

Reshoring activities in the supply chain

How Ivaldi's solution solves
the challenge.



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Introduction



Shipping replacement parts is expensive, unreliable, and wasteful.

Better data is causing a resurgence in reshoring as it can reduce risks and improve efficiencies.

As companies go through digital transformation initiatives, it is no longer seen as an operational cost center but a multi-level function geared towards building business capabilities to drive growth and minimize risk. Supply chain management must allow a corporation to be agile and responsive to new opportunities and challenges.

The reshoring phenomenon gives levels of agility to a supply chain not seen with offshoring. While not a reversal in supply chain management as technology advances, companies can produce their products locally and on-demand.

Twenty years ago, on-demand production tools weren't as cost-efficient as they are today. Reshoring has always been popular, as it allows for job creation locally and removes the uncertainty of transportation delays. However, cost-effectiveness matters, and it's not always feasible to reshore. Also, how we calculate the actual costs of parts and supply chains have evolved. It's not enough to look at procurement costs; a complete picture of value must be created to understand what is most cost-effective. For instance, if a part is cheaper overseas but costs more to get it here or has more defects causing down-time, that might not have shown up quantitatively as consideration for procurement in earlier supply chain systems. With better and more accessible data, such cost calculations are more available.

Offshoring doesn't mean lower costs. One of the reasons can be customs and exiles costs that increase the products' pricing. There are also other costs connected to uncertainties with global pandemics, port strikes, etc. The total cost of ownership, not just labor cost or production cost, must be considered. Reasons to reshore with distributed manufacturing/digital distribution:

Search parameters

Shifting inventory to the cloud for a number of different reasons:



Time

- Delivery time
- Delays
- Supply chain risk
- Better tracking
- Adaptability



Money

- Inventory carry costs
- Warehousing costs
- Express shipping
- Unsheduled downtime
- Inventory shrinkage



Resources

- Excessive CO2e/tkm
- Local job creation
- Obsolete parts
- Recylability
- Accidents/Safety



Environmental impact



There are environmental factors to consider with centralized manufacturing. (moving products from one place to another worldwide).

There is an increase in the CO2 emissions footprint on each product, and when manufacturing the parts, a guess has to be made how many of the items are needed. When that guess inevitably is incorrect, goods must be thrown away or additional resources expended to create another batch.

Sourcing raw materials locally, manufacturing/process locally, using locally, end of life, or recycle/reuse locally means the lifecycle of a product does not include emissions due to outside transportation.



Reshoring with on-demand manufacturing reduces the environmental impact on each product, increasing jobs in the country of origin, and reducing piracy of products.






When to reshore

Timing the decision to reshore supply chain activities is as individual as the company. However, a good time to do so is when product pricing can absorb the costs of moving manufacturing centers to the country of origin.

How much does it cost?



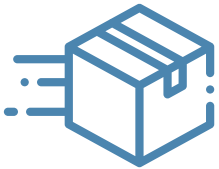
Below is an example of a 1KG impeller being transported from Rotterdam to Singapore.

Time	Mode	Cost	CO2e
35 days		\$85 (\$0.9 bulk)	~0.23kg
3 days		\$129	~7.75kg
9 hrs		\$0.6 (\$8 print)	~0.2kg

Benefits of reshoring



**Logistics and
customs savings**



**Faster and more
control over the
manufacturing**

There are a number of benefits to reshoring.

Ultimately why replace a broken part with the same part design? We can do better and evolve part performance with on-demand solutions. It shifts the focus in the supply chain from centralized manufacturing to the needs of the end-user. Today, most supply chains are about figuring out how to get goods from the factory to the end-user. Tomorrow most of the supply chain should be about how to best serve & optimize for the end-users needs.

Most countries are very welcoming of reshoring efforts - at least to their country. More jobs are always popular. However, there are some regulations, and it does depend on the country. Some countries have strict emission regulations, which make manufacturing more expensive due to the infrastructure setup. Some have labor laws that might increase costs.

One issue can be VAT vs. import/export duties. Local manufacturers may face higher charges depending on the country.

Once you have local on-demand manufacturing capabilities, other local industries can also take advantage of the infrastructure. This was shown, e.g., during the early days of COVID when local makers and manufacturers stepped up to create PPE solutions for healthcare and other vulnerable workers.

While reshoring is becoming more popular, it can depend on the company and inventory types with technology and pricing changing rapidly, so companies need to be paying attention less; they lose competitive advantages.



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Some countries have strict emission regulations, which make manufacturing more expensive due to the infrastructure setup.

In recent years several large enterprises have established manufacturing supply chain safeguards by partnering with on-demand manufacturers. This mitigates the risks associated with production or shipment delays, and unpredictable swings in demand.

For example, these companies have reshored successfully creating over 16000 jobs over five years:

- **Wal-Mart**
- **Ford**
- **Boeing**
- **General Electric**
- **General Motors**



The case for reshoring



Covid-19 has brought several challenges with travel, widespread shortages of medical supplies and other assets, and sudden restrictions placed on suppliers across the world; reshoring is now on the radar of supply chain experts and manufacturers worldwide.

While the decision to reshore will hinge on cost for many organizations, emerging data shows that reshoring can create cost efficiencies. According to the Reshoring Initiative, factors like lower transportation costs and quicker inventory turns can offset higher labor costs to make reshoring less expensive overall.

For businesses that decide to migrate their operations, effective inventory management and supply chain tools will be essential for success. Over the last decade, innovation across the industry has brought new solutions to the forefront that can support businesses' reshoring efforts.



Businesses are taking notice. Between 2010 and 2018, 749,000 jobs were brought back to the U.S. across 2,900-plus companies due to reshoring.





Thanks for reading



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