Using artificial intelligence to optimize a supply chain

United Nations: Asia-Pacific Information Superhighway Steering Committee

Jake Dancyger | Element AI
We deliver cutting-edge AI software products at scale that make businesses safer, stronger and more agile.

Unlike traditional rule-based software, AI software is pattern-based and self-learning to continuously deliver strategic insights.

Our products are catered to key industries and deliver value to the Global 2000.

Our team of in-house researchers and university fellows brings the latest AI techniques to our products.

A modular approach to product development enables us to deliver industry-specific software at scale.
We deliver AI-powered products to **key industries** in which we can deliver the most value

**Automated document processing:** claims for a leading insurance firm

- **Objective:** Use AI to empower human analysts to have greater throughput when processing claims.
- **Results:** Optimized workflow by increasing automation from 14% to 45%.

**Operations orchestration:** one of the largest ports in North America

- **Objective:** Predict best time to go to the port in order to minimize wait times.
- **Results:** Reduced wait times with 2x improvement in prediction accuracy.

**Copycat goods detection:** for Fortune 200 retailer

- **Objective:** Develop a system with explainable UX for identifying copycat products.
- **Results:** Reduced time required to send legal letters from 7 months to 3 days.
Artificial Intelligence will **significantly diminish** the footprint of traditional enterprise software

**Less code and development effort is needed to develop dynamic AI models**

**AI software can manage more complexity while adapting to unforeseen variables and situations**

**AI improves prediction & forecasting leading to better decision making at scale and in real-time**
THE PROJECT
The situation today

“Should I go to the Port now?”

Web portal shows the current wait time

Portal allows truckers to be reactive
“When should I go to the Port?”

**AI task:** Forecast (predict) future wait times

<table>
<thead>
<tr>
<th>Wait time</th>
<th>40 mins</th>
<th>50 mins</th>
<th>56 mins</th>
<th>44 mins</th>
<th>38 mins</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hour of day</td>
<td>8 AM</td>
<td>9 AM</td>
<td>10 AM</td>
<td>11 AM</td>
<td>12 AM</td>
</tr>
</tbody>
</table>

Allows truckers to be proactive
Framing the AI problem

Operational data
- Time of day, day of year
- Historical wait times
- Current wait times

AI model
- Number of containers waiting for pick-up
- Scheduled boat arrivals
  etc.

Wait time forecast
- Doubled the accuracy of predicted wait times, enabling significantly better dispatching and reduced waiting
Project architecture and next steps

Activity at the Port is captured
Operational data is fed into the predictive model
Future wait time is forecasted and served by an API

Truckers and dispatchers can make better choices
TAKEAWAYS

AI brings a unique opportunity to become truly agile

AI brings but also requires a holistic approach

Existing data can be fully utilized

➢ Element AI brings state-of-the-art products to solve real problems within specific industries
Thank you