

From Digitalization to Artificial Intelligence



The Next Phase of Port Competitiveness

"There is no reason for any individual to have a computer in his home"

– Ken Olsen 1977

A respected computer engineer and founder of Digital Equipment Corporation (DEC), the second largest **business computer production company in the world.**

DEC ultimately collapsed owing to failure to adapt to the **personal computer revolution**



**Kodak (film) cameras vs Digital camera
(Kodak thought customers wanted the purity
of film. Customers wanted the speed and
versatility and ease of use of digital)**



**CD music vs online streaming
(The music industry thought customers
wanted to own music. Customers actually
wanted access to music.)**

**Customers rarely care about your process.
They care about your outcome.**

This is not a presentation about
TECHNOLOGY

“

This is a presentation about the
Business

“

We Saw This Coming



OAS | More rights
for more people



**Empresa
Nacional
Portuaria**
Gobierno de la República



CIP | Inter-American
Committee on Ports

XIII REGULAR MEETING

INTER-AMERICAN COMMITTEE ON PORTS

ROATAN, HONDURAS
JUNE 7-9, 2023



25
YEARS | **CIP**

We Saw This Coming



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25 YEARS CIP

...A.I. a “niche” topic! (they said)

The widely
reported
Global Top
Trending
Searches for
2025 were:

Rank	Search Term
1	AI/ Gemini
2	India vs England
3	Charlie Kirk
4	Club World Cup
5	India vs Australia
6	DeepSeek
7	Asia Cup
8	Iran
9	iPhone 17
10	Pakistan and India

It's already here (in Ports)...

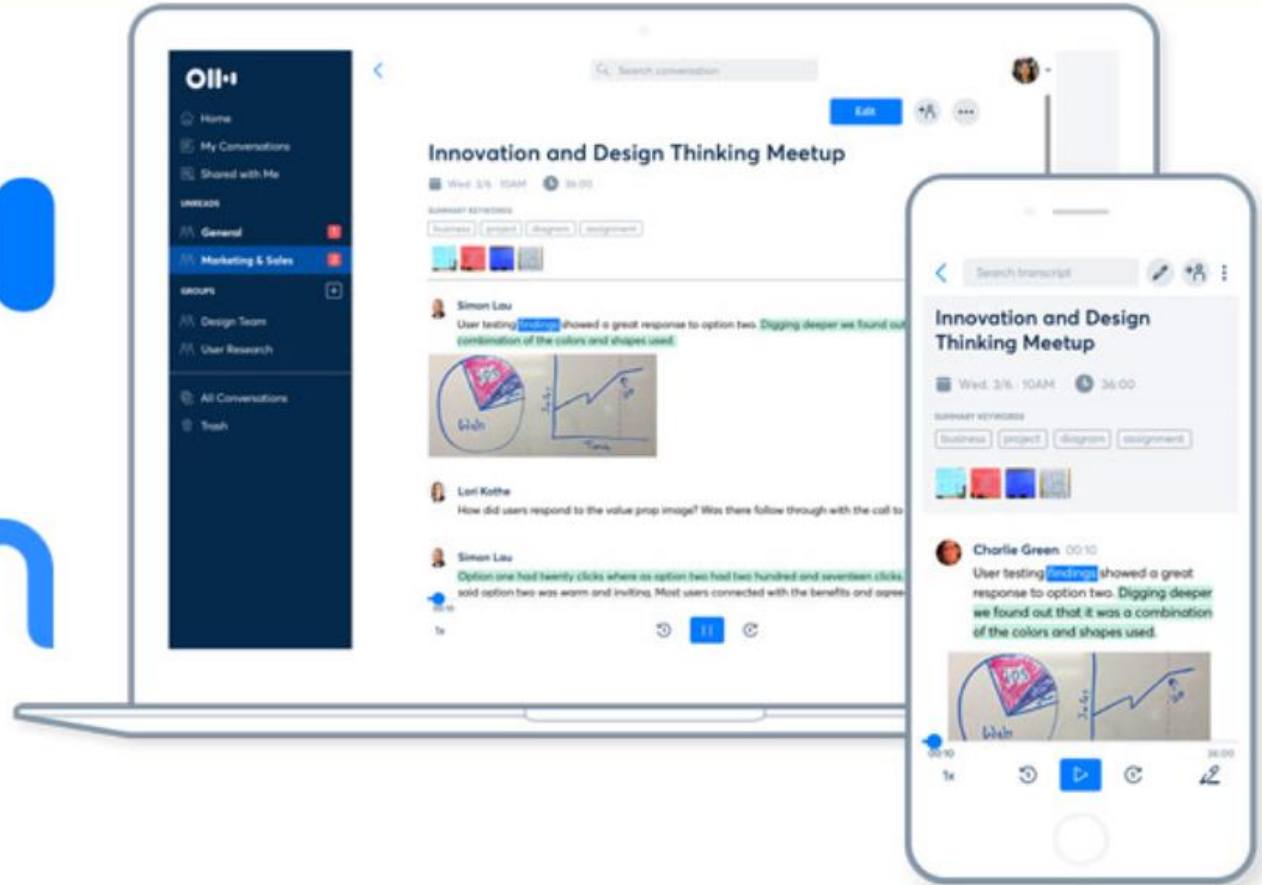


**Port Administration: AI tools
analyse documents, build workflows, automate tasks**

Here's What Changed



Auto AI transcription



Customers do not care about your process.
They care about your outcome.

AI Across Security, Terminal Operations & Safety



descript

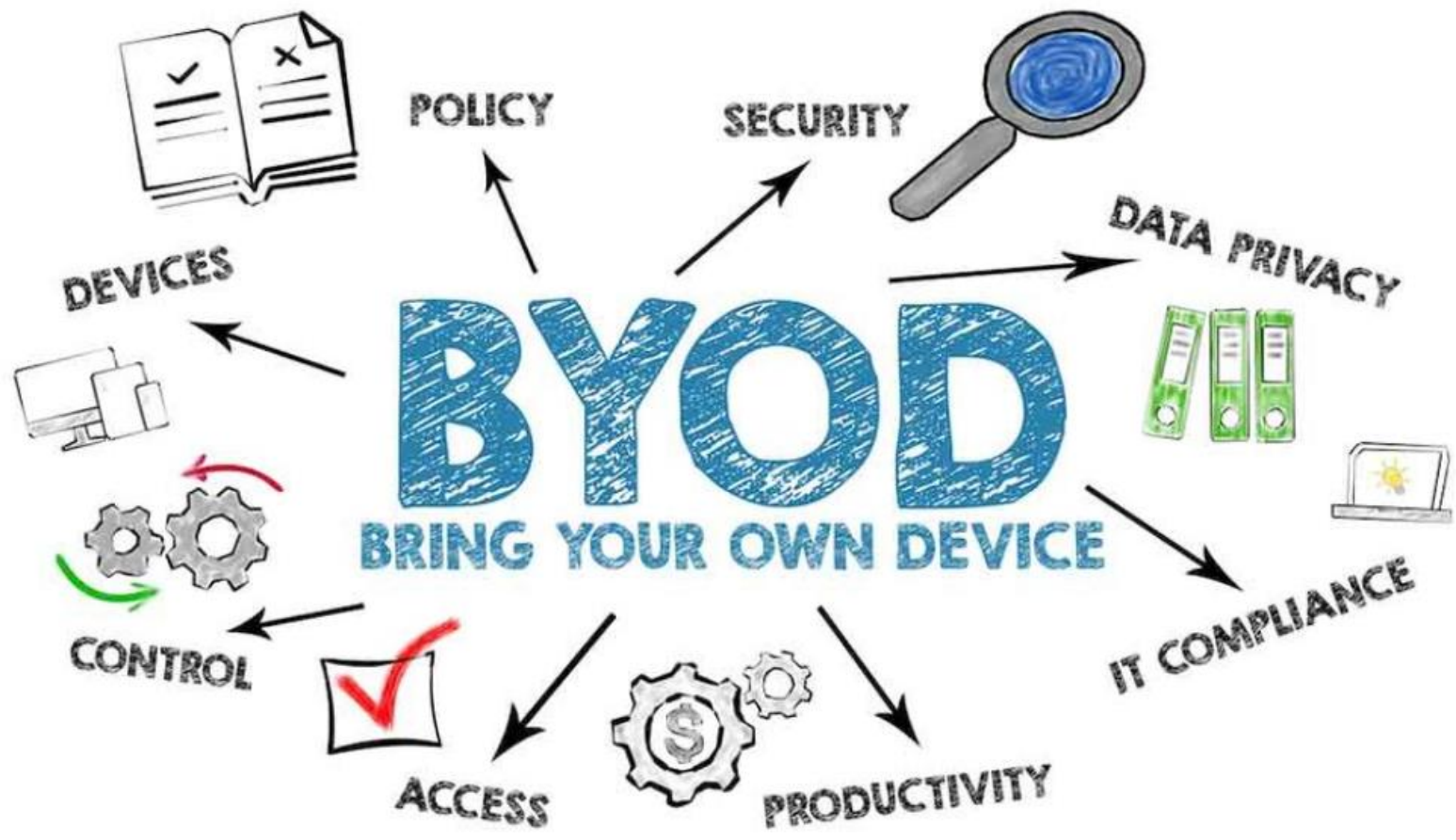
DIGITAL TRANSFORMATION

COMING SOON

A photograph of a marquee sign at night. The sign is illuminated from above by three spotlights. The text 'COMING SOON' is written in large, bold, black letters on a light-colored background. Below the sign is a large, rectangular area filled with a grid of small, glowing yellow lights. The background is dark, suggesting an outdoor setting at night.



The
bu\$ine\$\$
of ...
FEAR



A PORT MAKING MONEY

Ports generate revenue through multiple business streams

PORT REVENUE DRIVES

-  ECONOMIC GROWTH
-  JOB CREATION
-  INFRASTRUCTURE INVESTMENT

KEY REVENUE STREAMS



VESSEL FEES



Charges for vessels using port facilities, including dockage, tonnage, and berthing fees.



CARGO HANDLING FEES



Revenue from loading, unloading, and moving cargo, based on volume or weight.



STORAGE AND WAREHOUSING



Income from storage, warehousing, and distribution services within the port.



LAND AND REAL ESTATE LEASES



Earnings from leasing port land, buildings, and terminals to businesses.



CUSTOMS AND GOVERNMENT FEES



Charges collected for customs processing, inspections, and regulatory services.



VALUE-ADDED SERVICES



Revenue from services like equipment rental, repairs, bunkering, and logistics.



SUSTAINABLE PROFITABILITY

Reinvested into better infrastructure, technology, and services for future growth.



...because ports make lots of money!

The Evolution of Port Competitiveness

1980s — Infrastructure

Physical Advantage (berth and cargo capacity)

1990s — Equipment

Operational Advantage (moving cargo faster)

2000s — Processes

Efficiency Advantage

2010s — Digitalization

Information Advantage

2020s — Artificial Intelligence

Decision Advantage (inferences, real-time course correct)

Every decade had a competitive separator.

야드 현황

전체 야드 장치율 임계치(70%) 초과 블록 수 12 개

74%

100
70
0

A2 A3 B7 B2 B4 C3 C7

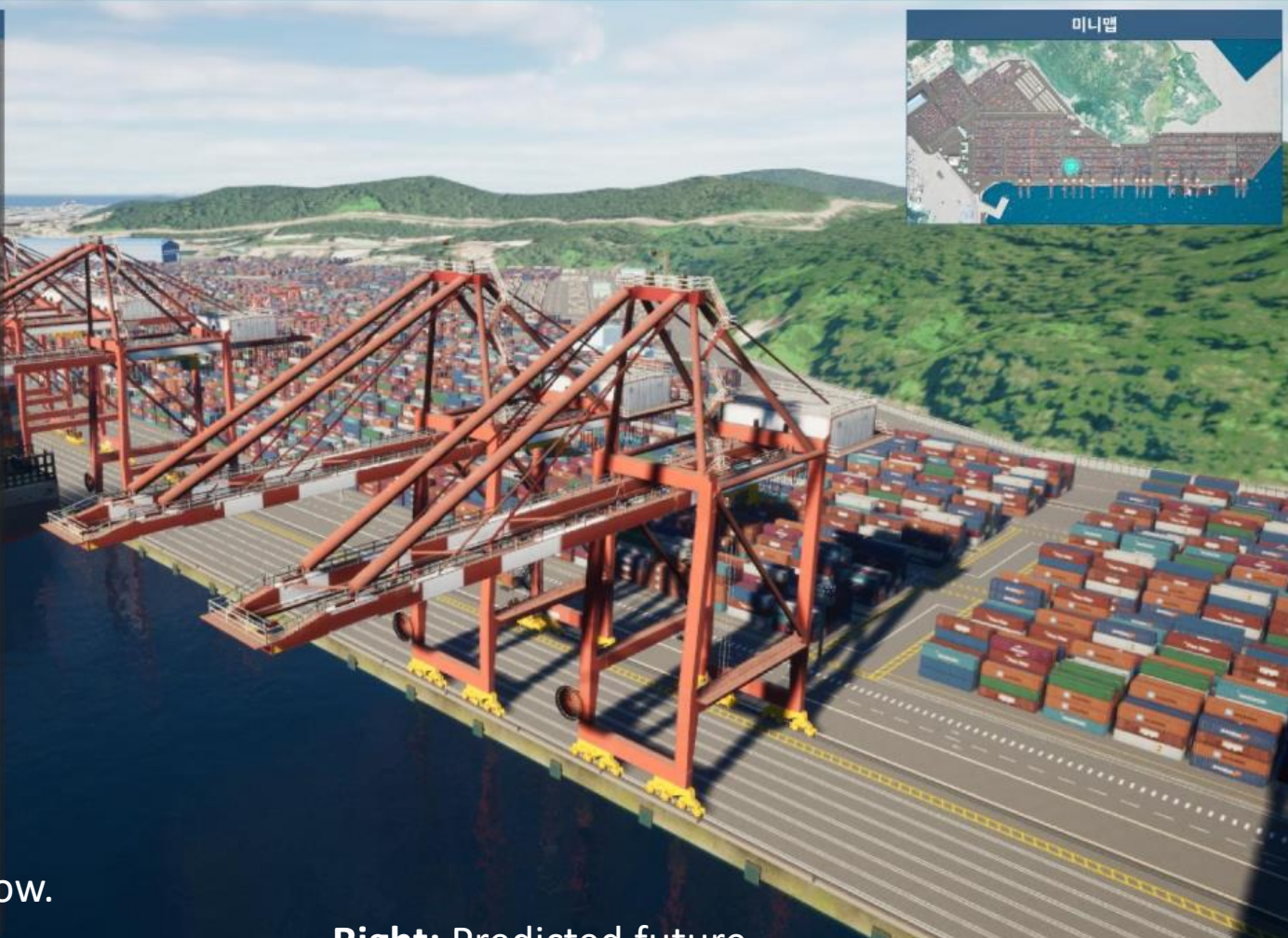
GP MT RF DR ED
DG AK BN FR BB

특수 컨테이너 현황 (단위: TEU)

GP	12800	DR	350	MT	180	ED	20	RF	60
AK	20	DG	130	BN	270	BB	210	FR	120

블록 리스트

전체 블록	장치율	전체 상태	작업 수
1A	62%	정상	20개
2A	61%	정상	21개
3A	64%	정상	20개
4A	59%	정상	15개
5A	67%	정상	22개
6A	63%	정상	26개
7A	62%	정상	20개
8A	57%	정상	14개
1B	65%	정상	17개
2B	71%	주의	26개
3B	68%	정상	23개
4B	66%	정상	21개
5B	70%	주의	25개
6B	70%	주의	25개
7B	70%	주의	25개
8B	70%	주의	25개



What is happening now.
 Vessel arriving.
 Containers moving.
 Trucks queuing.

Vs Digital Twin.
 Real-time simulation.

Right: Predicted future.
 Predicted congestion.
 Predicted berth occupancy.
 Predicted equipment failures.
 Predicted revenue.



As complexity grows, prediction becomes more valuable than intuition

Terminal Operations

Predict congestion.

Predict gate demand.

Predict equipment failures.

Reduce demurrage. (reducing uncertainty & delays)

Ports will become predictive instead of reactive.

Security

AI surveillance.

Anomaly detection.

Intelligence correlation.

Risk prioritization.

Security will move from observation to anticipation.

Administration

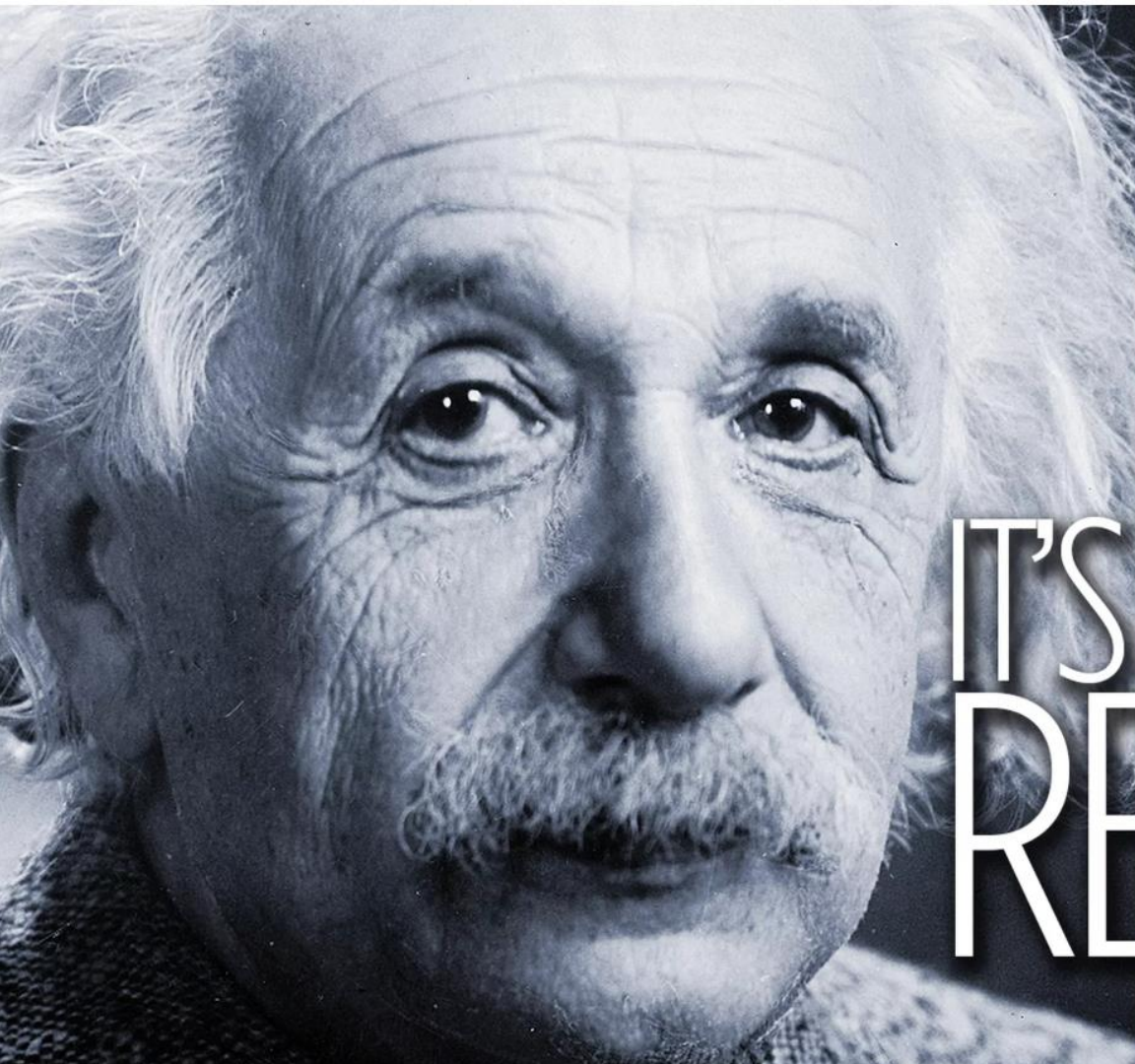
Revenue leakage.

Customer complaints.

Sentiment analysis.

Real-time reporting.

Management will move from reporting the past to managing the present.



IT'S ALL RELATIVE

Theory of relativity

Performance is Relative

Relativity determines competitiveness

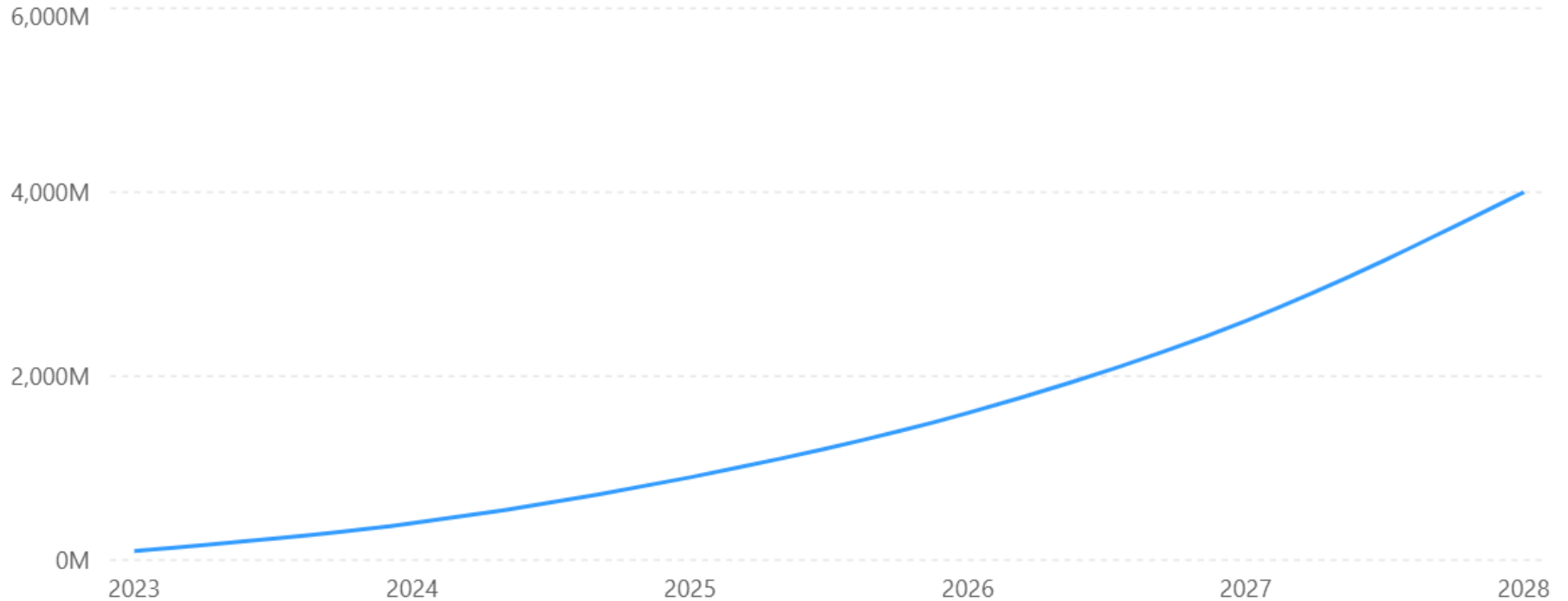
AI will not define ports

AI will not define ports

It will Separate them

AI Adoption: The Last Three Years vs The Next Three Years

Illustrative global AI user growth showing accelerating adoption and business impact.



"The next three years will not determine which ports adopt AI. It will determine which ports survive the adoption of AI by other ports."

2023. Digitalisation was a competitive advantage

2026. AI is a competitive necessity

2029. AI will become a customer expectation

The cost of small vision
will NOT be small
consequence

