

IT'S TIME TO FIX HOW YOU HANDLE REPAIRS.

Screen, test and repair is a service you can't go without.

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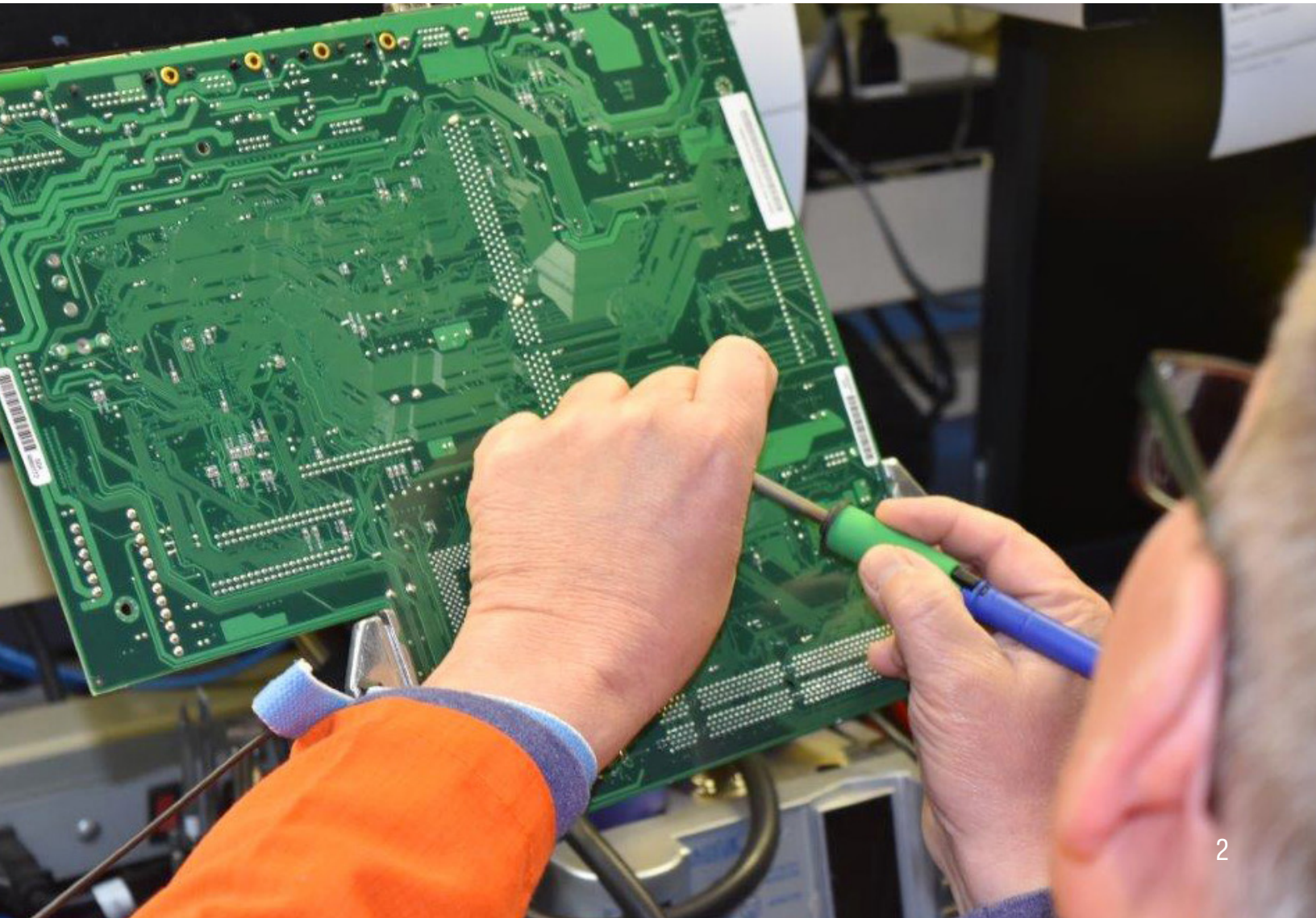
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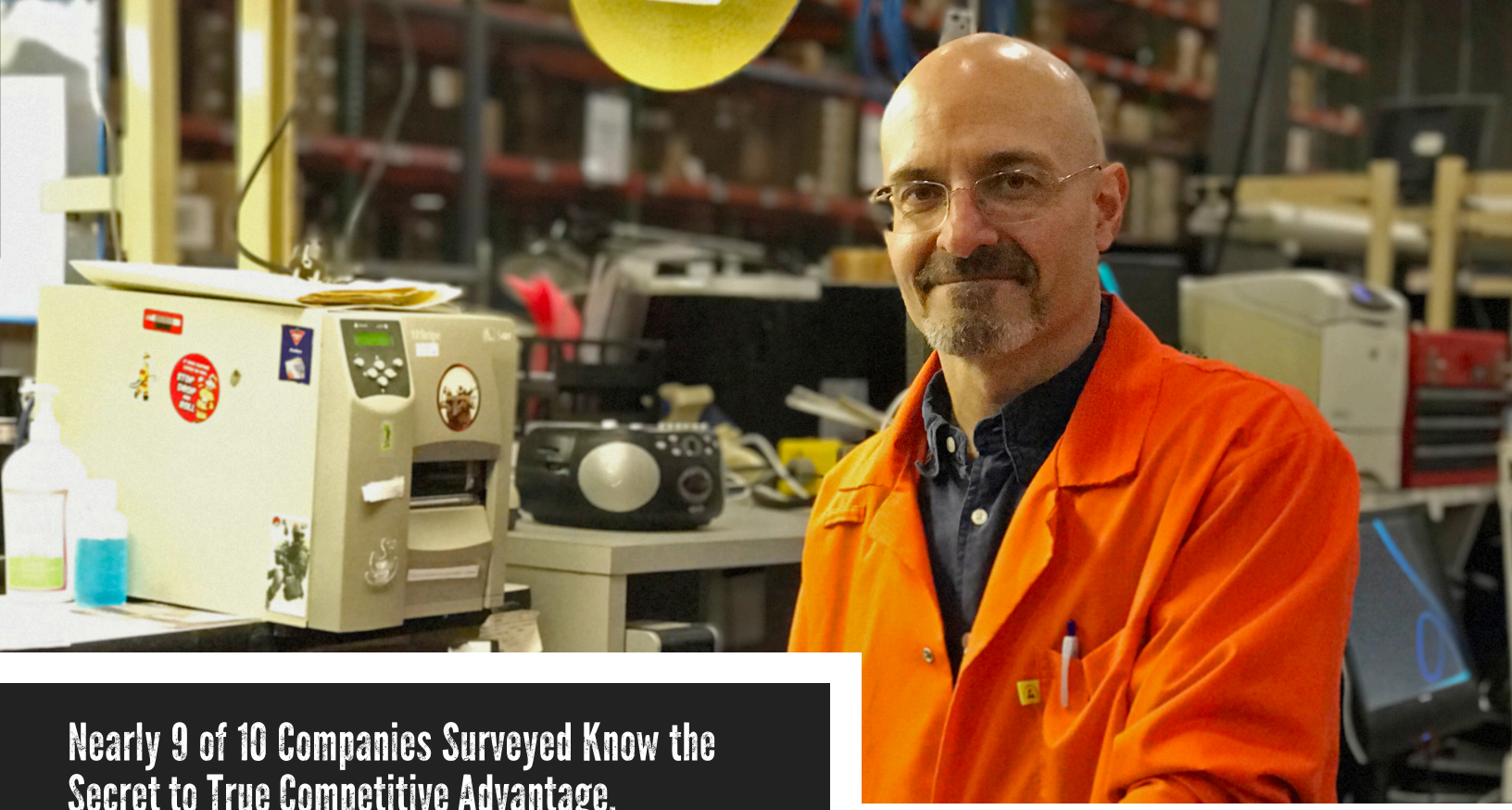
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Nearly 9 of 10 Companies Surveyed Know the Secret to True Competitive Advantage. Do You?

Customer experience, customer satisfaction, happy customers, CX. CSAT. No matter what you call it, it's one of THE most important key performance indicators (KPIs) in the business world – and it has been moving that way for a while. According to Gartner, 89% of companies see themselves as competing primarily on customer experience.[1]

What's the most deep-rooted aspect of customer experience today? Undoubtedly what happens after a sale—namely how well you handle returns and repairs. The commitment to getting those right helps manufacturers maximize their return on service. A recent study by Genpact found that companies focused on customer experience outperformed the S&P 500 Index by 27%.[2]

In the high stakes world of enterprise technology, 24x7, on call, no excuses, no questions asked, 2-hour, 4-hour and next business day (NBD) repairs and deliveries are what customers expect and pay for in some cases. Only the companies doing the replacing know the Herculean acts required to deliver the services that businesses everywhere take for granted.

Nowadays, repairs and replacements cost companies big-time but there's no way around the investment. High-tech manufacturers with a high volume of regional or global inventory returned to a central location face a plethora of challenges.

If you think you spend a lot on screen, test and repair now, just wait. As the global economy expands, so too will customer expectations. Now's the time to scrutinize your processes and strategic partnerships—and consider today's ways to fix defective units.

Screen, Test & Repair in Action: Collaboration and Process Save Big Telecom's Bacon

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> Companies that focus on customer experience outperform the S&P 500 Index by 27%. - *Genpact*[2]

[1] https://blogs.gartner.com/jake-sorofman/gartner-surveys-confirm-customer-experience-new-battlefield/
[2] http://www.genpact.com/insight/point-of-view/reimagine-high-tech-service-support-to-enhance-customer-experience-and-profitability

Today's Top 5 Challenges in Global Screen, Test and Repair

1

First on the list is turnaround time (TAT). The key issue for customers is the length of time it takes to get returns from regional collection points to a repair depot and back again to forward stocking locations. It's not uncommon for the entire journey to take 12 weeks, as is often the case with repairs coming from Brazil, as an example, that are shipped to repair depots in the U.S. The delays and uncertain timelines bring a host of inventory challenges, and in the worst cases, can cause delays in getting product back to customers.

2

High cost of ownership also weighs heavily on businesses. The price to move product significantly outweighs the cost to have screen, test and repair services provided in country or in region. Companies will regularly pay $10,000 to $50,000 to get a shipment back to home base for repairs.

"Companies will regularly pay $10,000 to $50,000 to get a shipment back to home base for repairs."

3

A third challenge is inventory management. It's hard finding solutions that help you manage service inventory in order to prevent the need to purchase replacement service inventory due to slow repair processing. In some cases the cost of introducing new product into the field to fulfill Service Level Agreements (SLAs) can be 30 times as expensive as using refurbished or No Trouble Found (NTF) stock.

4

Trade compliance is a major challenge. Every country has its own taxes, trade requirements and paperwork. Mess up on the paperwork and your shipments can be held up indefinitely. Local expertise and in-country representation are absolutely necessary to run a successful screen, test and repair program. The ability to move defective products, repair equipment, refurbished products and parts into and out of countries quickly and easily is a must. This requires expertise and resources most contract manufacturers do not have, and if trade compliance wasn't challenging enough already, technology (especially data storage) companies shipping defective products and returns across borders in the European Union must now comply with the General Data Protection Regulation (GDPR) or face massive fines.

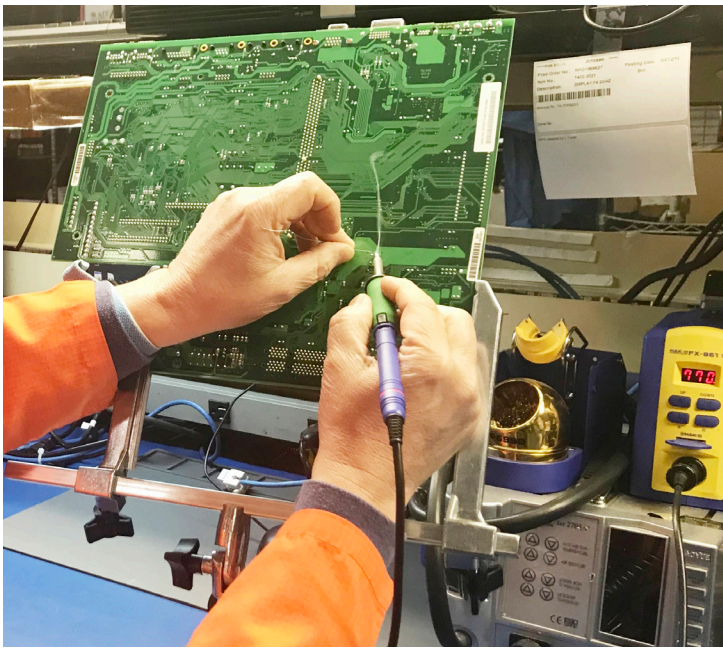
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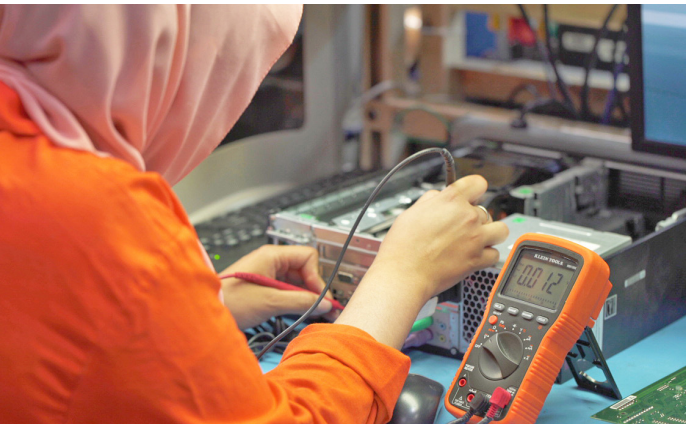
Capturing your valuable fail data is no easy task, either. With any solution you're considering for your screen, test and repair services, make sure you consider your data feedback loop. When 100 units are tested and 20 come back with the same problem, you need to know. Getting clear, quick feedback in such an instance can save you time and money and protect your reputation.

Your Options: Do It Yourself or Have Someone Do It for You

Whether you choose to handle repairs and returns in-house or outsource them, both models come with their own advantages and disadvantages. On the do-it-yourself front, there are typically three common approaches:

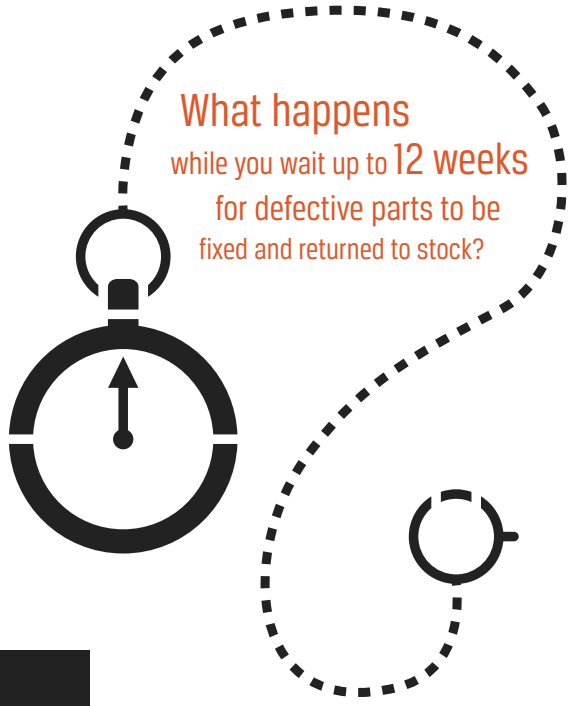
The first is to do-it-yourself in-house. Often manufacturers will direct repairs and returns back to the manufacturing plant. Although it may seem like a natural fit to send them back to the people who made them in the first place, it's not always the best option. Why? You need the space and people to manage everything. On top of that, you'll need robust and proven processes to ensure optimal performances and outcomes. Repairs and returns take techs away from production, revenue shipments or builds, which can become a drain on the business. Returns are often seen as a lesser priority for time-crunched techs, so the work can pile up, causing customer service problems. And when the company can't get a repair back on shelf in a timely fashion, companies are often forced to replace with new inventory. Opportunity cost is a less obvious, but real consideration as well. A good example: Real estate in California's Silicon Valley is at a premium. That space where the defective products are stored and worked on could be put to much more profitable use as office space for people doing product development. Plus you'll need personnel to effectively handle your service supply chain, leaving less budget for sales and product development—your core business building activities.





A slight variation on the in-house model is to use an independent repair depot. It could be in the United States or local to where you are, and either way this model enables you to free up your office space by choosing a location with more cost-effective real estate. You'll also free up your techs. But you'll trade these costs for several new (and significant) ones. This model of consolidating returns regionally and shipping them to a central location takes time and effort. It means repairs can take upward of 12 weeks when your product is being shipped from regional collection points in Europe or South America. It takes even longer for OEMs or customers that collect and return monthly, quarterly, or when they've amassed enough defective products to maximize the returns versus shipping cost. That makes it difficult to keep refurbished inventory in forward stocking locations around the world. It increases your risk of running out of stock and having to replace with new—or delay delivery—which threatens your customer satisfaction. And if all screening and testing is conducted in this central location, you're wasting a fair amount of money by shipping perfectly good product away to be tested.

The third option is to send repairs back to your contract manufacturer. The challenges with this model involve having to ship the products from a central location, where the product is consolidated, to the contract manufacturer often located in the U.S, Mexico or China. There it gets tested and screened and repaired, then the entire lot gets shipped back. It can take three months when all is said and done. This lengthy process poses monumental challenges for companies who need to keep extra stock on shelves in order to meet service demands. And if you're low on inventory, you'll have to replace with new product. To add insult to injury, you can count on a high percentage of no-trouble-found (NTF) returns, which you'll have shipped all the way to back just to be tested – at an additional cost – and returned intact 10-plus weeks later, when all along the product(s) could have remained in the field.



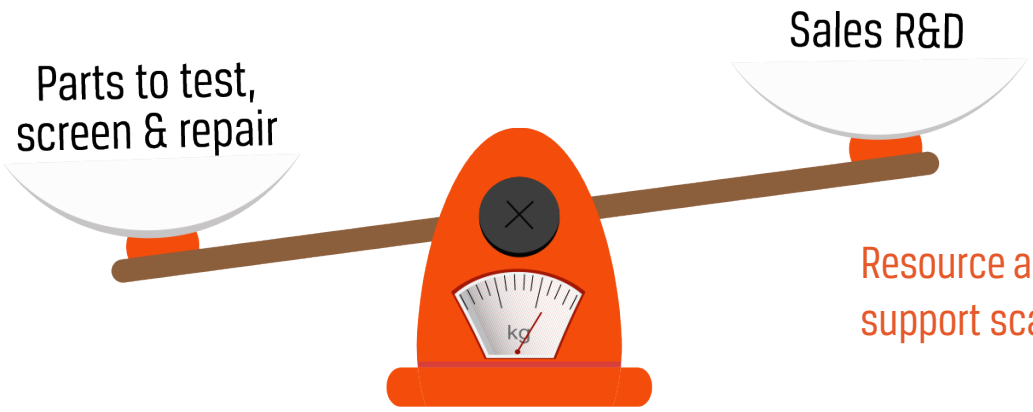
The Costs of Doing It Yourself can be a Sure Way of Doing Yourself In

All three of these options come with slow turnarounds and high costs that make it hard to get repairs back on the shelf in a timely fashion, necessitating in many instances replacement with new stock and the even more serious risk to your customer satisfaction.

In addition, the do-it-yourself methods usually rely on DIY trade compliance which brings even greater risks to manufacturers. There is a steep learning curve because you'll have to learn the unique requirements, taxes and paperwork for every country you go into. Mistakes in any of these areas can have heavy consequences. Customs officials in some countries can hold a shipment indefinitely until paperwork demands are met–and even hold up unrelated cargos from the same shipper until the issue is resolved.

Bottom line: Without a wholehearted investment in whatever do-it-yourself model you embrace and a dynamic commitment to managing through the challenges and astronomical costs, you could do tremendous damage to your brand and future success.

Weighing DIY?



Resource allocation does not support scalability & growth.

Tech Manufacturers Can Find Salvation through Outsourcing



Many companies recognizing the specialized expertise of running an effective service supply chain look to outsource repairs and returns. Doing so enables tech companies of all sizes, with both domestic and global reach, to direct their time, resources and talent toward their core businesses of product development and sales. Outsourcing screen, test and repair services is especially beneficial to companies operating globally where turnaround times and transportation costs can skyrocket as a result of transportation and trade compliance requirements.

Outsourcing Partners Hail from a Variety of Fields

In choosing an outsourcing partner, the top considerations are global footprint and high-technology expertise. Potential candidates come from a range of business models, each with its own advantages, but it's important to note that the biggest players require big budgets to work with.

In high tech, it's estimated that up to

40%

of returns are No Trouble Found that could be immediately returned to the field.

Global manufacturing solutions providers. This group includes high-tech solutions companies that design and build products as well as electronics manufacturing suppliers (EMSs). These companies work with annual repair budgets in the millions, which makes them viable only for the top 1% of large manufacturers. They tend to focus on production, technical and engineering services as well as test and repair. They can function as independent repair depots, speeding turnaround time and circumventing many trade compliance challenges. They can create solutions that are strong regionally around the world and often subregionally; however, keep in mind other key services, such as trade compliance, are rarely offered as part of an end-to-end solution. This would require you to maintain relationships with multiple partners to achieve results that a service supply chain provider can accomplish. That also means that, in most instances, they'll still have to consolidate outside of region or in less optimal locations, so your cost of ownership and freight costs will remain high.

Third-party maintenance and professional services companies. These partners provide engineering technical resources and tend to be primarily focused on building IT infrastructure. They mostly offer onsite support, providing feet on the street and performing professional services-type engagements. Like global manufacturing solutions providers, they're a high-end option. If you're not spending millions each year in screen, test and repair, they usually aren't interested—and if they are, you may receive a regional service package that doesn't significantly improve your cost of ownership or customer retention. These service providers are skewed toward performing repairs onsite and providing warranty support and engineering services. Often that comes at the expense of expertise in logistics, trade compliance and the after-sale service market—three areas that are critical to success in screen, test and repair.



Service Supply Chain Companies: An Accessible, Scalable Option

Companies in the service supply chain category hold tremendous potential for global high-tech manufacturers. Potential partners in this field have the requisite experience in forward stocking as well as in-country infrastructure and local partnerships which facilitate local repair depots—the key to lowering total cost of ownership. Their ability to establish local or multitudinous regional or subregional return points helps companies improve turnaround times on repairs, too.

These companies tend to be smaller, more accessible and adaptable. After all, the mainstay of their global logistics capabilities is strong worldwide connections for efficiently moving products in and out of countries. These service logistics experts could solve the most basic problems for companies distributing high-tech products globally: If you're not very large, it means you're usually coming back to a single or dual supply point—and paying dearly in turnaround time and freight costs.



In many ways, these companies are a natural for providing screen, test and repair services worldwide. To succeed in the global service logistics field, you have to have a presence and/or established partnerships in every country in the world where your customers – or their customers – do business.

> Clear, timely, actionable failure data can save TIME, MONEY and YOUR REPUTATION.

The benefits they can provide manufacturers in screen, test and repair include:

1. Partnerships that provide you an instant connection to global services needed to compete in today's cutthroat ecosystem.

2. A foothold with personnel who can screen and test in country—a move that would immediately put NTF stock back on your shelves.

3. A partner with an established global network and logistics expertise that would streamline your consolidation and transportation processes to lower your costs.

4. A trade compliance advantage because these companies are already doing the work in countries where you are, know the requirements and have experience complying with them.

5. A head start if you decide to establish in-country or regional repair depots, because a logistics partner potentially already has a facility in place and a company or partner that can be hired on your behalf.

Collaboration and Process Save Big Telecom's Bacon

CHALLENGE

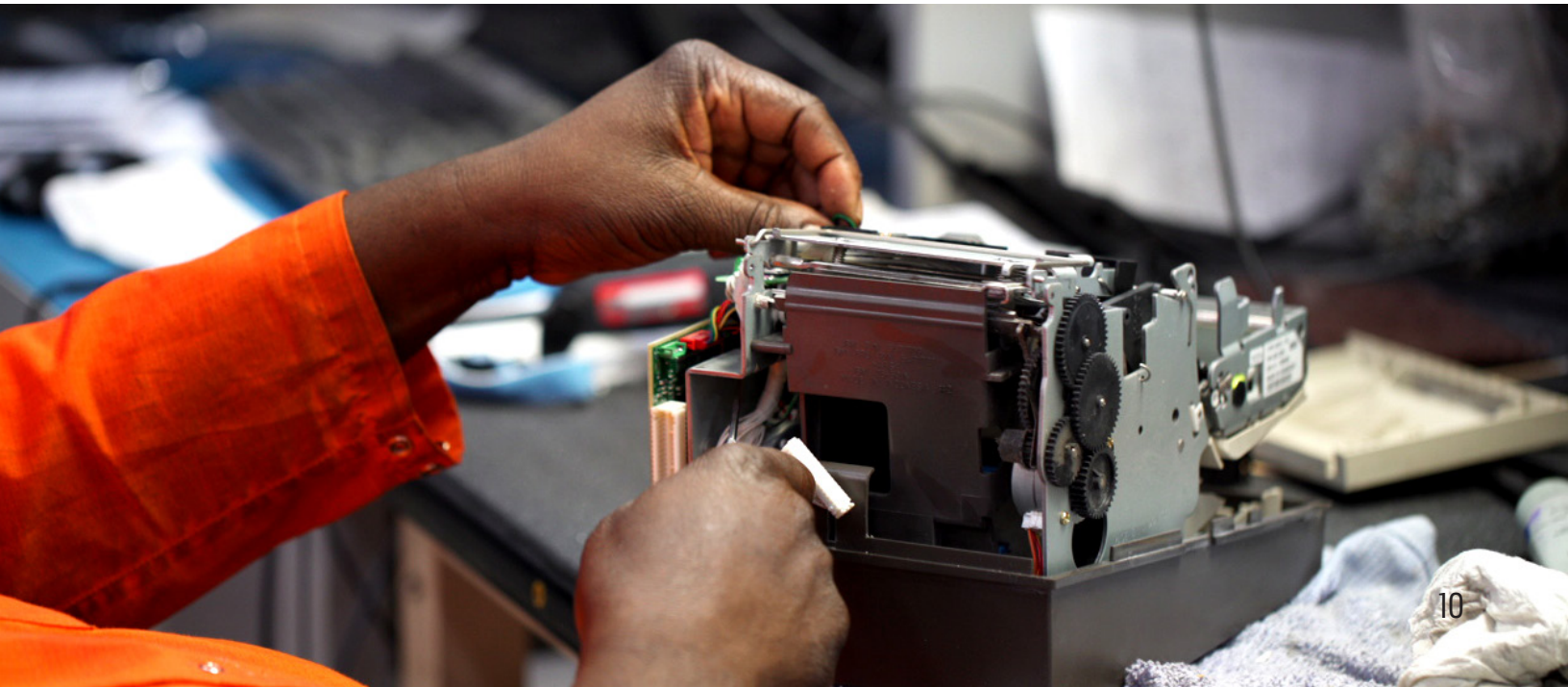
A large telecommunications OEM required specific revisions to upgrade a power supply that was encountering early life failures in the field. These units were available in the U.S. and European Union. The challenges: contain costs and reduce turnaround time for repairs. Also, there was no way to know systematically what version of the power supply was in the units in question; this was not tracked by the manufacturer or client, only by a sticker on the power supply itself.

SOLUTION

Flash Global collaborated with our client to identify product models, part numbers and processes to screen full units during all receipts (inventory and returns). The power supplies in question were replaced in a global service center and the suspect power supplies were collected and returned from our facilities directly to the power supply manufacturer. Units that already had the newer power supply were reported to the client, making it easier to track and confirm correct revisions.

RESULTS

This process has been in place for over a year in the EU and U.S. The client continues to screen the power supply in units. They have since added other screening services to capture details needed at the part level. The feedback from our client has been very positive, citing easy management, cost savings and issue containment that is 100% effective for this difficult issue.

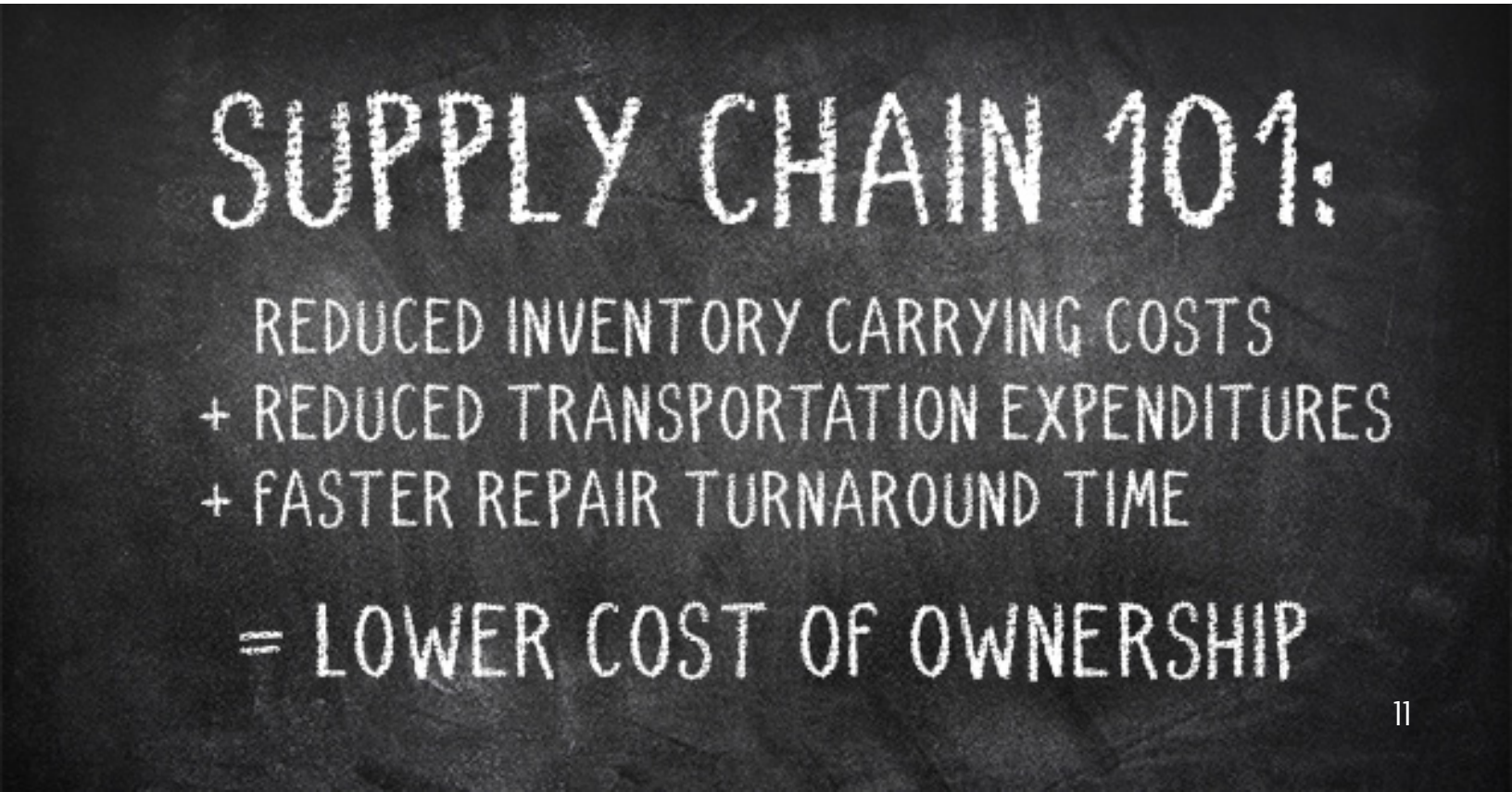


Which Option Scores Best in Lowest Cost of Ownership?

It can be **30X** more costly to purchase new rather than use refurbished or NTF stock.

Unless you're a multibillion-dollar high tech manufacturer that spends millions in screen, test and repair each year, having a service supply chain partner is the best way to reduce your inventory carrying costs, transportation expenditures and repair turnaround time, i.e. lower your cost of ownership. The alternative of pushing all your global repairs back to a single point in the world simply can't compare.

For starters, just having a regional partner who can identify NTF before it's shipped back to the place doing the work, puts 40% of your repairs back on your shelf. By shifting your repairs regionally, you can decrease your turnaround time by weeks and get refurbished product back on shelves quickly. Depending on the location, the change can be as dramatic as going from 12 weeks down to one week. In doing so, you could chop your carrying costs in half or even reduce it to a quarter of what it was. Lowering your turnaround time decreases your risk of running out of refurbished stock and having to replace with new product—a move that is often 30 times what a repair costs. Reducing the time out of the field of a product is the most important savings, but it's only the beginning of the savings in transportation and hassles from trade compliance. All of which can make a service logistics partner an indispensible link in your repair chain.



Find the Answer to Your Screen, Test and Repair Challenges through Flash Global

You'll find a tremendous ally in Flash – and all the tools you need to reduce total cost of ownership. We have repair facilities strategically located around the world to handle your screen, test and repair needs. Your repairs don't have to come back to the U.S. – period.

In addition to providing the network to lower barriers to entry, Flash provides robust data reporting to enable you to pinpoint design problems and improve control, visibility and your customer satisfaction.

The "help you sleep better at night" promise in doing business with Flash is backed by simplicity. We call our approach the Simplicity of One. With Flash, you'll receive one contract regardless of the countries or partners involved. You'll have one point of contact for everywhere in the world and you'll deal with one system, process and set of procedures. In today's world where brands are global and global consistency is key, Flash enables you to have one way of delivering service – your way, the right way.

Let Flash Provide the Missing Links in Your Service Supply Chain

- Pass/Fail/NTF Screening
- Diagnostic Testing
- Customer-Specific Testing/Evaluation
- Configure to Order
- Rack-ready Configuration
- Depot Repair
  - ✓ Board Level Repairs
  - ✓ Component Level Repairs
  - ✓ BGA Repair
- Refurbishments/OEM Authorized Repair
- Whole Unit Lifecycle Management (Refurb/ Recondition/Repair)
- Field Replacement Units (OEM Warranty Management, Defective Disposition, E-Waste)
- Engineering Change Orders
- Module Replacement
- Data Destruction
- Whole Unit Teardown
- Warranty Verification / Claims Management

Glossary

A

Asia Pacific Region (APAC)
The part of the world in or near the Western Pacific Ocean. The region includes much of East Asia, South Asia, Southeast Asia, Oceania and Australasia, as well as small/medium/large Pacific island nations (Asia Pacific and Australasian Continent).

B

Bill of Materials (BOM)
A list of the parts or components that are required to build a product.

Break/Fix
Refers to the fee-for-service method of providing information technology services to businesses. Using this method an IT solution provider performs services as needed and bills the customer only for the work done. The service may include repairs, upgrades or installation of systems, components, peripheral equipment, networking or software.

C

Command Center (CC)
Command Centers are the hubs from which Flash Global manages customers' global supply chains. Specifically, this is where we process orders, manage order milestones, manage import/export services (create commercial invoices, denied part screening, export filing, etc.), and through which communication and escalation of issues to internal and external customers takes place. Flash has five Command Centers, located in New Jersey (Mountain Lakes); Sao Paulo, Brazil; Tokyo, Japan; Singapore; and Amsterdam, The Netherlands.

Configure to Order / Build to Order (CTO/BTO)
Configure to Order (CTO) - Product that has hardware and/or software configuration, licensing, or other services performed prior to shipping.

Build to Order (BTO) - Products are not built until a confirmed order for products is received and shipped as a predefined specified SKU/product.

Contract Manufacturer (CM)
A manufacturer that contracts with a firm for components or products.

D

Distribution Center (DC)
Serves as only a Distribution Center/warehouse for purposes of Network FSL Fulfillment, End User / FE shipments (Domestic /INTL) as applicable may include returns processing. Flash has 15 Distribution Centers worldwide: Union City, CA; Chicago, IL; Columbus, OH; Toronto, ON; Amsterdam, Netherlands; Moscow, Russia; Dubai, UAE; Mexico City, Mexico; São Paulo, Brazil; Hong Kong, China; Tokyo, Japan; Singapore; Chennai, India; Sydney, Australia; and Johannesburg, South Africa.

E

EMEA (Europe, Middle East & Africa)
The region is generally accepted to include all European nations, all African nations, and extends east to Iran, including Russia.

Engineer Change Order (ECO)
An order that documents changes in product or process.

Engineer Change Request (ECR)
Temporary deviation to previously indicated product specification or build.

F

Field Services
A set of applications which help organizations manage work tasks that need to be completed on location.

Forward Stocking Location (FSL)
A mini warehouse close to the customer. Companies use forward stocking locations to meet service level requirements, reduce transportation costs and control distributed inventory.

G

Global Service Center (GSC)
Serves both as Distribution Center for the purposes of network FSL fulfillment, End User / FE shipments (Domestic / INTL) to include returns processing. As well as including the new Service Suite Offerings such as CTO etc. Flash has five GSCs: Union City, Calif.; Columbus, Ohio; Toronto, ON; Sao Paulo, Brazil; and Amsterdam, The Netherlands.

I

Importer of Record / Exporter of Record (IOR/EOR)
IOR: Customs term for the entity responsible for (1) ensuring the imported goods comply with local laws and regulations, (2) filing a completed duty entry and associated documents and (3) paying the assessed import duties and other taxes on those goods.

EOR covers the same points as the IOR, but applied to Export instead of Import operations. The EOR is responsible for responding to everything about an export operation to foreign destinations.

Independent Repair Depot
A firm that provides material maintenance or repair requiring the overhaul, upgrading, or rebuilding of parts, assemblies, or subassemblies, and the testing and reclamation of equipment as necessary, regardless of the source of funds for the maintenance or repair or the location at which the maintenance or repair is performed.

K

Kitting
Light assembly of components or parts into defined units, Kitting reduces the need to maintain an inventory of pre-build, completed products, but increases the time and labor consumed at shipment.

L

Latin America Region (LATAM)
Consists of twenty sovereign states and several territories and dependencies which cover an area that stretches from the northern border of Mexico to the southern tip of South America, including the Caribbean.

M

Managed Services
Ongoing services

Glossary (continued)

N

Next Business Day (NBD)
An order to move a shipment the next business day after it is placed/submitted. Generally, this is Monday through Friday (excluding weekends and holidays). A business day can vary by region as dictated by local customs, religions, and business operations. Shipments must be submitted before an established cutoff time to meet the requirements for next day delivery.

Next Flight Out (NFO)
Time-critical service used when next day service isn't soon enough.

No Trouble Found (NTF)
Unit, components or parts that are removed from service due to a perceived fault. They are screened and tested but no anomaly is detected. Consequently, they are returned to service or inventory with no repair performed.

O

Original Equipment Manufacturer (OEM)
A manufacturer that buys and incorporates another supplier's products into its own products. Also, products supplied to the original equipment manufacturer or sold as part of an assembly.

P

Professional Services
Time-bound, project-based implementation.

Q

QC Test
Typically the final test–a review of the quality of all factors involved based on agreed to sample rates (up to 100%).

R

Return Merchandise Authorization (RMA)
A part of the process of returning a product in order to receive a refund, replacement, or repair during the product's warranty period. The purchaser of the product must contact the manufacturer (or distributor or retailer) to obtain authorization to return the product. The resulting RMA or RGA number must be displayed on or included in the returned product's packaging; no returns are accepted without this number.

S

Service Level Agreement (SLA)
A service-level agreement (SLA) is a contract between a service provider and its internal or external customers that documents what services the provider will furnish and defines the performance standards the provider is obligated to meet.

Service Supply Chain
A detailed organization and implementation of a complex operation comprised of an integrated set of logistics and professional services specifically designed to enable OEMs to support their products after the sale.

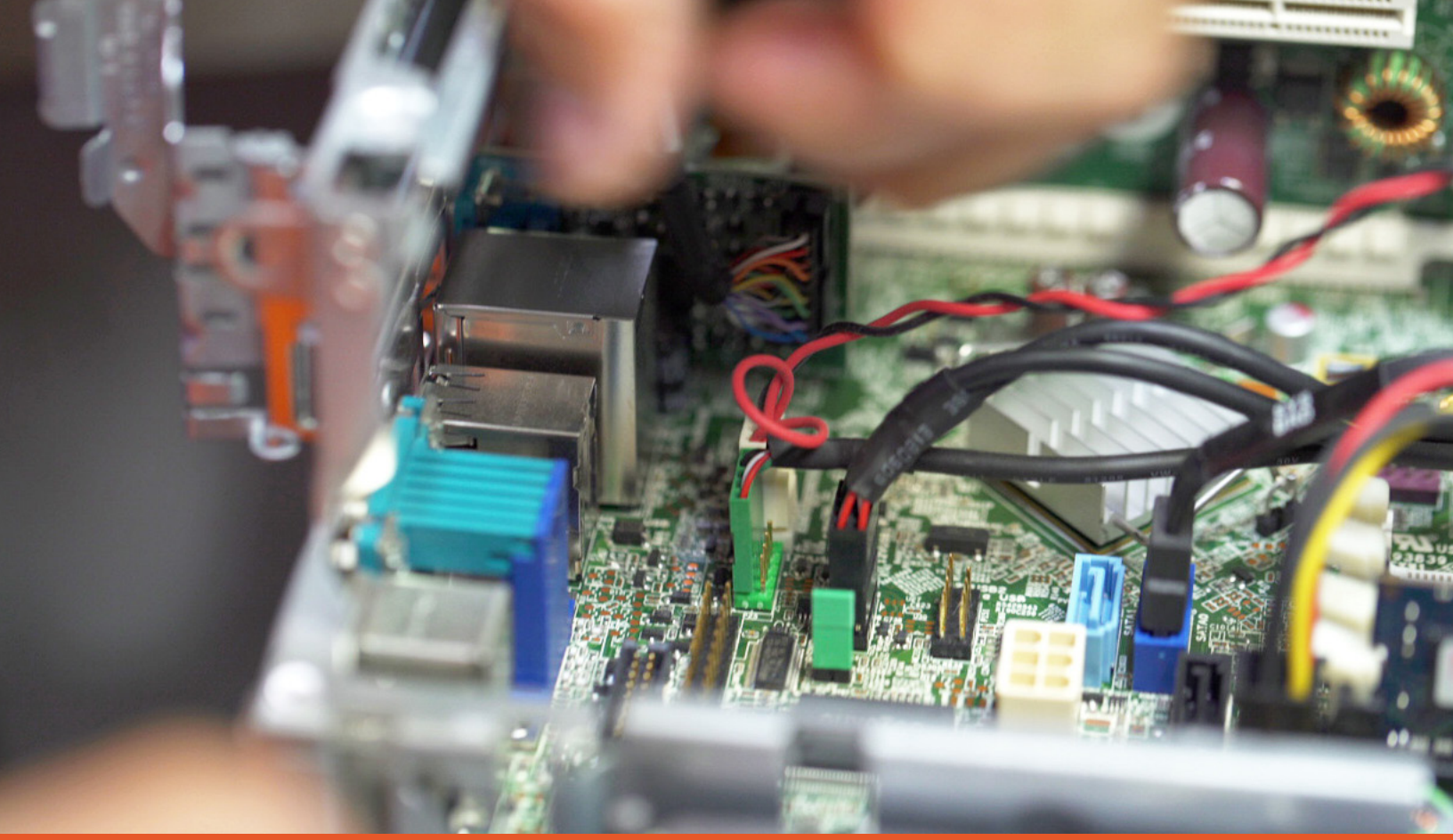
Staging
Refers to a process of storing goods (post CTO/BTO) before shipment, typically a short term or interim storage prior to shipping.

T

Total Cost of Ownership (TOC)
A concept that examines all of the costs related to the acquisition, transportation, and storage of products within the supply chain.

Turnaround Time (TAT)
Period for completing a process cycle (such as repair or replacement of a component or equipment), commonly expressed as an average of previous such periods.





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