boards are brought in, parts are cut from the board. The parts are broken down by the package type (DIP, BGA, etc.) and the number of leads. Depending on these factors, they are taken to another location not far away, where they are separated by manufacturer. From there, if an order is placed for a part number they have, they may sell the goods as is (which may mean in ‘rough’ physical condition) or they might make them ‘look new’ knowing this will fetch a higher price. This is why Buyers sometimes receive remarked (blacktopped) parts that are actually the correct part number that was ordered. This remarking process can be revealed during a marking permanency test or other product authenticity verification methods. We were told there are people on the street reportedly holding or posting signs advertising the manufacturers they specialize in; meaning, they have mastered that particular component manufacturer’s trademarked logo and are considered

proficient at remarking that brand. Anything a broker could want or need is reportedly available. We confirmed our suspicions through our sources. We could locate very few people in this Shantou market who actually sell outside of China. On the contrary, it appears most sell to the brokers in Shenzhen who in turn sell to the rest of the world corrupting the supply chain!

ERAI asked our investigators to prepare a written account of their visit detailing what they witnessed. Here is an excerpt from the report they submitted to ERAI:

“In Shantou, the electronic garbage industry has its own product line. Different factories are responsible for different things. Some factories pull out the components from the devices. Some factories do the re-mark work and a couple of factories are especially for re-tinning. Several years ago, they only sold these parts to the China Domestic Secondary Market. Let me explain the secondary market in China. This means the market of devices which do not need to be very good quality parts. For instance, the electronic toys that are made in China are very cheap. Why is the cost of the electronic toys so low? That's because the component in the toys almost always come from Shantou. Because the toys do not need the parts in a very good condition, it will be okay if they can ensure the parts can work maybe 3 months or maybe a half year. And some other things just like Christmas decorations, New Year decorations, etc, are also the same. In China we call this kind of market ‘secondary market’”.

In essence what we learned is that parts, once used seemingly without risk in low quality items such as toys, are now being sold to Independent Distributors around the world and are presumably being used in manufacturing applications of a more sophisticated nature than that of a child's plaything or a holiday trinket. But it is not only reclaimed product that is surfacing in this market according to our investigators:

*“Besides the e-waste that is shipped to ShanTou, there are also many substandard parts there. Let me explain: There are parts that are new in the original package. I saw many of these ‘new looking’ substandard parts in the Guiyu IC market. **I was told these ICs are failed parts from the manufacturer's production lines. These parts are supposed to be destroyed but somehow they are collected secretly from overseas (Malaysia, Singapore, Taiwan, Korea, etc.) then they are shipped to ShanTou. They all will pass a visual inspection and sometimes they will work fine but there are many applications in these parts. The original component manufacturer will fail the parts if all of the applications don't work. So if a customer only uses one or two of the applications in the part, they might work, but if the customer's product needs those applications, they won't work. This is why sometimes a broker will claim they sold the parts to other distributors without a problem. The two customers did not use the parts in the same way.**”*

Interestingly, while researching the Internet in preparation for this report, ERAI reviewed countless articles relative to a variety of observations and/or concerns, all of which are by-products of e-waste, but we could scarcely find mention of the counterfeiting being done in the open for the world to see. We asked our investigators to find out how this network operates so we could better understand when and why Chinese brokers transition from selling used parts to

infringing upon the component manufacturers intellectual property rights, placing Buyers in serious jeopardy.

“Many families over there buy e-waste. I visited a few of their houses. The house has 5 floors; they live on the 4th and 5th floor. The 1st, 2nd and 3rd floor were stored with all types of e-waste. They have original package parts (I am not sure if these were good parts or substandard. They told me they were old parts but I guess they are substandard parts). They have many PCB with IC on it and they cut the most expensive part out of the PCB board, like Altera, Xilinx, PMC, etc. I was told there are over a thousand families that keep this kind of e-waste in their home....

The remark process is very sophisticated over there...

THERE ARE THREE TYPES OF REMARKS:

- 1. Parts are dismantled from e-waste. They refurbish the parts since the date codes are different and too old. They change it to a newer date code. For example, this kind of refurbish parts are 96, 97, 98. They are pretty smart; if this IC were obsolete in 2002, they will remark it 02+. Some of this kind of remarked part might work fine. It is very funny, they told me, that the reason they made the same date code is because the U.S wants them to make it. I told them that this is not true. I don't think any U.S broker wants them to make it. Then they told me, the oversea brokers tell them, their OEM only accept same d/c and 01+, so they make it for them.*
- 2. They change Industrial grade to Military grade. When the Mil grade is not available, sometimes they've found the same part from the e-waste, but it is the Industrial grade. That is when they will remark the letter as example from I to M. I was told many of these parts can pass in the testing lab.*
- 3. I saw many ICs without printing in Guiyu IC market. They have 8 pin DIP up to 68 PLCC. I was told that those ICs cannot identify part number when they dismantle from PCB and that they use this type of IC to make the counterfeits.*

People in Guiyu didn't consider the situations 1 and 2 (remarked parts) as counterfeit because some of these ICs can pass lab testing.

That is why they give a 30-day warranty. If the parts fail, they will do a replacement for you. That explains why sometimes you see some brokers that receive the first batch with parts that are ok, the second and third batches of parts with same date code fail or the failure rate is so high.

There are many different types of refurbishing and remarking factories in Guiyu; some do better work than others. Of course they charge more. The laser remarks are more expensive than regular remarks. Most of ICs in Guiyu don't process any work until they receive an order...

This is why dealing with the China open market is very risky. The open market stock combines about 25% from OEM excess; the rest are substandard, remarked, refurbished and counterfeit. There are many brokers who get involved in the open market, after the stock has changed many hands, so no one is 100% sure which are good parts and which are bad. That is why they create a 30-day warranty rule in this open market.

There are many selling at a counter (booths) in Shenzhen SEG Market. Some brokers collect as many part numbers as they can find and post on the Internet. Some of the brokers (not very many) only post franchise and selective open market stock on the Internet. This explains why some brokers have 15 good comments and 3 bad comments.”

We suspect many of you are not shocked thus far by the findings presented in our report. You likely know exactly what is happening in China which brings us back to the reason for our investigation: Do companies need to sort through counterfeits and e-waste, risking unnecessary financial loss, in order to find the OEM excess hidden within the Chinese supply chain?

CHINA OEM EXCESS

In December 2006, ERAI returned to China, but unlike our first tour of Shenzhen in 2004, this trip was focused solely on determining the origin of the parts being sold in Shenzhen and to find out if OEM excess was being sold through the increasing number of Chinese brokers in this particular market. We were told the vast majority of OEMs in China reportedly do not do business with a company/distributor that does not have a current **Chinese VAT License**.

ERAI personally met with a large OEM located in the center of Shenzhen who has more than 20,000 employees. During our meeting, they confirmed what we had been told; they do not do business with Shenzhen brokers. Is it possible OEM excess might be sold by a Chinese broker who does not have a Chinese VAT? We think it is fair to say anything is possible. What our investigation revealed is that the majority of the product being offered in Shenzhen is more likely to have originated from e-waste than from legitimate OEM surplus. If anyone has information to the contrary, please let us know.

WHAT IS A CHINESE VAT LICENSE?

In a moment, we will explain the various ways you can open a business in China and Hong Kong. We feel this portion of the report would be of greater benefit if we first clarify the significance of a Chinese VAT License. Having a Chinese VAT License can be compared, in a limited aspect, to being ISO Certified in the US. In actuality, such a comparison is an enormous stretch, so bear with me as I attempt to formulate the analogy...

Obtaining ISO Certification is a lengthy and costly process. A great deal of time (sweat equity) and money is typically required. The majority of companies who seek it are doing so either because they have been required to or out of their desire to demonstrate their commitment to the quality of the goods and services they offer. More often than not, Independent Distributors who become ISO Certified want to “stand out” from the crowd and are pursuing more lucrative,

higher-level, business relationships. I believe it is fair to say a certain amount of “credibility” is awarded upon the completion of this process.

Chinese Distributors who obtain a VAT License do so for many of the same reasons. As you will see, they must pay a significant amount of money to obtain the license which is required by law in order to do business with any company involved in the manufacture of commercial or consumer electronic devices or equipment. Certainly a Chinese VAT License cannot be compared to ISO Certification, but it is one of the only professional measures ERAI has found by which to gauge a China business’ wherewithal.

Will Chinese VAT Licensed distributors sell faulty product? They likely will at some point if they source material from the China Open Market. Do ISO Certified companies buy and sell faulty product? They certainly could with the supply-chain being compromised with counterfeit and substandard parts, no one is immune from the problem. With today’s complex global distribution system, an unchecked return or stock rotation to a factory could corrupt an unknowing source of supply. The license (or the system) is only as good as the people operating the business make it. With that said, let’s take a look at what is required in order to operate a business in Hong Kong and in Shenzhen so you can begin making more informed business decisions.

According to our investigators, there are four business licenses frequently obtained by distributors in China.

REQUIREMENTS FOR BUSINESSES TO OPERATE IN CHINA

Hong Kong

- A Hong Kong business license is easy to obtain.
- It costs approximately \$1,000.00 to establish a company.
- When doing business in Hong Kong, there is no VAT.
- A Hong Kong business license does not mean the company can legally operate in China.

China

Hong Kong is to components as Las Vegas is to weddings. If you want something done “quick and easy”, Hong Kong appears to be the answer. China, on the other hand, is a bit more difficult. In this region, typically a distributor will select from one of the below noted three license options:

1.) Small Business License

- *Mainly used by companies for retail business.*
- *Capital investment is small.*
- *No need for VAT.*
- *The business pays a flat 4-5% tax.*
- *Commonly referred to in China as a small family business license.*

- *Because they do not have a VAT License, they cannot do business with companies involved in the commercial or consumer manufacture of electronic devices or equipment.*

2.) *Commercial Business License*

- *General license for various businesses.*
- *Capital investment varies.*
- *No need for VAT.*
- *Typical business with this license would be a service company.*
- *Business required to pay 33% tax on profits.*
- *Because they do not have a VAT License, they cannot do business with companies involved in the commercial or consumer manufacture of electronic devices or equipment except to provide the service they are licensed for such as computer repair, etc.*

3.) *VAT License*

- *Special license needed to do business with companies that are required to participate in the Chinese (VAT) tax system.*
- *Minimum 500,000.00 RMB (\$65,000.00) capital investment.*
- *Must produce at least 1.8 million RMB revenue (\$250,000.00) within one year (This means if the distributor did not show the Chinese IRS they have 1.8 million RMB in business, the China IRS is allegedly not going to issue the VAT License to the company. This implies if a company has VAT License, they should have operated over one year and with a minimum of 1.8 million RMB in business).*
- *The amount of investment capital must be listed on the business license. (This is done so when doing business in China, people can judge the company's financial power by looking at their business license).*
- *This license is required for distributors doing business with any company involved in the manufacture of commercial or consumer electronic devices and equipment.*

Given that ERAI's objective is to find a means by which distributors around the world can source more safely in China, we were concerned when we were advised that even those distributors with a Chinese VAT License, who have access to OEM excess, still found it necessary to source in the Chinese Open Market. What protection does having this license offer to Buyers who choose to purchase from them as opposed to a distributor without the VAT? Here is the answer we received from our investigators:

“Chinese distributors with a VAT License have more experience in the China market and in this industry. They have a financial investment in their business. Since they deal with OEMs, they should have more quality control measures in place during their inspection. Some of them might deal with the China Open Market but they should be more selective with their vendors. They typically know who is good and who is not.

*For those brokers without a VAT, they deal with Franchise stock and deal with China Open Market stock, but mainly they deal with China Open Market stock. It is not fair to say brokers without a VAT **only** deal with e-waste parts because the China Open Market is combined with approximately 25% OEM excess. But most of the parts (75%) are*

substandard and remarked part. I believe distributors that have a Chinese VAT License will try to be more selective...”

If you are like me, you are probably wondering: What about franchise stock? Do these ‘Open-Market’ brokers have access to Franchise Distributors in Asia?

FRANCHISE STOCK

We were told you do **not** need a Chinese VAT License in order to purchase parts from Franchise Distribution. So, it is possible some of the parts in the market come from authorized sources; however, if that is the case, the Supplier should disclose that to you at the time of sale and they should be able to easily provide traceability should the parts fail. What ERAI recommends:

- 1.) Recognize it is a possibility your parts are coming from franchise but never let your guard down. The chances you are receiving franchise product from the vast majority of the brokers in Shenzhen is unlikely. Our findings, thus far, suggest it is only well-established distributors who tap into this source.
- 2.) Know what disty is charging. The value of parts coming out of franchise in Asia might be slightly cheaper but it is doubtful the parts will be available for far below market value.
- 3.) When you received a quote from a China vendor, ask them how long they are willing to warranty the parts. If they offer a 30-day warranty, chances are the parts are really coming from the China Open Market.

THE TYPES OF BROKERS IN CHINA

So who is selling what to whom in China and subsequently elsewhere around the globe? According to our investigators, there are three types of Brokers in China:

- 1. Selling To OEM In China Only: They buy from local franchise and sell to local OEM. They must have Chinese VAT License. Most of them are not members in part search databases.*
- 2. Selling to Overseas and Secondary Market: Most of their parts come from ShanTou. Some people from ShanTou are doing legitimate business, selling to overseas and secondary market, but most of these brokers are not educated and they do not have a Chinese VAT License. Most of the parts they sold were from ShanTou, where all the counterfeit parts come from. Many of the brokers in ShenZhen are selling these parts to overseas on the online trading sites.*
- 3. Buy From Overseas and Selling To Overseas: This type of distributor buys from overseas and sells to local OEMs (local OEMs have high quality standards and will not source parts from Shenzhen brokers) or they buy from local OEM and sell to overseas. These distributors must have a Chinese VAT License.”*

“So far most of the brokers trading online today are the second kind.”

“For those brokers without a VAT License, they buy from franchise and China Open Market. Unlike the U.S. Open Market stock, in the U.S., most of the Open Market parts are from OEM excess. But in China, Open Market Stock is only about 25% from OEM excess and about 75% is from e-waste or substandard parts which includes remarked and counterfeit parts. There is a saying in China now, if you touch the open market, you are always taking some risk. That is why most of the big OEMs will never deal with open market brokers. Some brokers with a VAT License also deal with the open market but since they deal with China OEM, they should have more experience in inspection and quality control.”

THE COMMUNICATION GAP

In order to trade as safely as possible in this foreign marketplace, you need to proficiently and effectively communicate in terms the Chinese Distributor will understand. You have seen references in today’s report to two markets: the China Open Market and the China Secondary Market. Allow our Chinese investigators to explain the difference because there is a difference:

*“**China Open Market:** There are over 10,000 non-franchise distributors in China. Non-franchise distributors in China are called Open Market Distributors. Some of these brokers sell good parts only from franchise, some of them sell bad (secondary market) parts and some of them sell both. In this Open Market, about 25% of the parts are good and the rest are not. But it is very difficult to tell who is selling good parts and who is selling bad parts because the Open Market includes Secondary Market parts.*

***China Secondary Market:** This is where e-waste product (like that from Guiyu) is bought and sold. Brokers who sell only Secondary Market product do not have a VAT License. They sell their parts to Open Market brokers like those in Shenzhen.”*

HOW WILL THE INDUSTRY COPE WITH THE SECONDARY MARKET?

Do recycled or reclaimed components originating from e-waste have a place in the industry? Most companies we know acknowledge used or pulled parts do have value **if** they are original and in good working condition.

In speaking with individuals from the OEM & CM community, we were advised that they are fully aware the parts they sometimes require are no longer available in new condition. There are times when customers are willing to use pulled or refurbished product, especially when the parts they need are obsolete. The problem is far too many, if not most, brokers in China knowingly misrepresent the material because they learned early on that distributors want new parts and if new parts are not available Buyers want to pay less money if they make a purchase at all.

If e-waste or recycled product is left in its original condition does it have value?

Let’s revisit the issue of ESD...

Quote from Thomas Lee, Jabil Circuit, Inc. in response to being asked about the potential ESD risks associated with using reclaimed parts from China:

“Without question, discarded products being shipped on barges across the ocean, exposed to nature's elements and who knows what else, loaded and unloaded by dump trucks, stored in feed sacs, then manually disassembled, usually by holding the board in pliers and heating it over a gas burner, are risky merchandise. This harsh treatment raises serious concerns relative to potential failures, both immediate and latent. Although more than half of all discarded computers are in working order – meaning the parts on these scrap boards are actually good, many components do not survive the primitive removal methods. Damage occurs from salt air, excessive heat, rough handling, and ESD. This damage is INTERNAL to the parts, so although they can be “cleaned up” to look fine on the outside, the INTERIOR microelectronic structures can be severely damaged. This is like detailing a used car with a bad motor! Only a complete electrical test, which is very expensive, can tell. But scrap parts are never tested by the reclaimers. It is too expensive. So, this internal damage, including ESD damage, can reveal itself in the form of high immediate failure rates and latent failures in products at a later time.

The most important thing distributors can do, is be completely truthful with regards to the origin of the material because in doing so, the OEM or CM you are working with can decide if they are willing to purchase parts that run a high risk of failure due to the reasons revealed above.”

Today's report was intended to open your eyes to the magnitude of the problem we are facing.

Are you ready for change?

Questions or comments pertaining to today's article should be directed to: Kristal Snider, ksnider@era.com

¹ “the great e-waste recycling debate”, [United Nations Environment Programme](http://www.vitalgraphics.net/waste/html_file/36-37_ewaste.html).
<http://www.vitalgraphics.net/waste/html_file/36-37_ewaste.html>

² “Computer giants boost e-waste programs”, [CNN.com](http://www.cnn.com/2007/TECH/03/05/recycling.computers.ap/index.html), Posted: 11:25 a.m. EST, March 5, 2007.
<<http://www.cnn.com/2007/TECH/03/05/recycling.computers.ap/index.html>>

³ “Electronic Waste Adds to Pollution in India”, [Pbs.org](http://www.pbs.org/newshour/bb/science/jan-june07/ewaste_02-19.html), Originally aired February 19, 2007.
<http://www.pbs.org/newshour/bb/science/jan-june07/ewaste_02-19.html>

⁴ “Known and Suspected Routes of E-waste Dumping”, [Silicon Valley Toxics Coalition](http://svtc.etoxics.org/site/PageServer?pagename=svtc_ewaste_destinations).
<http://svtc.etoxics.org/site/PageServer?pagename=svtc_ewaste_destinations>

⁵ Lisheng, Zhan. “[Guangdong] Local gov't cleans up e-waste sector”, [News Guangdong](http://www.newsgd.com/specials/gdicc2005/gdicc2005focus/gdicc2005environment/200511100061.htm), Latest Updated by 2008-08-24 15:10:38.
<<http://www.newsgd.com/specials/gdicc2005/gdicc2005focus/gdicc2005environment/200511100061.htm>>

⁶ Johnson, Tim. “E-waste dump of the world”, [The Seattle Times](http://seattletimes.nwsources.com/html/nationworld/2002920133_ewaste09.html), Page updated at 12:00 AM, Sunday, April 9, 2006.
<http://seattletimes.nwsources.com/html/nationworld/2002920133_ewaste09.html>

⁷ Ibid.

⁸ Knight Ridder Washington Bureau. "Chinese City is World's Digital Scrap Heap", REDORBIT.com, Posted on: Sunday, 9 April 2006, 00:00 CDT. < <http://www.redorbit.com/news/display/?id=463382>>

⁹ "Electronic Waste Adds to Pollution in India", Pbs.org, Originally aired February 19, 2007. <http://www.pbs.org/newshour/bb/science/jan-june07/ewaste_02-19.html>

¹⁰ Ibid.

¹¹ "Computer giants boost e-waste programs", CNN.com, Posted: 11:25 a.m. EST, March 5, 2007. <<http://www.cnn.com/2007/TECH/03/05/recycling.computers.ap/index.html>>

¹² "Electronic Waste Adds to Pollution in India", Pbs.org, Originally aired February 19, 2007. <http://www.pbs.org/newshour/bb/science/jan-june07/ewaste_02-19.html>

¹³ Knight Ridder Washington Bureau. "Chinese City is World's Digital Scrap Heap", REDORBIT.com, Posted on: Sunday, 9 April 2006, 00:00 CDT. < <http://www.redorbit.com/news/display/?id=463382>>

¹⁴ Basel Action Network. "The Digital Dump", BAN.org, October 24, 2005. < http://www.ban.org/photogallery/nigeria_lagos/pages/image5028.html>

¹⁵ Basel Action Network. "Exporting Harm – The High-Tech Trashing of Asia", BAN.org, October 24, 2005. <<http://www.ban.org/E-waste/technotrashfinalcomp.pdf>>