3 steps to a shorter, greener supply chain

A whitepaper exploring the motivations and opportunities for businesses restructuring their supply chain processes to reduce carbon emissions, cut resource consumption, as well as optimise spend and productivity.

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Introduction

Since the pandemic, there has been a need to localise the production of manufactured goods. The widespread closure of borders highlighted how fragile the strategy of manufacturing goods thousands of miles from the intended market really was.

Until January 2023, China remained closed to international visitors, when the majority of other countries had reopened their borders some time before. However, the lockdown of Foxconn served as a reminder of the commercial impact closing a mega factory can have on annual earnings. In this case, the release of the iPhone 14.

The latest Forrester Research report: *European Predictions for 2023*[1] describes how organisations are instead turning to networks of local micro-manufacturers. This approach spreads the risk of production delays and shortens the distance between the point of manufacture and the intended market.

The commercial benefits of developing an agile and shorter supply chain are clear. As shown in the same report, 58% of European consumers prefer to purchase more environmentally friendly products. This means organisations must make carbon reduction a priority as part of their Corporate Social Responsibility (CSR). This relates to all aspects of their business, from internal processes, such as production, to external processes, such as those in the supply chain. By doing so, these organisations will have greater sustainability credentials to share with their potential customers, which subsequently leads to an increased market share.

Whilst the need for change is accepted, many organisations' challenge is how to implement it in a timely and cost-effective way. This report addresses the challenge by outlining 3 steps to reduce distance in the supply chain and make it greener in the process.

Executive Summary: 3 Key Takeaways

01. EDI to benefit both the supply chain and the planet

A key benefit of shortening the supply chain is a reduction in carbon emissions. This is because the finished product has less distance to travel to its intended market. In addition, digitising the entire supply chain leads to significant savings[2] in paper and printer consumables.

In addition, Transalis works with its technology partners to:

- Optimise the energy efficiency of our infrastructure
- Reduce physical hardware through server virtualisation
- Support your Corporate Social Responsibility

All of the above contributes to happier consumers, who are actively seeking more environmentally sustainable products.

02. Scalable and agile use of micro manufacturers

In a bid to minimise the threat of manufacturing delays, Forrester Research[1] identifies a business trend to spread this risk by using multiple local micro-manufacturers. However, this approach brings its challenges. Scaling up the number of manufacturing suppliers and then integrating each one to ensure business-critical information can be exchanged is a complex task. Not least because it is highly likely that each new supplier will have different levels of competency to support this exchange of information.

Harnessing the power of a single digital transformation layer is a simple and effective approach. This solution can manage variations of capabilities between different connections and then standardise your organisation's supply chain information.

03. Maximising productivity with data visibility

The main compromise of embarking on a micro-manufacturing strategy is their smaller capacity to supply. Therefore, coordinating the output to match the demand becomes a critical requirement.

To achieve this you need to extend the range and type of digital messages that are exchanged across the supply chain. This expands on the typical EDI message set of order and invoice, to also include stock and sales reports.

This broader range of data that is exchanged improves the agility of the supply chain. As the Transalis transformation layer can connect to multiple endpoints, there is also no risk of siloed processes.

1. EDI to benefit both the supply chain and the planet

As briefly outlined in the Key Takeaways section, a major benefit of enabling EDI to manage a manufacturer network is that it provides flexibility and reduces the risk of supply chain failures.

However, the other key benefit of a localised supply chain is a reduction in carbon emissions. This is because finished product has less distance to travel to reach its intended market.

As Forrester Research[1] point out, consumers are increasingly factoring environmental concerns into their buying process. So, a by-product of shortening the supply chain is happier consumers.

Beyond the direct impact of product having shorter travel distances, digitising the exchange of order documentation means a dramatic reduction in the consumption of paper and printer consumables.

In recent research by Adobe[3], which surveyed over 1500 employees in large organisations, it was found that on average each employee prints approximately 450 pages per week. Overall, this paper and print consumption equates to:

Figure 1. Average annual printed paper consumption per employee

EMPLOYEE ANNUAL PAPER CONSUMPTION			
Pages printed	Reams of paper	Boxes of paper	Total paper cost
23,400	47	5	£200*

**based on an average cost for a box of paper (10 reams) of £40*

When these calculations are scaled up across the whole organisation, or even just across an entire team, the cost implications for organisations are clear. This is irrespective of the additional costs of ink, running costs of printers or other hardware, which, in total, Gartner[4] estimates costs businesses between 1-3% of their annual revenue.

There are also the overhead costs to process all these paper documents. In fact, in their research, Adobe also found that employees are wasting more than 28 days per year on low-value tasks such as printing, stapling, signing and scanning documents.

In addition to the costs of printing physical paper documents, other costs are associated with a supply chain that runs on outdated processes. As our Customer Service Director explains:

> “In a traditional, i.e. more manual-based, supply chain you quite conceivably need a team of at least 20 people on-premise to deliver on the full order cycle successfully. Starting with the retailer buyer raising an order on their system, through the exchange of emailed PDF documentation involving order processing, warehouse and finance teams - taking significant time and resource, without considering the introduction of multiple Single Points of Failure (SPOFs) and opportunities for human error.”
>
> **— Huw Davies, Customer Service Director**

The workflow described above is a stripped-back version of common manual supply chain processes and is only reflective of everything running smoothly. When factoring in document mis-keys, communication errors, or other delays, this becomes far more inefficient in cost, consumption and emissions.

Particularly when considering the peripheral ‘costs’ (both environmentally and financially) for the supplier taking this order management approach, summarised below:

Physical servers that have the capacity to store the required information even at peak periods:

- Energy usage to run them 24/7
- Energy usage of ventilation systems to keep them cool

On-premise teams:

- Number of overheads
- Commuting emissions
- On-site energy usage (computer equipment, heating, lighting etc.)
- On-site hardware (e.g. printers) and office consumables (e.g. paper)

Reducing carbon emissions and paper consumption in practice

As such, addressing carbon emissions and paper consumption is an increasingly common motivation for organisations looking for a digital transformation solution. Transalis has first-hand experience in supporting our clients with these objectives.

In our case studies, one with Smeg[5] and another with an office supplies business[6], we digitally transformed manual order processing. Smeg were initially printing between 600-800 order documents per month and the office supplies business were printing approximately 2,000 order documents per month.

With our solution, we digitised this documentation for both of these clients as well as automated their processing workflows, using a combination of EDI, narrow AI and integration services.

With this paper-to-digital approach, paper consumption is significantly diminished, errors are eradicated, overheads are reduced, and emissions are cut. Here's how:

> At Transalis, we can innovatively take advantage of server virtualisation. Traditionally, organisations need to acquire servers that can deal with the maximum peak workload during periodic sales spikes. However, with this approach, the organisation is footing the bill for these servers to run on the exact same power and capacity during quieter sales periods. For businesses with seasonal sales peaks, this is not an efficient use of resources. In contrast, server virtualisation allows for the automated scale-up and down of this server capacity depending on demand, thus reducing unnecessary energy consumption year-round. In addition, switching from a manual order processing workflow to one supported by EDI means there are only two human touchpoints; the first at the pick, pack & dispatch stage on the supplier side and the other by scanning the received goods on the retailer side. All other interactions and exchanges of information between parties are entirely automated.
>
> — **Huw Davies, Customer Service Director**

Subject to some controls and forward planning, with EDI in place, a huge number of people are removed from low-value processing in the supply chain. Not only that, but this approach further supports work-from-home or multi-location teams that can access all of this information via the organisation's internal systems remotely. All in all, this automated workflow significantly cuts business spend, as well as the consumption of resources.

As a SaaS business, Transalis takes its environmental responsibilities very seriously. We can help support your organisation meet its CSR and consumer demands. We work with our technology partners to optimise the energy efficiency of our infrastructure, maximise the use of renewable energy and minimise the need for physical hardware through server virtualisation.

2. Scalable and agile use of micro manufacturers

As outlined by Forrester Research[1], the business trend of using multiple localised micro-manufacturers is a necessity in minimising the threat of manufacturing delays.

However, with an increased number of manufacturing suppliers, there is a risk that the complexity and cost will undermine the potential benefits of a broader supply chain.

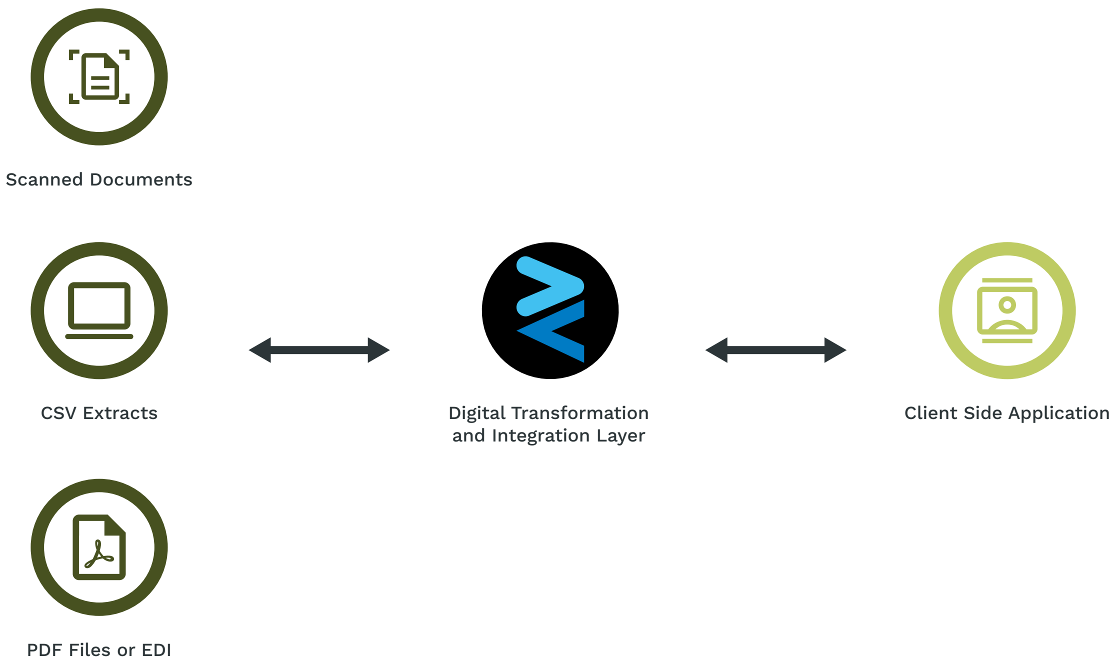
Overcoming Complexity

Scaling up the number of localised manufacturers and integrating each one so that business-critical information can be exchanged can be challenging. Not least because it is highly likely that each new manufacturer will have different levels of competency to support the exchange of information.

However, by harnessing a digital transformation layer, organisations can overcome this complexity of data format variation between supply chain connections.

Whether the manufacturer uses scanned documents, CSV extracts, PDF files or EDI, the digital transformation layer simplifies processing by ensuring the recipient organisation can exchange reliable information with their manufacturers in a standardised format. This can be seen in the figure below:

Figure 2. Digital transformation layer for effective supply chain management



Reducing the onboarding timeframe

The other critical factor is the speed of onboarding new connections. Research carried out by Transalis[7] found that it takes an average of two months to onboard a local supplier. However, with a suitable onboarding plan in place, this timeframe can be drastically reduced. Transalis offers two viable options in onboarding management:

The first, as outlined in a recent case study[6] leverages the flexibility of APIs. Transalis worked with the client, who needed to onboard 15 platform integrations and over 300 customers within a 90-day window. For projects of this scale, it is imperative to have a clear onboarding strategy in place where all the necessary stakeholders are actively engaged.

Transalis delivered on this objective, with the final solution pushed live after just 9 weeks.

Since then, the client has entrusted Transalis to onboard an additional 100+ customers and has been named their provider of choice for all future digital transformation projects.

Another, equally effective option is a self-serve EDI model. Here, the manufacturer can set up their own connection via a white-label website powered by Transalis eDI Instant™. By automating the EDI configuration process, we have reduced the typical onboarding time in the industry from months to as little as 24 hours for most connections. This ensures all of your manufacturers are connected in the same way and can consistently communicate accurate digitised information with you 24/7.

Managing Costs

Switching from a small selection of larger-scale manufacturers to a higher volume of smaller-scale manufacturers has the potential risk of increasing operational costs. As highlighted, implementing an onboarding strategy that can manage many different formats reduces supply-chain complexity.

Furthermore, as a single SaaS service, this approach minimises the investment required for hardware and multiple applications.

3. Maximising productivity with data visibility

The main compromise of micro-manufacturing is smaller capacity. Therefore coordinating the product output to match the consumer demand becomes a critical requirement for this operation to run smoothly.

Therefore the key to a successful localised supply chain is to digitise the messaging between all relevant parties. In fact, the digitisation of information needs to extend to a broader set of data, such as stock and sales reports.

For example, Transalis use EDI to automatically capture and combine different data sets and ensures visibility of this information across the supply chain to support agile order fulfilment.

This includes sales reports from retailers, warehouse stock levels, and capacity leads from manufacturers. This data flow is visualised in the infographic below:

Figure 3. Exchange of a broader set of messages

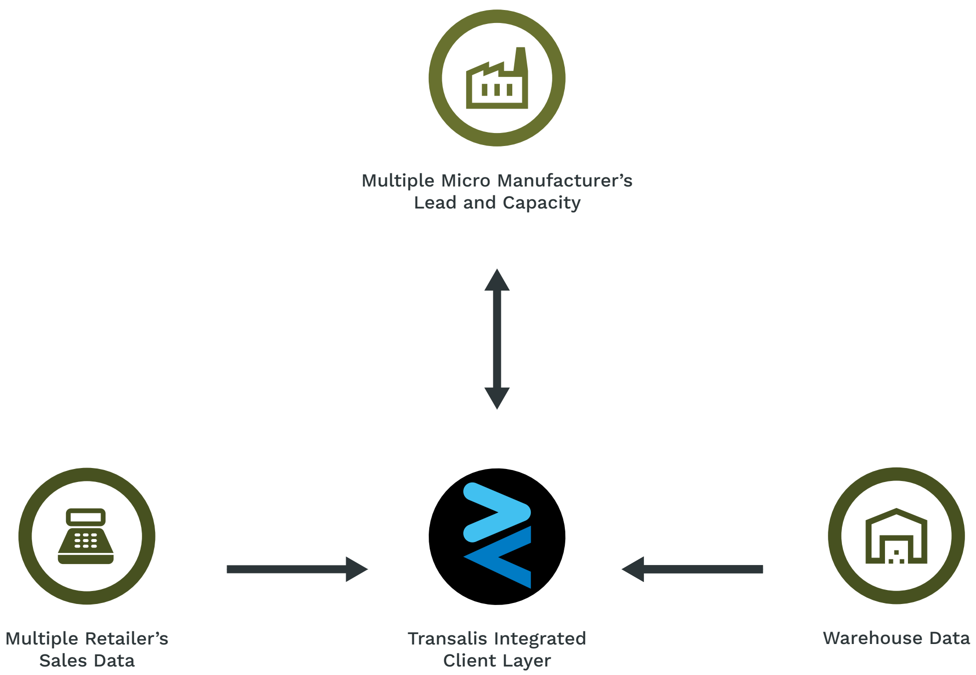
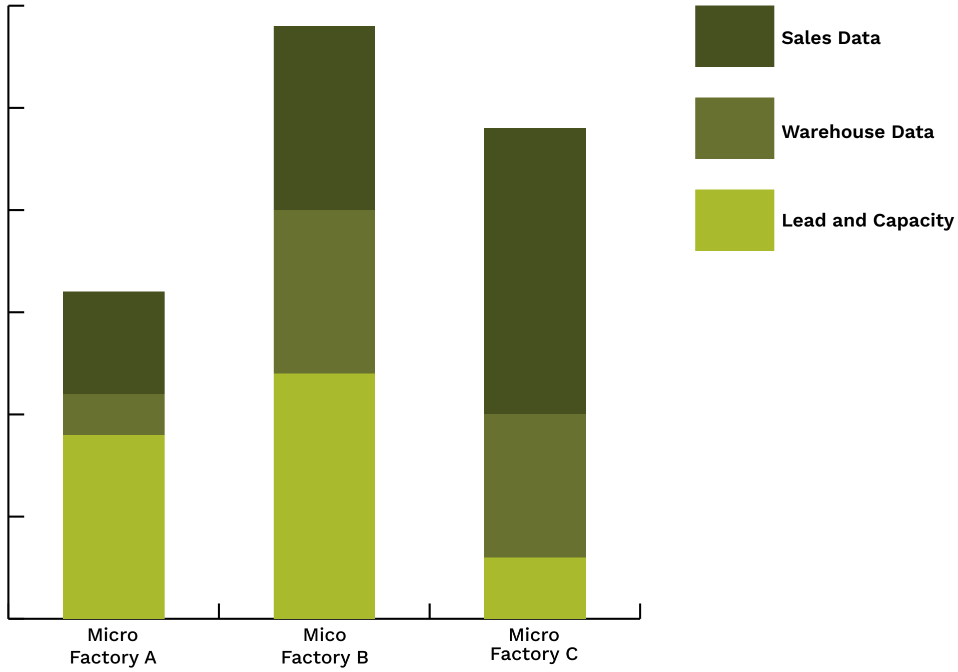


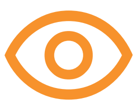
Figure 4. Example of business data unification



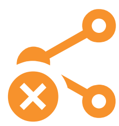
As demonstrated in the graph above, all of these sources of information can be combined to accurately predict future consumer demand and plan additional production ahead of sales spikes. For example, depending on existing stock levels (Warehouse Data) and manufacturer capacity (Lead and Capacity), production for additional stock to meet the required demand (Sales Data) can be efficiently split across the network of micro-manufacturers.

Overall, when this digital transformation layer is leveraged correctly, organisations will be able to analyse the data, anticipate sales peaks and enact a dynamic demand planning strategy with their micro-manufacturer network.

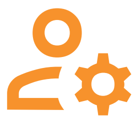
This solution improves the agility and effectiveness of the supply chain by:



Increasing visibility for all parties involved



Further controlling costs – as opposed to managing multiple applications for each endpoint



Removing siloed processes

Conclusion

As outlined in the previous three chapters of this report, a shorter, broader, and greener supply chain offers several key benefits:

- Reduces resource consumption and saves on costs
- Spreads the risk of manufacturing or supplier delays
- Increases consumers satisfaction (B2C or B2B) with their ethical purchases

Unification is at the heart of making this strategy work. Namely, a single digital transformation layer that can be operational in a matter of weeks.

This solution unifies data by converting different file types into a single structured format and inputs it into your chosen system(s).

Transalis offer a range of services that supports the unification and universal visibility of data for any size operation. With tried and tested strategies, these projects have the right resources from the outset to ensure rapid and effective deployment.

Cut emissions, reduce business spend, and increase efficiency with Transalis digital transformation solutions

Find out how a greener and shorter supply chain can result in robust scalable and cost-effective business processes.

Explore EDI Integrations

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[1] Forrester. 2022. *European Predictions 2023: Highlights*.

[2] FSB. 2021. *How to reduce waste by going digital*.

[3] Adobe. 2022. *Time, money and environmental impact: the true cost of unsustainable working*.

[4] Gartner. 2019. *Forecast: Enterprise Print Spending, Worldwide, 2017-2023, 3Q19 Update*.

[5] Transalis. 2021. *Transalis uses AI to transform SMEG's order processing*.

[6] Transalis. 2023. *Case study: Stationary supplier enhances market reach with EDI middleware*.

[7] Transalis. 2021. *New research: Is EDI addressing the challenges of 21st century commerce?*.