TRANSPORT CANADA
PACT SCREENING PLATFORM
CASE SUMMARY

This Use Case will outline the Transport Canada PACT Screening Platform, a Modern Data Platform and data-driven analytics project within the public sector

BACKGROUND

Transport Canada is the federal government department responsible for regulating and monitoring the safety, security and efficiency of Canada's national transportation network. As such, risk assessment and mitigation management are a large and complex part of its role. For its Pre-load Air Cargo Targeting (PACT) team, this means reviewing tens of thousands of cargo shipment messages a year. Like many organizations, PACT was finding traditional methods of analyzing such large quantities of data burdensome. At the time, the team was relying on a combination of slow legacy systems and manual processes. It was time consuming and labour intensive.

Transport Canada then asked a very forward-thinking question: How could they leverage "disruptive technology to solve a common problem — improving risk-based oversight?"

For Lixar, a premier data & AI company, the answer was simple: Modernizing the process through automation and AI would be the key factor in enabling the PACT team to work better and more efficiently.

In any industry, when we rely on old technologies and high levels of manual labour, we open ourselves up to more potential for error and slower turnaround times. As the world becomes more and more data-driven, it has become necessary to modernize the way we collect, analyze, and share data. Automation and AI helps people, including experts and analysts, get meaningful insights quicker, with more accuracy, and more efficiency.

When Transport Canada engaged Lixar, we were asked to create a risk-based oversight program, for a more efficient and more effective, screening process that would make our transportation system safer for all Canadians. With this in mind, we set out to prove the value of having a strong data platform, backed by strong data expertise. The project was a success. We developed a secure, cloud-based analytics system that streamlines the entire PACT process.
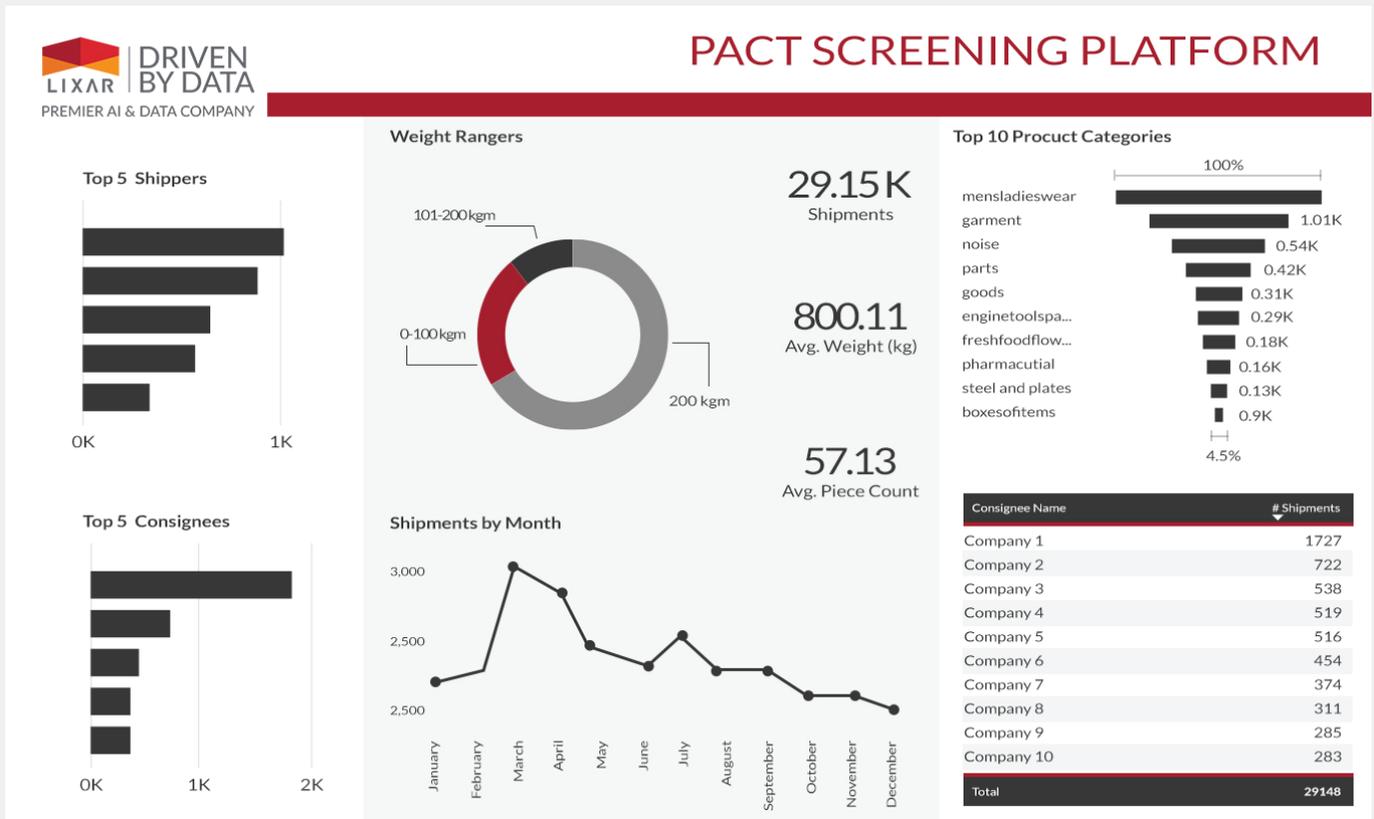
KEY RESULTS

Using our 20+ years of data experience, Lixar delivered a product that 1) **automated data processing** with modern, leading-edge tools; 2) greatly **increased the number of assessments** that could be processed in a given amount of time, and; 3) saved thousands of work-hours and **reduced hundreds of hours of data gathering for reports to a mere one minute** of filtering data in a visualization dashboard.

SOLUTION OVERVIEW

The PACT Screening Platform is a scalable, secure, cloud-based data analytics solution that leverages AI to automate assessments and provide near real-time advanced reporting on an interactive visualization dashboard.

Leveraging our unique **Hero**Path data pipeline, we combined natural language process (NLP) techniques with data transformations that feed an AI system, allowing the platform to process messages in a fraction of a second. Data is collected, analyzed, and assessed, and results are displayed in a user-friendly dashboard, designed by our data visualization experts. It also includes a status for each item and drill-down capability for more advanced insights.

> *Knowledge that used to come from reports that could take up to three weeks to complete, is now at the teams' fingertips in less than a minute.*

PACT SCREENING PLATFORM

LIXAR | DRIVEN BY DATA — PREMIER AI & DATA COMPANY

Top 5 Shippers

Weight Rangers

101-200kgm

0-100kgm

200 kgm

29.15 K Shipments

800.11 Avg. Weight (kg)

57.13 Avg. Piece Count

Top 10 Procuct Categories

Category	Value
mensladieswear	100%
garment	1.01K
noise	0.54K
parts	0.42K
goods	0.31K
enginetoolspa...	0.29K
freshfoodflow...	0.18K
pharmacutial	0.16K
steel and plates	0.13K
boxesofitems	0.9K
	4.5%

Top 5 Consignees

Shipments by Month

Consignee Name	# Shipments
Company 1	1727
Company 2	722
Company 3	538
Company 4	519
Company 5	516
Company 6	454
Company 7	374
Company 8	311
Company 9	285
Company 10	283
Total	**29148**

THE OUTCOMES PROVED IMMEDIATE VALUE:

Saved thousands of work-hours by allowing for timely and proactive analysis of shipment data

Leveraged real-time assessments on any shipment data received

Allowed for an expanded number of target shipments from more carriers

Helped to support its security outcomes

HOW IT WORKS | **Hero**Path

To ensure the PACT Screening Platform was flexible, secure and surpassed all the comprehensive compliance requirements, Lixar leveraged its Microsoft-fueled, award-winning data platform, **Hero**Path.

HeroPath is a fully managed, cloud-based, modern data platform. Its scalability and flexibility for today and tomorrow allows you to optimize every step of your data journey, fueled by best-in-class Microsoft components, that can be customized to meet your specific needs. Our unique approach ensures that we understand your goals and help you achieve them by: 1) ingesting the right data; 2) transforming it using the right components, and 3) allowing you to engage with it through interactive visualizations. Moreover, our accelerated infrastructure means your pipeline can be ready in a day, rather than weeks or months.

When it comes to the PACT solution and its technical breakdown, Ingestion, Transformation, and Engagement are key.

TECHNICAL BREAKDOWN

1. Ingestion

Ingestion enables data providers to easily and securely integrate and submit data to the platform, parses incoming items and persists to storage. In this stage, we use **Event Hub**, **Data Factory**, and **Databricks**.

2. Transformation

Transformation of the raw data into curated data makes it usable for other downstream applications; however, original items remain accessible. Here, we're using **Blob Storage** for raw data and **Cosmos D**B for curated data, which will then be analyzed by the **AI model**.

3. Engagement

Engagement is all about data visualization, a way to display the data in an interactive and user-friendly format, in a place where additional metadata can be stored and linked with the original message. In this final stage, we use **SQL Database**, at which point messages are assigned a status. Finally, results are pulled in by **PowerBI** and displayed on the Dashboard.

FEATURES & BENEFITS

Automated Analytics	No more relying on error-prone or manual processes to assess items. Instead, ML/AI ensures that analysis is both streamlined and trustworthy
Data Visualization	Get the insights you need at a glance
Advanced Reporting	Interact with your data using drill down capabilities that will get you the answers you need in less than a minute
Secure Login	Azure Active Directory ensures that your data is both accessible and secure, even within your organization
Continuous Integration and Automated Deployments	Ensure that your data is always up-to-date and relevant, so that you can use it to make important decisions, quickly

CONCLUSION

The PACT Screening Platform enables an efficient and effective risk-based oversight program, which will contribute to a safer and more secure transportation system for all Canadians. It's a demonstration of how modernization can help people work in a world that is increasingly driven by data. As the world moves forward, organizations need to be able to adapt. Outdated systems and processes have a negative impact on peoples' performance, and hold entire organizations back. Our **Hero**Path solution is scalable and flexible, so that no matter where you are in your data journey, you can get where you need to be.

See Also:

HeroPath Offering | **Workshop** | **Blog:** *Lixar Wins the Microsoft Data Platform Modernization Impact Award*

For more information about HeroPath and our data services, please contact us at
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LIXAR

Fueled by **BDO**