Solving the Throughput – Efficiency Paradox with AI-powered Solutions
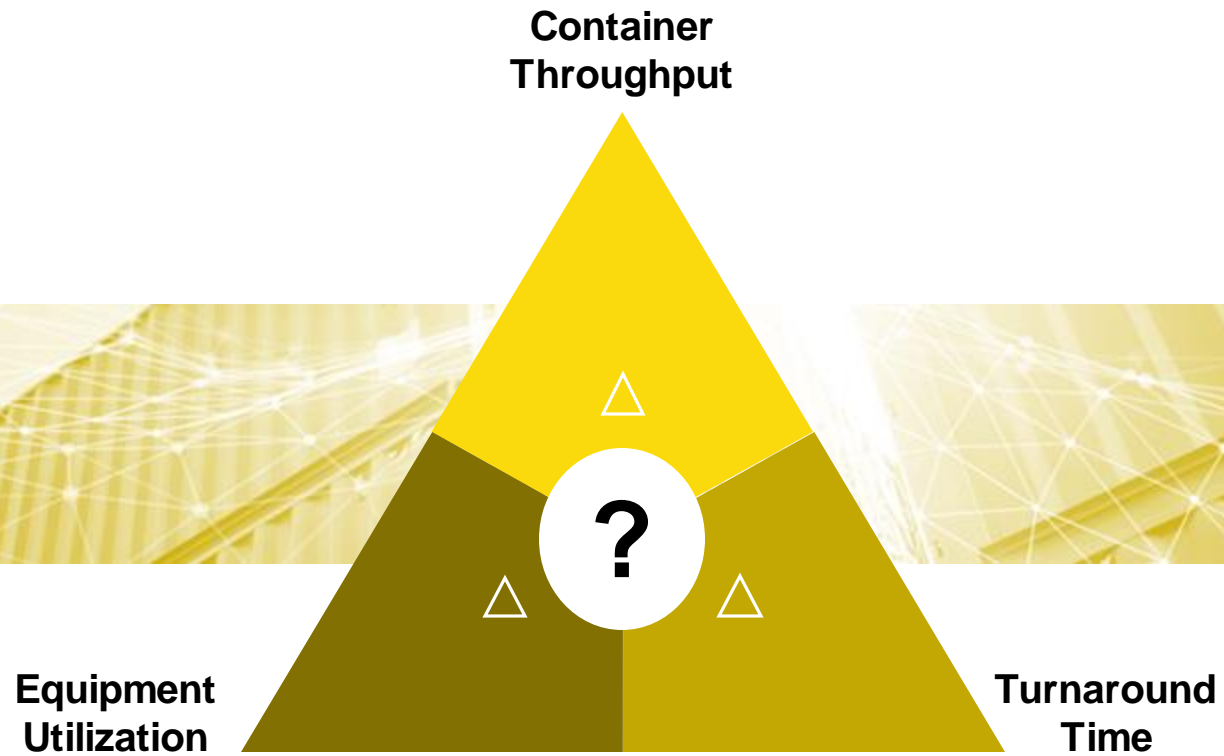
APRIL 20, 2023

The classic paradox in Container Terminals

Container Throughput

?

Equipment Utilization

Turnaround Time

2

What external factors cause this paradox?

Unpredictable demand

Lack of visibility

Hardcoded software logic and operational systems

Underutilized resources or overutilized equipment and downtime

Poor decision-making
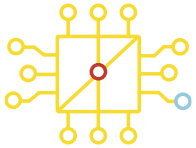
Systems unable to respond to dynamic conditions

AI-based Solutions can solve this paradox

Predict the impact of external factors (weather, traffic etc.) to prevent disruptions on operations

Determine number of cranes required to load and discharge a vessel

Decide how many prime movers should support a crane

Decide how to stack the containers to minimize unproductive moves

Determine which operator can drive higher productivity for a given equipment

Estimate vessel arrival

Recalculate plans based on unforeseen events such as channel closures

Maximize berth allocation for (delayed) vessels

Predict equipment failure

Define the most optimal path for a prime mover

Find an incorrectly positioned or lost container

Recalculate plans to accommodate for when a container is not picked on time

Predict external trucks or train arrival

Who are we?

We deliver adaptive **AI solutions that enhance operational systems and decision-making,** to increase Container Terminal productivity and efficiency

We **combine domain knowledge and analytical thinking with innovative technology** that continually self-adjusts to the most demanding and dynamic conditions
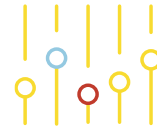
Our **AICON Solution Suite** is unique to the industry as it provides directly embedded intelligent answers that help you realize your KPI's

AVLINO

Headquarters
New Jersey, USA

Design Centers
Bengaluru, India | Porto, Portugal

Expertise
Artificial Intelligence, Machine Learning, Operations Research and Big Data Engineering

Model
Software-as-a-Service
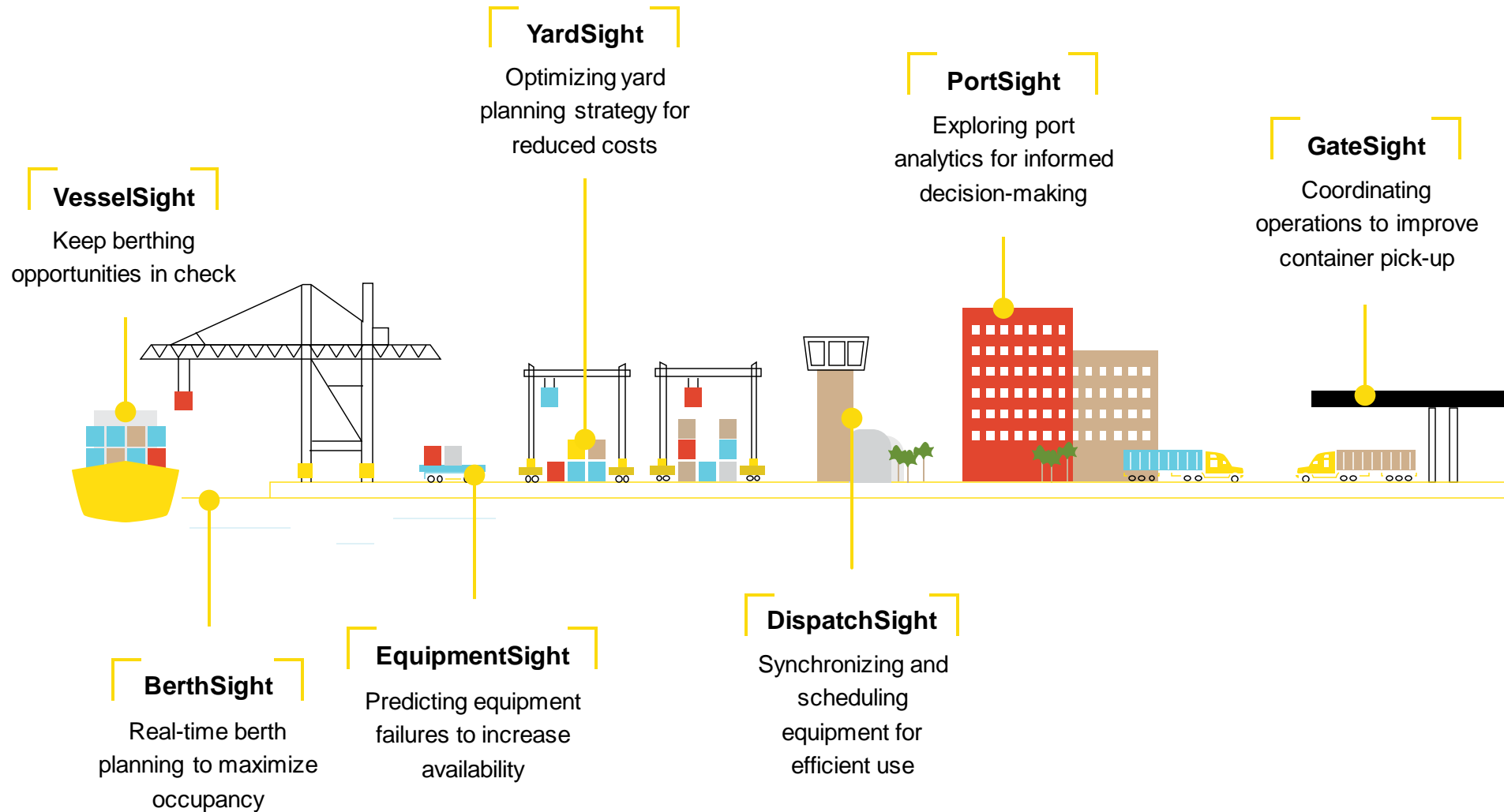
AICON Solution Suite | Comprehensive view

AI-enabled Modules

Combining Machine Learning, Operations Research and Big Data Engineering
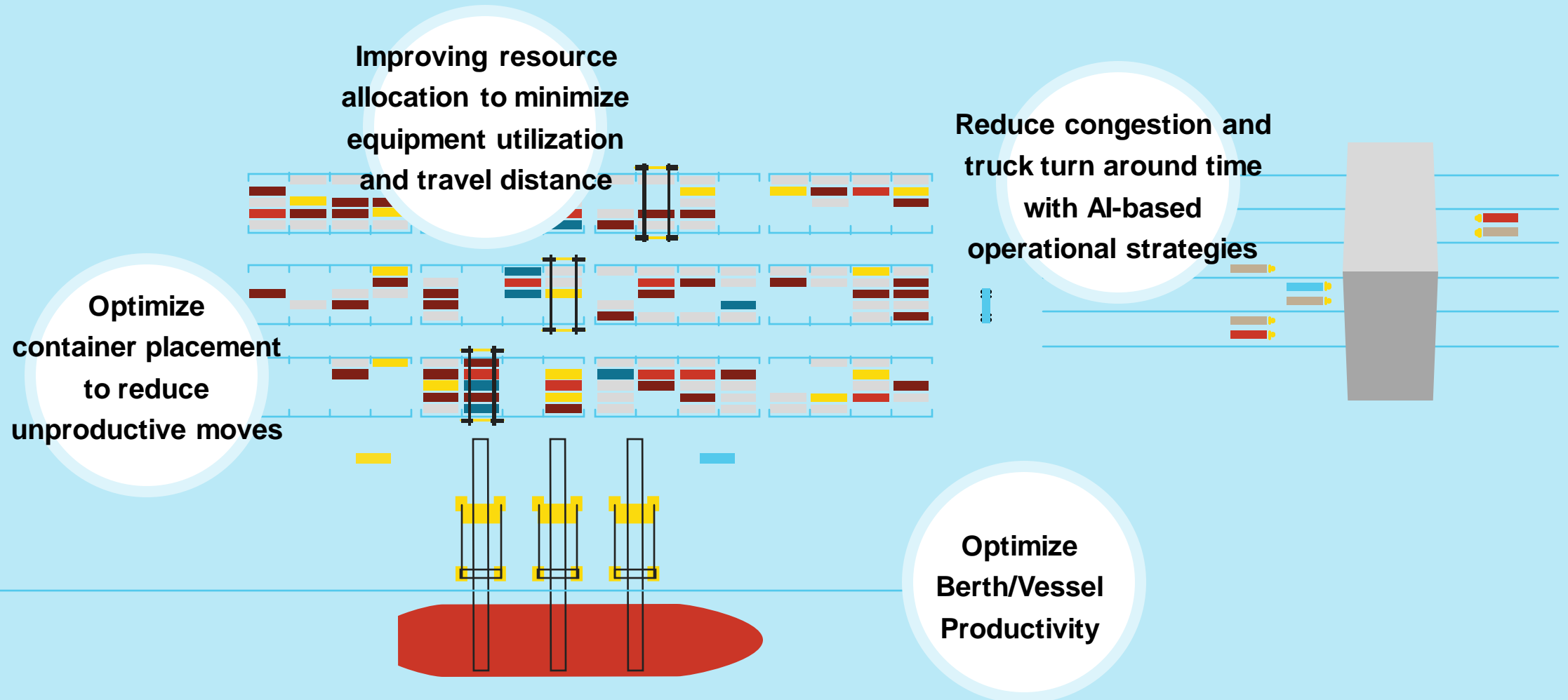
Integrating with TOS and sub-systems to generate visibility

Adapting quickly and continuously to changing conditions

Delivering value to the C-Level while helping analysts, managers, and planners across the terminal

YardSight
Optimizing yard planning strategy for reduced costs

PortSight
Exploring port analytics for informed decision-making

GateSight
Coordinating operations to improve container pick-up

VesselSight
Keep berthing opportunities in check

BerthSight
Real-time berth planning to maximize occupancy

EquipmentSight
Predicting equipment failures to increase availability

DispatchSight
Synchronizing and scheduling equipment for efficient use

Opportunities for AI/OR based optimization

Improving resource allocation to minimize equipment utilization and travel distance

Reduce congestion and truck turn around time with AI-based operational strategies

Optimize container placement to reduce unproductive moves

Optimize Berth/Vessel Productivity

Avlino delivers its AI Solutions under a SaaS model

Each AICON module has an associated per year per terminal SaaS price

1$ Earned Revenue

Profit Margins

G&A

Operating Expense

Cap Ex

Avlino Annual SaaS Revenue

Container Terminal Revenue Breakdown (Current)

Container Terminal Revenue Breakdown (with Avlino AI)
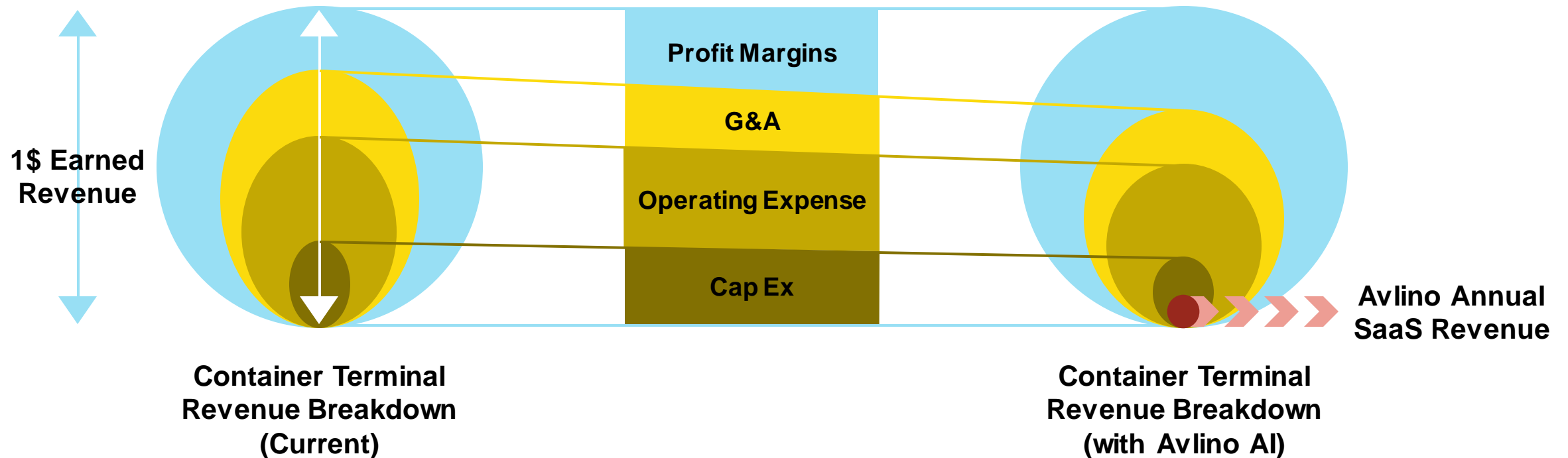
The clients realize a significant reduction in CapEx and OpEx by using AICON.
In the current deployment scenarios, customers are realizing a ROI in 3 months.

Solving the paradox with AICON

Before

Now

Container
Throughput

Business KPIs
were taken as static

Software and operational logic
drove business outcomes

Business KPIs are dynamic
and can be varied

Business objectives drive
the operational logic

AI

Equipment
Utilization

Turnaround
Time

Thank you

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