Optimising delivery and accelerating net zero in logistics

Navigate to sustainable success with KPMG and Adiona

Introduction

With increasing regulatory requirements and growing consumer expectations to minimise environmental impacts, now is a crucial time for logistics providers and fleet operators to adopt sustainable supply chain practices.

Changing established processes to reduce emissions can be challenging, especially for last mile delivery – the final phase of the supply chain. Although this is the shortest part of the trip, it is also the most complex, energy-consuming, expensive and variable. Identifying and addressing inefficiencies within this stage will help reduce fuel consumption and distance travelled, enabling organisations to strengthen their commitment towards transitioning to net zero.

Solutions that assist businesses in reducing emissions and provide a clear pathway to electrification are integral to meeting compliance requirements and environmental goals. If the same solution can also lower costs, increase efficiency and enable superior service levels, it can be an invaluable contributor to a company's competitive differentiation and long-term success.

KPMG and Adiona combine supply chain and sustainability expertise with advanced technology in delivery management and logistics optimisation, to help position your business as a leader in efficiency, reliability and sustainability.

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Key challenges for the logistics industry

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SUSTAINABILITY

MEETING REGULATORY REQUIREMENTS AND PUBLIC EXPECTATIONS

The pressure to implement more sustainable supply chain practices is mounting. Not only are society's expectations around sustainability growing, but governments are also increasing their regulatory requirements for businesses to demonstrate how they are reducing their greenhouse gas (GHG) outputs. With rapid growth in consumption, organisations must meet this increased demand while also reducing their carbon footprint.

ADDRESSING SUPPLY CHAIN PRESSURES AND ECONOMIC IMPLICATIONS

Global supply chain disruptions and recent surges in inflation have created economic pressures for logistics operators. These implications challenge supply chain managers to find cost-saving measures to maintain profitability and avoid passing significant cost increases on to customers.

02

COST REDUCTION

03

RELIABILITY

PROVIDING REAL-TIME UPDATES AND MAINTAINING TRANSPARENCY

Consumers now expect faster deliveries and want accurate, real-time information on product location and estimated delivery times. This has increased demand for up-to-date transparency and advanced data analytics in logistics planning and inventory monitoring. Additionally, ongoing supply chain disruptions pose significant challenges.

01. ESG

How logistics organisations are evolving

Demonstrating sustainable business commitments

Environmental, social, and governance (ESG) reporting requirements and net zero goals are driving businesses to deliver greater sustainability and transparency. Although many companies have publicly pledged their commitment to achieving net zero, the majority lack a clear plan on how to accomplish it.

Businesses have prioritised reporting Scope 1 (direct) and Scope 2 (purchased energy) emissions, but collecting Scope 3 (indirect supply chain) emissions data is more complex, with only 31% of ASX 200 companies disclosing these in 2022[1]. Since 1 July 2024, the Australian Government has required all large corporations and financial institutions to include Scope 3 emissions in their mandatory climate reports.

A key part of Australia's climate change strategy has been the use of carbon credits, which a business earns when they offset their emissions by conducting activities that store, reduce or avoid GHG outputs. There has been some criticism over this, as carbon credits compensate for emissions rather than reduce them.

Some companies are now transitioning away from carbon credits in favour of more direct climate action. Stating that consumers are increasingly expecting businesses to take decisive measures on minimising their environmental impact, Australian telco Telstra now intends to redirect its investments from purchasing carbon credits to more meaningful sustainability initiatives, including:

– Trialling green hydrogen cells

– Installing more solar and battery solutions

– Leveraging data analytics and AI to enhance the efficiency of its network equipment.[2]

This type of commitment to adopting more sustainable practices can lead to increased profitability and a competitive edge, as consumers place greater value on companies with strong ESG practices.

[1] Climateworks Centre, 1.5°C climate goal: How does the ASX200 stack up in 2022?, December 2022

[2] Telstra, How we're evolving our climate change commitments, 14 June 2024

02.
Electric vehicles

Capitalising on a booming market

The prevalence of electric vehicles (EVs) on Australian roads is growing at an exponential rate. EV sales in Australia have approximately doubled every year since 2020, with 2023 sales reaching 98,436 – representing a 120% year-on-year increase.[3]

A challenge in using EVs for last mile logistics is ensuring an efficient journey that maximises a fleet's battery range. As more organisations invest in EVs, there is a greater need for a robust delivery management system (DMS) that can plan optimal routes to effectively manage range limits, monitor energy consumption and identify charge point locations.

Transitioning to electrification offers opportunities for logistics businesses, including:

EMISSIONS REDUCTION

Using EVs for last mile logistics can significantly lower carbon emissions and improve air quality in urban areas. With just a 5% share of EVs on the road, nitrogen dioxide concentrations can potentially be reduced by 52%.[4]

COST SAVINGS

Despite high initial costs, EVs can offer long-term savings in fuel and maintenance expenses.

TECHNOLOGICAL ADVANCEMENTS

Ongoing advancements in battery technology and vehicle design are enhancing the range and capabilities of EVs, overcoming previous limitations.

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[3]   Electric Vehicle Council, Australian Electric Vehicle Industry Recap 2023, 31 March 2024

[4]   Valeria Rizza, et al., Effects of deployment of electric vehicles on air quality in the urban area of Turin (Italy), 1 November 2021

03.
Automation

Enhancing operational efficiency

Effective automation in logistics operations enhances critical functions such as optimised routing and scheduling, while also improving resource allocation, reducing costs and ensuring timely deliveries. Opportunities for automation include:

ARTIFICIAL INTELLIGENCE (AI)

Using AI to develop route optimisation algorithms will become crucial for last mile logistics, ensuring routes and scheduled deliveries are as efficient as possible. These algorithms work by processing collected data to generate the best possible routes for delivery vehicles, considering factors such as distance, time constraints, vehicle capacity and traffic conditions.

ROBOTIC PROCESS AUTOMATION (RPA)

RPA is an advanced technology that automates repetitive service tasks previously performed by humans, such as picking, packing, palletising and labelling. RPA offers numerous benefits within supply chain management including improved efficiency, reduced costs and fewer errors. Harnessing RPA for routine tasks also allows employees to undertake more meaningful work and can increase customer satisfaction by providing greater transparency on parcel status and location with real-time notifications.

GLOBAL POSITIONING SYSTEM (GPS)

GPS navigation is now imperative when managing supply chain operations. A robust GPS system not only enables the tracking of delivery vehicles but also plays a key role in maintaining a higher level of security across fleet assets.

"The evolution of logistics automation offers numerous advantages to those who can capitalise on it. Organisations must understand the opportunities most applicable to their business, using technology to enhance visibility and improve decision-making for themselves and their customers."

PETER LIDDELL
Partner, Consulting

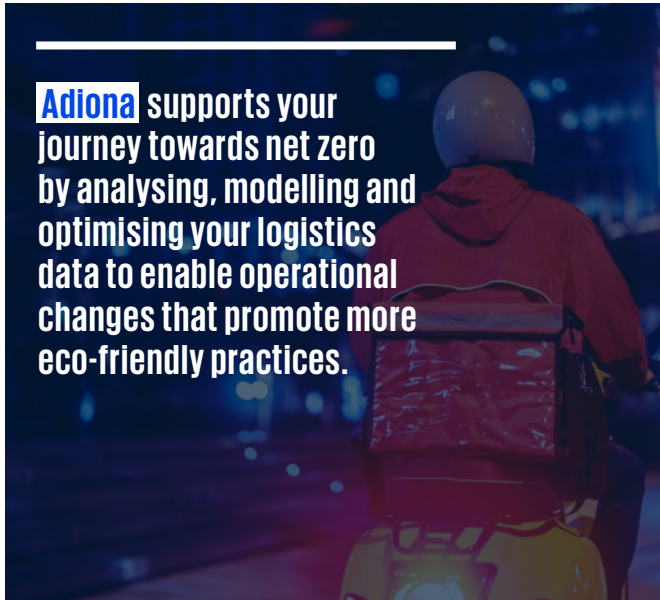# Refining operations for a greener tomorrow

KPMG and Adiona have developed a solution that enables logistics providers and fleet management businesses to harness data and machine learning, not only to meet decarbonisation and ESG targets but also to unlock economic value through optimised logistics.

By leveraging AI, advanced machine learning and real-time information, the solution enables dynamic routing, accounting for live parameters impacting your fleet and ensuring the most effective route. Using historical data to map your processes, the solution recreates delivery operations and identifies opportunities for improvement in costs, routes and fleet management.

Creating hundreds of scenarios using your data, the solution also helps you evaluate EV purchasing decisions or fleet changes before implementation and align your fleet strategy with current, seasonal and projected customer demand.

Solution benefits

– **Enhance your delivery in full, on time (DIFOT)** by replacing inefficient scheduling and routing with automated, large-scale logistical precision where every resource is optimised.

– **Drive last mile cost reduction** through optimal route planning, boosted delivery efficiency and streamlined fleet operations for a lean total cost of ownership (TCO).

– **Integrate ESG principles across your supply chain** enhancing your ability to navigate complex regulations and achieve more.

– **Transition to net zero** with a comprehensive strategy to reduce Scope 1–3 emissions. We analyse, model and transition your operations by scrutinising telematics and designing EV-integrated networks.

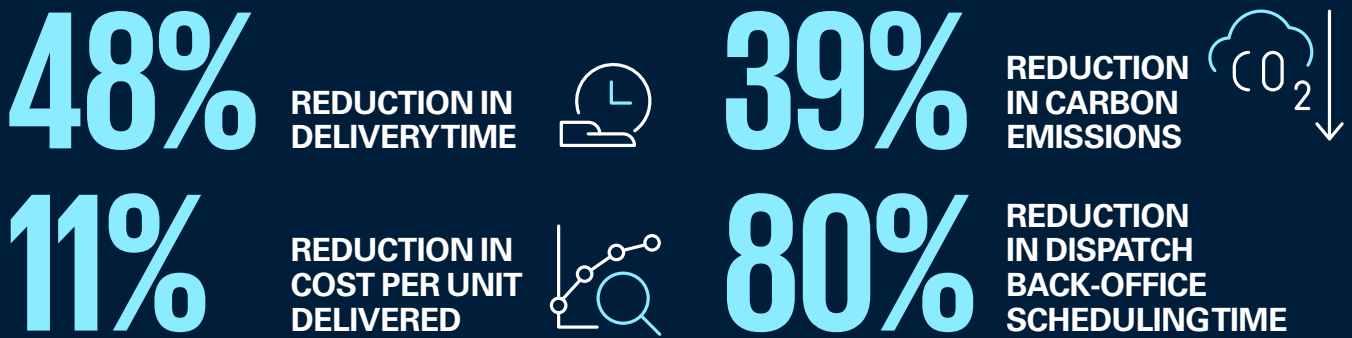– **Develop a path to electrification** with real emissions measurement and TCO optimisation.

Adiona supports your journey towards net zero by analysing, modelling and optimising your logistics data to enable operational changes that promote more eco-friendly practices.

KPMG's ESG specialists help you strategically integrate sustainability principles into your supply chain, manage complex regulations and operate in a more environmentally responsible and efficient manner.

Transformative outcomes

By implementing strategies and actions tailored to your specific operational needs, indicative outcomes include:

48% REDUCTION IN DELIVERY TIME

39% REDUCTION IN CARBON EMISSIONS

11% REDUCTION IN COST PER UNIT DELIVERED

80% REDUCTION IN DISPATCH BACK-OFFICE SCHEDULING TIME

EMISSIONS ACROSS SCOPES 1–3 CAN BE REDUCED BY:

CONDUCTING ANALYSIS OF FLEET TELEMATICS, EMISSIONS AND FUELLING INFRASTRUCTURE

MODELLING PROSPECTIVE NETWORKS USING AN EV OR MIXED FLEET TO REDUCE CARBON EMISSIONS AND COSTS OF ACHIEVING NET ZERO GOALS

LAST MILE COSTS AND TCO CAN BE REDUCED BY:

IDENTIFYING OPPORTUNITIES FOR IMPROVEMENT ACROSS COSTS, ROUTES, DELIVERY CAPACITY AND FLEET MANAGEMENT

CALCULATING TCO AND PROJECTING OPTIMISED CAPITAL EXPENDITURE, OPERATING EXPENSES AND SERVICE LEVELS

RELIABILITY AND DIFOT CAN BE IMPROVED BY:

DETECTING INEFFICIENT SCHEDULING, ROUTING, UTILISATION, CONSOLIDATION AND REVERSE LOGISTICS

IMPLEMENTING AUTOMATIC OPTIMISATION OF LOGISTICS ROUTES ON A LARGE SCALE

Case study:
a partnership unlocking extensive benefits

KPMG and Adiona supported a large Australian telco to simulate an optimised transport and logistics network, delivering environmental, operational and cost benefits.

The telco's five distribution centres provide sensitive and high-value freight transport services across Australia. With its drivers covering nearly 7 million kilometres annually, inefficient logistics operations were causing multiple consignment journeys to the same postcode.

The telco wanted to simulate shipments based on expected demand to identify Scope 3 emissions and transport cost reduction opportunities. To achieve this, we used Adiona's software and AI engine to:

- Source and enter relevant data
- Simulate operations and networks
- Optimise routes and networks
- Create projection models.

By modelling an optimised scenario based on weekly consolidated shipments from each distribution centre with smart routing, we calculated significant improvements, including:

39% (~234.4 tonnes) reduction in carbon emissions

61% (~$1.36 million) reduction in costs

49% (~902 kilometres) reduction in mileage

55% (~968 trips) reduction in the number of journeys.

Further incremental optimisation opportunities were identified, including:

– Distribution centre dispatch point reviews

– Third-party logistics provider selection.

Planning and implementation

Leveraging our expertise in logistics and supply chain management and providing guidance on evolving ESG requirements and consumer demands, KPMG helps you integrate this technology into your business, embed operational procedures, comply with regulations and align with public values.

Two-phase delivery model

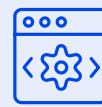### PHASE ONE – PLANNING

Proof of concept

We undertake rigorous planning to identify the key sustainability and efficiency opportunities within your organisation and estimate the potential reductions in costs and emissions. We customise the solution to fit your operations through:

DATA MODELLING

BASELINE CREATION

SCENARIO OPTIMISATION

PHASE TWO – IMPLEMENTATION OPTIONS

Software as a Service

We equip your logistics team with Adiona software to continuously unlock its benefits, empowering them to use the software with confidence and efficiency.

Inclusions:
- Adiona API integration
- Train the trainer
- Deployment
- Hypercare

Custom implementation

We help you determine the best implementation model for your business with on-premises or off-premises data hosting options.

Inclusions:
- Adiona API integration
- Service selection
- Knowledge transfer
- Governance structure development
- Continuous service
- Performance review and ongoing improvement

Driving logistics forward with KPMG

KPMG has established expertise in supporting organisations across the Australian logistics industry. Some of our collaborations are outlined below.

SUPPLY CHAIN STRATEGIC REVIEW

A postal provider required a nationwide organisational and operational evaluation of its supply chain function.

Solution

– Complete strategic review of procurement processes.

– Evaluate the contract management practices of subcontractors.

– Assess procedures to source transport service providers.

Outcome

– $35 million in long-term cost savings.

– $6 million in quick win savings.

– End-to-end view of client logistics developed.

LOGISTICS OPTIMISATION

A large truck manufacturer was struggling to deliver products to customers at competitive prices while generating sustainable returns.

Solution

– Redefine inventory policies to reduce lead-time gap and improve logistics capability.

– Improve value chain process and realign existing business systems.

– Introduce new technology to support strategic inventory decisions.

– Train staff in best practice inventory management techniques.

Outcome

– 53.1% inventory reduction.

– >100% revenue increase.

– 26.4% service level increase.

– 42% improvement in forecast accuracy.

SUPPLY CHAIN STRATEGIC REVIEW

A large retail automotive distribution company wanted to meet customer demand and reduce costs.

Solution

– Complete strategic supply chain review to identify cost reduction and process improvement opportunities.

– Conduct a baseline cost analysis of the current business set-up.

– Complete a strategic inventory risk analysis to identify risks and quantify cost reduction opportunities within the distribution network.

Outcome

– $16.5 million inventory reduction.

– 12% service level increase.

LOGISTICS TRANSFORMATION

A five-year government program required a reform of the Department's supply chain including storage, distribution and in-house vehicle maintenance.

Solution

– Develop a future logistics business model.

– Analyse the Department's inventory and asset policy.

– Define the future vehicle maintenance strategy.

– Identify changes to existing processes to create and sustain improved supply chain capabilities.

Outcome

– Enhanced logistics capability.

– Improved storage, distribution and repair capability.

– Reduced costs and improved service levels.

Contact us

To learn more about how KPMG and Adiona can help you transform your logistics business to optimise operations, lower costs and improve sustainability, contact our team.

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