



Pharma's path to supply chain transparency

Pharma supply chain leaders need to harness enterprise and external event data using modern technology such as IoT to present a value-based business case

Inside this report:

- Strategies to boost pharma's business case for supply chain transparency.
- How to advance pharma's digital economy with supply chain transparency solutions.
- Industry analysis of pharma's supply chain operational efficiency and service excellence.

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Business risks of not implementing supply chain transparency

Globally, pharmaceutical supply chains vary in efficiency, transparency, and resiliency. Despite wider awareness that enhanced supply chain transparency is needed to build further resiliency of the pharma supply chain, pharma logistics leaders often struggle to build business cases for adopting supply chain transparency solutions, particularly with constrained budgets.

Dr Aniekan Essien, Information Systems Lecturer at the University of Sussex Business School, says that poor near-term returns on investment and losing competitive advantage by divulging too much information are some of the main obstacles for building a successful business case around supply chain transparency. He cited compatibility: "Where there are multi-echelon supply chain structures, achieving transparency requires compatibility across multiple platforms and information systems."

Business cases built around poor data practices and a narrow definition of transparency hold pharma companies back. Consensus on defining end-to-end visibility varies; what is good enough for the transport team may not be good enough for customer service or quality teams. Broadly, visibility is the disclosure of all relevant information to all stakeholders, including manufacturers, wholesalers, distributors, pharmacies,

hospitals, other medical facilities, and patients. Strong supply chain transparency ensures safe delivery, reduces product discards and other unnecessary costs. For example, successfully intervening to save a shipment from a temperature excursion or using a shipping lane that is more cost-effective without negatively impacting customer service levels.

Nearly 60 per cent of respondents in the [Pharma Logistics IQ-TransVoyant survey](#) invest in end-to-end visibility and almost 40 per cent have fully operational solutions. This contrasts with other survey responses, however, where respondents cited challenges such as a lack of willingness to spend money; 39 per cent said budget constraints were the main challenge and 25 per cent faced obstacles in building a business case ([figure one](#)). Investment in end-to-end visibility often tends to be low, making it hard to achieve true, real-time, global supply chain transparency with strong live situational awareness.

James Butera, Vice-President of Customer Growth at TransVoyant, says that the focus for a business case should be on "service first, cost and sales later" and advises building the case on a variety of use cases that need to be satisfied by making the investment in supply chain visibility.

"Service first, cost and sales later."

James Butera

Vice-President of Customer Growth at TransVoyant

Visibility across the entire supply chain – from inbound materials to customer door – is affected by poor situational awareness regarding delays and disruption. This was the most-cited use case for supply chain visibility solutions among survey respondents (70 per cent), along with measuring logistics service provider (LSP) performance (55 per cent), quality (55 per cent), lane performance (53 per cent), freight spend insights (52 per cent), and procedure compliance (48 per cent). More companies rely on regional operations teams and/or multiple third-party logistics (3PL) partners for global deliveries instead of more robust fourth-party logistics (4PL) strategies, all of which are improved by transparency.

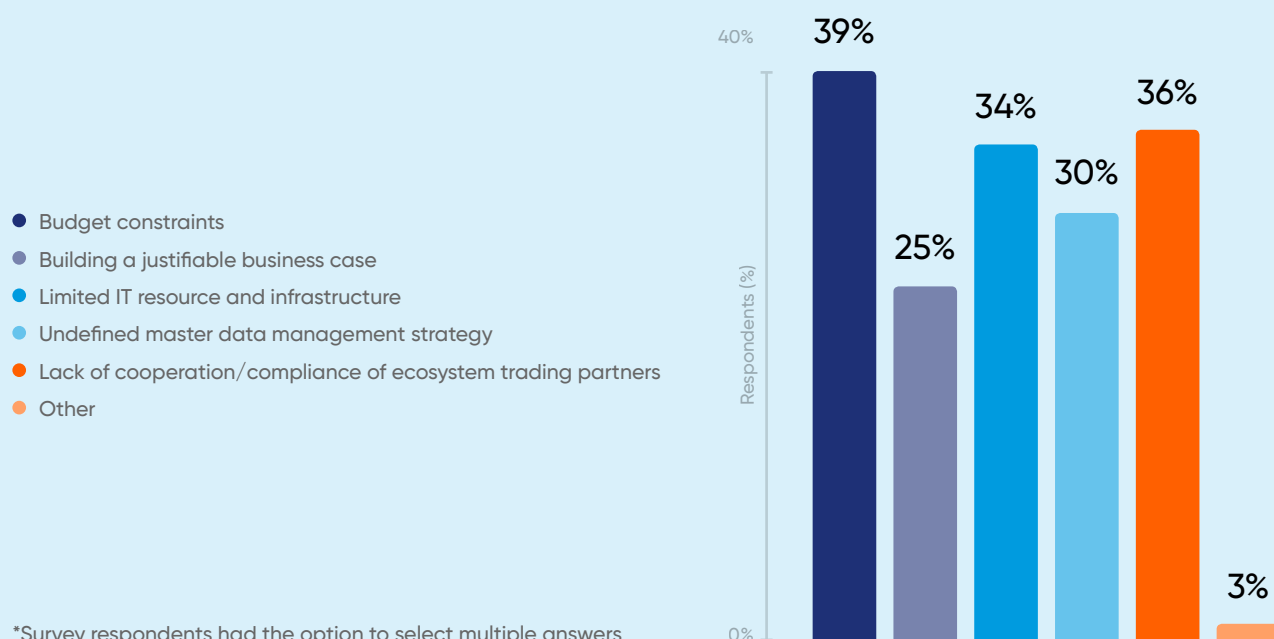
Poor transparency compounded by budget constraints makes preparing business cases difficult. Few survey respondents reported adequate funding to support genuine end-to-end visibility; a lack of live situational data hampers actionable intelligence to support use cases. Cumbersome data silos, poor trading partner integration, and limited IT and data engineering resources also impede management support.

In this report *Pharma Logistics IQ* – in collaboration with TransVoyant – dives into how to build an efficient business case around the implementation of supply chain transparency solutions to improve end-to-end visibility of global supply chain networks.



FIGURE ONE

What are the most dominant challenges for improving supply chain transparency in pharma?*



Benefits of end-to-end transparency solutions

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When the Ever Given container ship was stranded in the Suez Canal in March 2021, the importance of access to real-time information along supply chains was emphasized, particularly in unforeseen circumstances. Educating the industry on the potential of supply chain visibility solutions requires logistics leaders to explain how to leverage the potential of available technologies, especially regarding data.

TransVoyant's Butera says: "Depending on the data you are collecting, you can go into sustainability, global security, diverted goods, or monitoring the condition and the quality of the products that are being shipped to get cost and performance measurements across the trading partner ecosystem."

He calls for "an elegant way of harnessing all that information".

"I do not think companies are thinking about harnessing all the supply chain offers in the data it emits. They are taking a common use case-driven approach ... that approach is fine but it is a drop in the bucket – if you took a more holistic, comprehensive approach, you can address a variety of use cases."

Cost-effectiveness is the obvious benefit of end-to-end transparency solutions, such as managing services, costs, and insurability. For pharma, timeliness is crucial especially in cold chains. Transportation management solutions, particularly for temperature-sensitive biologics and vaccines, reduce waste and enhance efficiency planning. For example, TransVoyant and Tive have collaborated to deliver live supply chain situational awareness via the [Open Visibility Network](#) with live predictive insights, accurate delivery time quotes and real-time data streams that can be accessed by all relevant users.

When true lead times and variances are readily available, optimizing inventory, labor, capacity, and service is easier. Bayer, for example, uses cloud deployment technology to reduce inventory costs and efficiently deploy workers according to skills. Cloud technology allows third parties to access data securely. Sharing information at every stage between all partners improves access and

collaboration – a culture of cooperation enhanced by transparency improves service.

Embracing the digital economy is vital. Supply chain visibility solutions integrate innovations such as the Internet of Things (IoT), blockchain (distributed digital ledgers to transparently record all transactions along supply chains), and digital automation.

The *Pharma Logistics IQ*-TransVoyant survey found that many companies are already using IoT technology for data-logging (70 per cent), temperature analysis (68 per cent), and real-time location analysis (53 per cent). The functions most commonly tested for IoT implementation are analysis from damage (22 per cent) and product theft (19 per cent), and the functions "strongly considered" for implementation include product theft (40 per cent), risk analysis from damage (40 per cent), and product tampering (41 per cent)- [see figure two](#).

Technology enhances process efficiency, providing proactive, predictive risk mitigation, and identifies improvements for competitive advantage. [This is achieved in different ways](#), such as using smart labels and RFID technology to continuously update users on the progress of shipments, smart sensors to detect environmental changes for temperature-sensitive products and providing a 360-degree report at the end of a delivery so further improvements can be identified and made.

"Supply chain transparency can be built and maintained by adopting cutting-edge technology. Emerging technologies such as IoT and blockchain are rapidly becoming disruptive technologies that have transformed the nature and operations of supply chains," said Essien. "Blockchain can enhance supply chain transparency, traceability, and visibility, and help firms evaluate and mitigate supply chain risks by providing an immutable medium of tracking and tracing product origins and processes."

According to the [TransVoyant blog, Blockchain the newest technology in supply](#), blockchain is only one part of the solution: "Blockchain does not offer real-time visibility of the movement of goods between nodes within

a supply chain, nor does it offer visibility of or predictions related to the risks surrounding supply chains, either for assets at rest or in motion.”

Cloud technology allows secure collaboration; business cases must address security concerns so companies can balance maintaining corporate confidentiality with ensuring all stakeholders can access data for timely decisions. IoT, meanwhile, is valuable for cold chain transparency where automatic temperature monitoring offers real-time data for quick action.

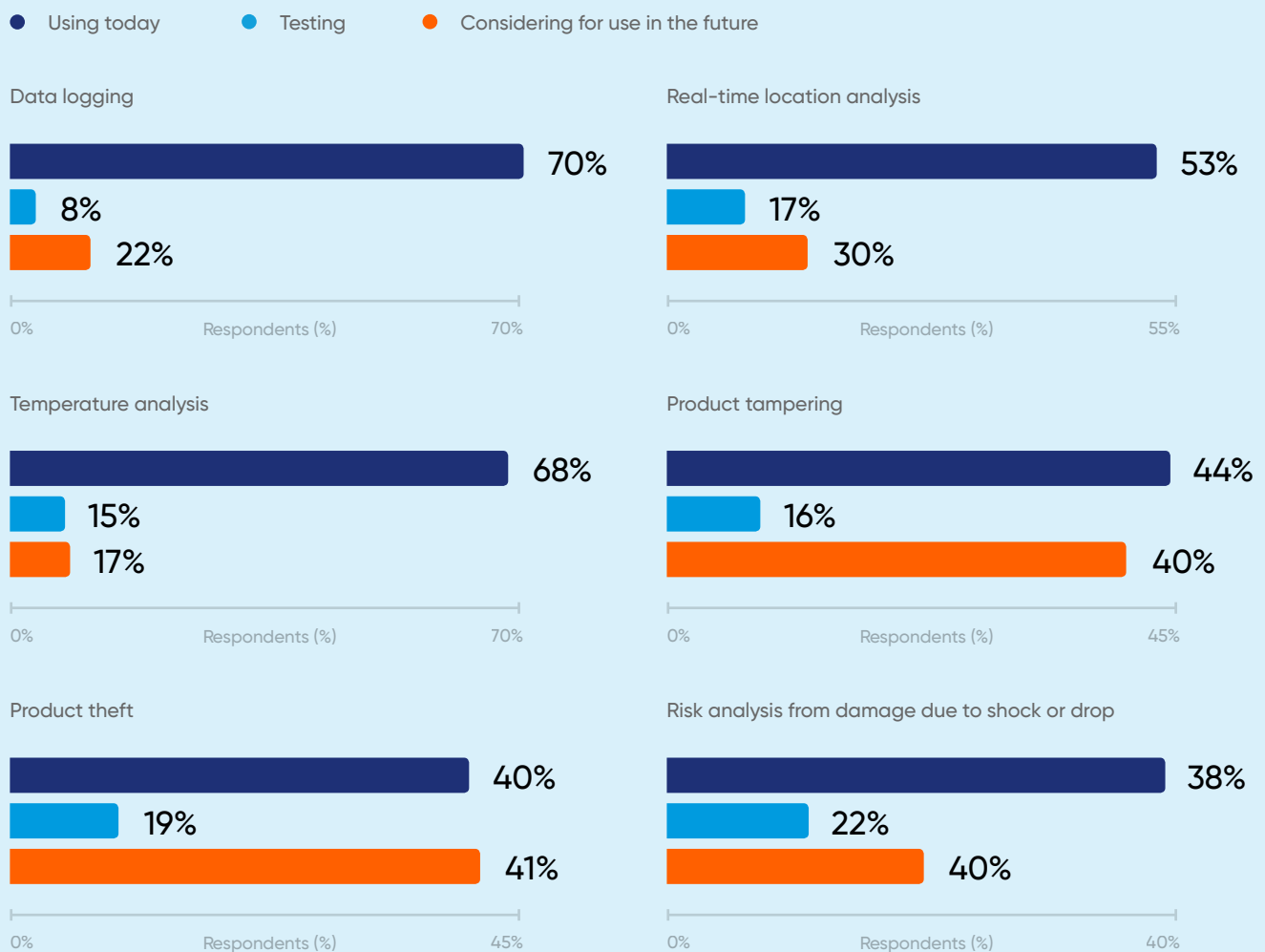
Transparent supply chains also help pharma meet sustainability goals. AstraZeneca cites transparency as one of its top three responsible supply chain priorities,

alongside resiliency and inclusivity. According to its [2020 sustainability report](#), sustainability practices are verified along the entire supply chain. Targets include 75 per cent of all critical manufacturing partners being rated as gold, silver or bronze performers according to its [Sustainability partner guide and framework](#). In 2020, this was 63 per cent.

Pascal Soriot, CEO of AstraZeneca, says: “Climate change is an urgent threat to public health, the environment and the sustainability of the global economy. Since 2015, we have reduced our carbon emissions from operations by almost a third and our water consumption by almost one fifth. But now is the time to act even faster and redouble our efforts.”

FIGURE TWO

How pharma companies are currently using IoT enabled technology for supply chain visibility



Strategies for boosting the business case

Promoting the benefits of technology investment aids business case development, but it is important to outline clear strategies for implementing technology. The *Pharma Logistics IQ-TransVoyant* survey found that 62 per cent of respondents have an annual budget for supply chain visibility spending of up to US\$100,000, 10 per cent can spend up to \$50m, 13 per cent can spend more than \$1m, and only 1 per cent have budgets of more than \$5m. Business cases need to represent good value and return on investment.

Data standards need to be defined and networks strengthened. Supply chain technology focuses on real-time data access but it needs to be relevant with timely data supplied via reliable networks. A business case that focuses on easy, uncomplicated access to data is useful. Merck Serono has successfully **integrated two supply chains** – traditional pharmaceuticals and biotechnology-based pharmaceuticals – so inventories for both chains are available at the right time and in the right locations.

Didier Dayen, Merck Serono's former Head of Supply Chain Process, said the company uses a solution that provides "one synchronized view of demand." This single-tool approach for the demand data repository allows the company "to easily follow an aligned process across the organization."

Data must be easily shared, such as upgrading signals for track-and-trace. A business case needs a solution with a connected common operating picture (COP), utilizing available and derived data to automate insights, exceptions, and predictions for continuous improvement.

Opaque supply chains mean pricing can be obscured and markets manipulated through practices such as spread pricing. A **2018 Bloomberg report** found that CVS Health was profiteering via its US prescription drugs administration business, which administers prescription drugs benefits for corporate and government clients. Prescriptions for prisoners were purchased by a local pharmacist who dispensed them to the Iowa's Wapello County Jail. CVS reimbursed the pharmacy \$5.73 for an antipsychotic drug, but CVS billed the county \$198.22, a \$192.49 profit per prescription. This micro-example's broader lesson is that supply chains **need transparent pricing at every stage to build trust**.

Just as supply chain visibility helps AstraZeneca meet sustainability goals, cultural change goals can be met through transparency.

The **KPMG Survey of sustainability reporting 2020** concluded that: "Momentum has grown behind increased coalescence of the major non-financial

"Now is the time to act faster and redouble efforts."

Pascal Soriot

CEO of AstraZeneca

reporting standards. Investors have started to join the discussion and reporting businesses have expressed frustration over the lack of harmonized standards for non-financial reporting.” A transparent supply chain with accurate, real-time data helps meet CSR goals and attract investors.

Reputation management especially concerns manufacturers of branded pharmaceuticals and should be included in business cases. TransVoyant’s Butera says that while generic manufacturers likely plan for discards, excessive discards lead to “significant write-downs and significant loss of revenue, not to mention the patient outcomes” for branded manufacturers.

“Branded pharma tends to have a little more reputational risk on the line – the products can be expensive, life-changing, life-saving,” he adds.

Case studies give business cases real examples of transparency-enhancing solutions that use data to automate insights, manage expectations, make predictions, and continuously improve.

One TransVoyant customer, a top-three global manufacturer of branded pharmaceuticals, saved 650,000 doses of vaccines and oncology treatments with an estimated production value of \$30m. Prior to implementing TransVoyant’s solutions, different approaches fell short because of issues with people, processes, and data.

The **successful solution** comprised a cloud-based Software-as-a-Service (SaaS) application and proactive intervention services. The customer independently monitors, measures, and assesses global network performance, holds trading partners accountable, leverages IoT technology, uses lower-cost providers, and innovates at their own pace. During the pandemic, the software was piloted, monitoring the life and condition of global orders – nine interventions expedited the delivery of 650,000 doses, preventing delays. During the Suez Canal incident, the SaaS system identified affected in-transit orders and determined corrective action, such as rebooking shipments scheduled to use the canal.



Another TransVoyant customer, the largest North American distributor of pharmaceutical devices and supplies, uses digital transformation technology to plan, orchestrate, and measure 250,000 final-mile daily deliveries across a network of LSPs, including more than 30 couriers. After unsuccessfully trialing commercial off-the-shelf solutions, the customer invested in TransVoyant’s **Continuous Decision Intelligence platform**, a build-and-buy approach. Solutions were tailored to their way of working while lowering project and financial risk. The cloud-based SaaS solution provides actionable intelligence to sales, customer service, transportation teams, and LSPs, and maintains application program interface-based integrations with partner systems. It continuously monitors data-quality management, creating a single source of information for deliveries. The system develops new ways to improve performance while reducing costs.

The Covid-19 vaccine rollout required vigilance, attention to detail, and real-time performance insights. The customer found the solution highly scalable and effective in these circumstances.

Transparency is the first step to securing pharma's global supply chain

Supply chain visibility remains important for industry resilience, credibility, and financial benefits, such as reduced waste.

Paul Hudson, CEO of Sanofi, commented: "Although [Covid-19] vaccination campaigns have started around the world, the ability to get shots into arms is being limited by lower-than-expected supplies and delayed approval timelines owing to production shortages."

The **TransVoyant blog, *Live global supply chain situational awareness for life sciences***, highlights how live supply chain situational awareness via a COP is vital as increased volumes of vaccines are shipped worldwide. COP technology that provides real-time data on location, condition, security, and timeliness bolsters visibility. The health and wellbeing of individuals and large populations depend on their effectiveness. Many supply chains are more complex because of risks associated with cold chain shipping and transit security so 24/7 monitoring is essential.

In this context, investing in visibility technology ensures quality products reach patients in a timely manner. Trends and benefits of such investment are emerging, which is essential for compelling business cases. Educating senior management, including gradually introducing benefits, particularly amid skepticism, highlights the importance of using data well, and ensuring all decision-makers understand the technology.

"We do some rapid prototyping around use cases to galvanize the organization and the stakeholders around the feasibility and the business benefits," Butera says. "A crawl-walk-run approach to implementation keeps costs down. As more functionality gets rolled out, more value gets turned on – it is a combination of having a plan that starts a business case, then an implementation strategy that follows the crawl to a walk approach."

"Supply chain transparency requires that supply chain partners have full visibility, traceability and accountability of upstream activities as well as communicating this information both internally and externally," said Essien from the University of Sussex Business School. "This concept is important in industrial sectors, such as the pharmaceutical industry, where it becomes even more important to have upstream supply-chain-related information about primary ingredients, animal welfare, and child labor."

A transparent supply chain is not the end goal for pharma, but simply a medium through which affordable and sensibly priced medications can be assured. Longer-term solutions that provide connected end-to-end supply chain visibility and understanding will be part of every enterprise; however, pharma companies have a greater incentive than others due to the importance of the care and concern for the patients who use their products. Strong business cases that are patient-centric and are based on a wide range of benefits will likely gain buy-in from even the most skeptical decision-makers.

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James Butera

Vice-President of Customer Growth at TransVoyant

About TransVoyant

The leader in live supply chain transparency and situational awareness

From sensors, satellites, radar, video cameras, smartphones, machines, control systems and other IoT devices, we collect over one trillion events each day. We have been curating, analyzing and deriving this global data since 2012, giving us the largest repository of historical and real-time supply chain and risk behavior data in the world.

Our API-based data fusion and proprietary machine learning algorithms enable us to analyze these massive big data streams to

provide transparency, live situational awareness, and actionable intelligence to proactively resist and recover from supply chain delays and disruptions.

TransVoyant is purpose built to transform complex global supply chains into a competitive advantage. Our forward-leaning customers are embracing the rapidly changing digital world to improve customer service, reduce and avoid cost and look for opportunities to continuously improve.

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By joining our growing network you will be able to connect, learn and interactive with other likeminded industry professionals and keep up-to-date with industry inside advice to help you achieve your business goals.

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