

Revolutionizing Terminal Operations with Digital Twin Intelligence



Harry Nguyen,
Founder & Director of RBS

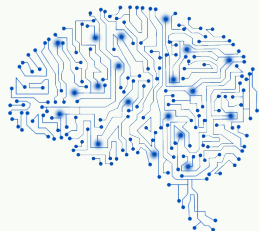


Intelligent 3D vs. the Twin Revolution

All the advantages of digital twin, and more

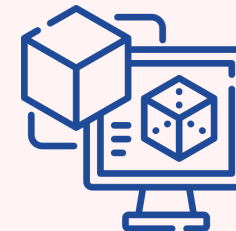
An Intelligent 3D Solutions

- ✓ Can be used to pre-execute moves and for other operational purposes
- ✓ Has super intelligent capabilities to boost performance, evaluate moves and eliminate inefficiencies
- ✓ Ability to predict and resolve incoming problems
- ✓ Incredibly fast, light and accurate
- ✓ Can run at over 100x the real-time speed



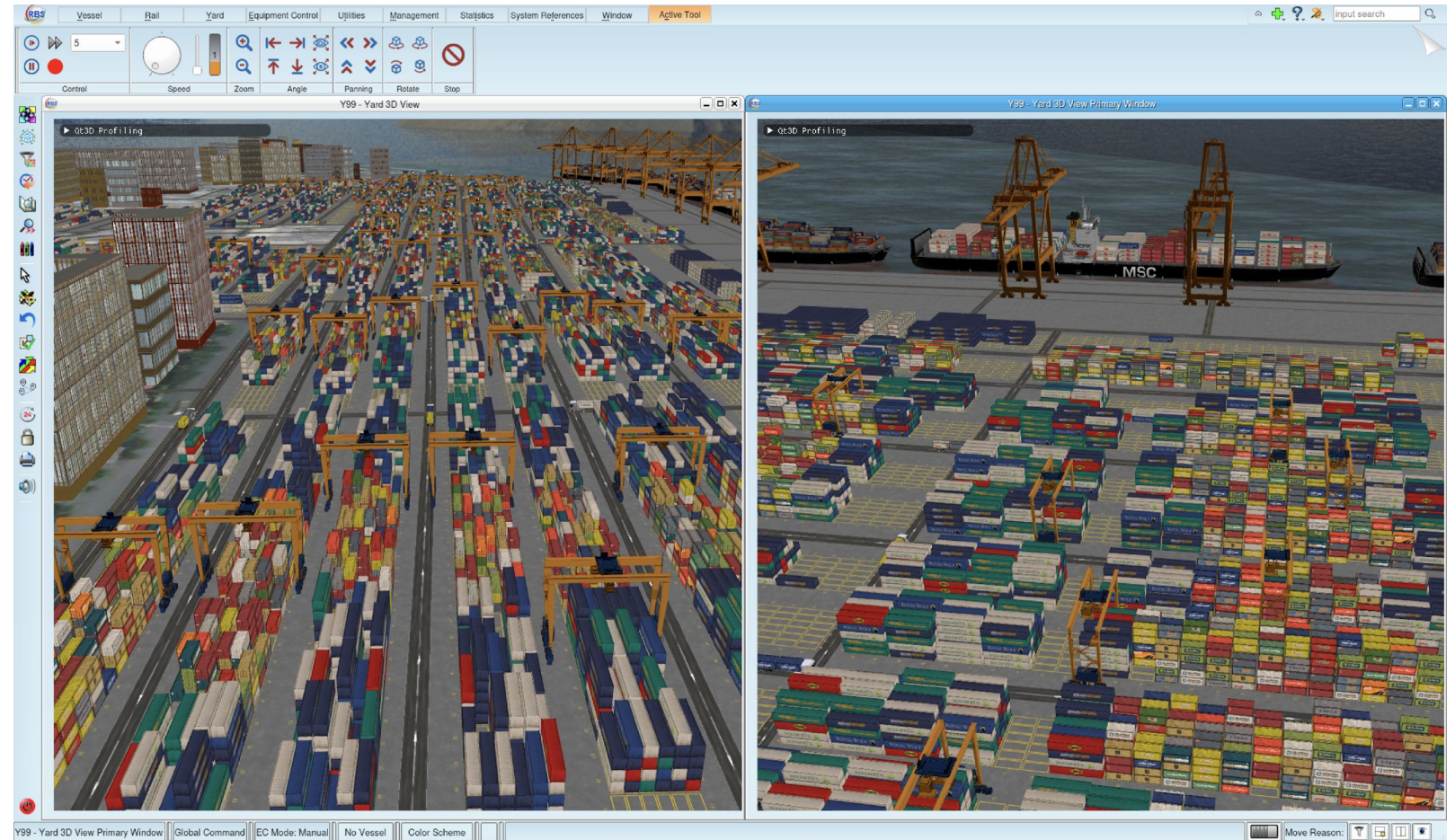
Digital Twin

- × Cannot be used for operational purposes
- × Has NO intelligent features that help with increasing performance or deal with inefficiencies
- × Cannot predict and see incoming problems
- × Often very slow and heavy
- × Can only run at the real-time speed



Inside the Mind of Intelligent Solutions

- An Intelligent 3D Solution is much more than just an average digital twin.
- These Solutions combines the digital twin concept with actual operational and executional features of the 8 dimensions to bring vast & unique benefits to terminals.
- The Solution will also have Super Intelligent capabilities which allow it to predict and resolve incoming problems.
- Hence, it becomes a tool to optimize, perfect and boost a terminal's performance in completely new ways



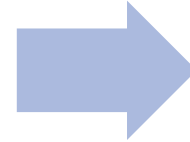
See Beyond with X-Ray & Intelligent Solutions



First you get the X-ray, then we provide the medicine and surgery

1. Digital twin and charting (X-Ray)

- See the terminal like never before
- Identify problems that you never knew exist
- Calculate how much savings can be made if problems are addressed



2. Super intelligent engine (Medicine / Surgery)

- Offers a solutions for all the problems identified in the X-Ray
- Automatically and continuously solve the problems
- Enjoy the cost savings calculated in step 1

Why we need Intelligent 3D Solutions

Where Vision Meets Execution

Common problems in a terminal



Congestion and traffic



Bottlenecks at blocks as trailers wait for service



Delays in planning and problem solving



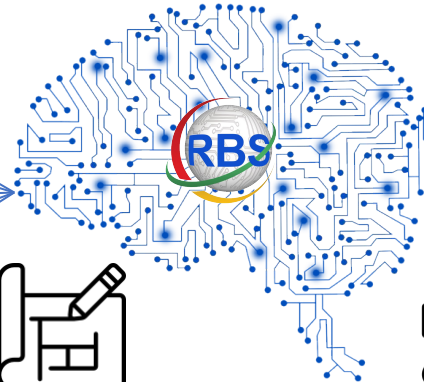
Crane Hang



Unproductive move & Unladen Travel



Re-routes

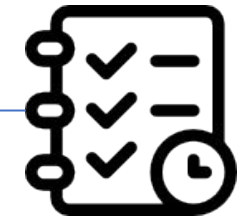


Re-plans



Re-assigns

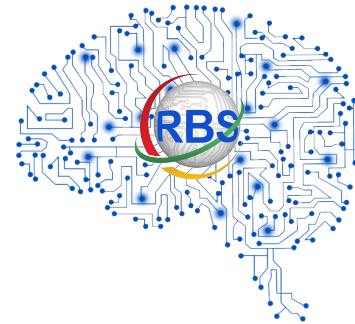
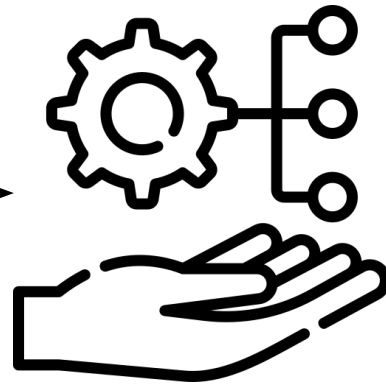
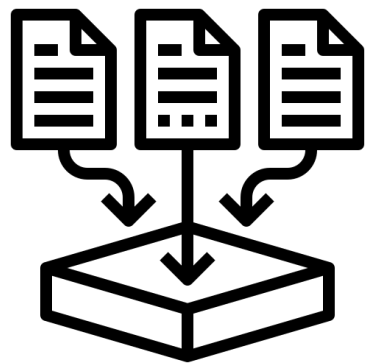
Intelligent 3D takes all these common problems and solves them by re-routing, re-planning, and re-assigning. The result is the best execution possible



An optimized execution plan with little to **NO Inefficiencies**

How Intelligent 3D solutions works

Where Vision Meets Execution



Container data
Yard/Vessel/Truck/Train EDI

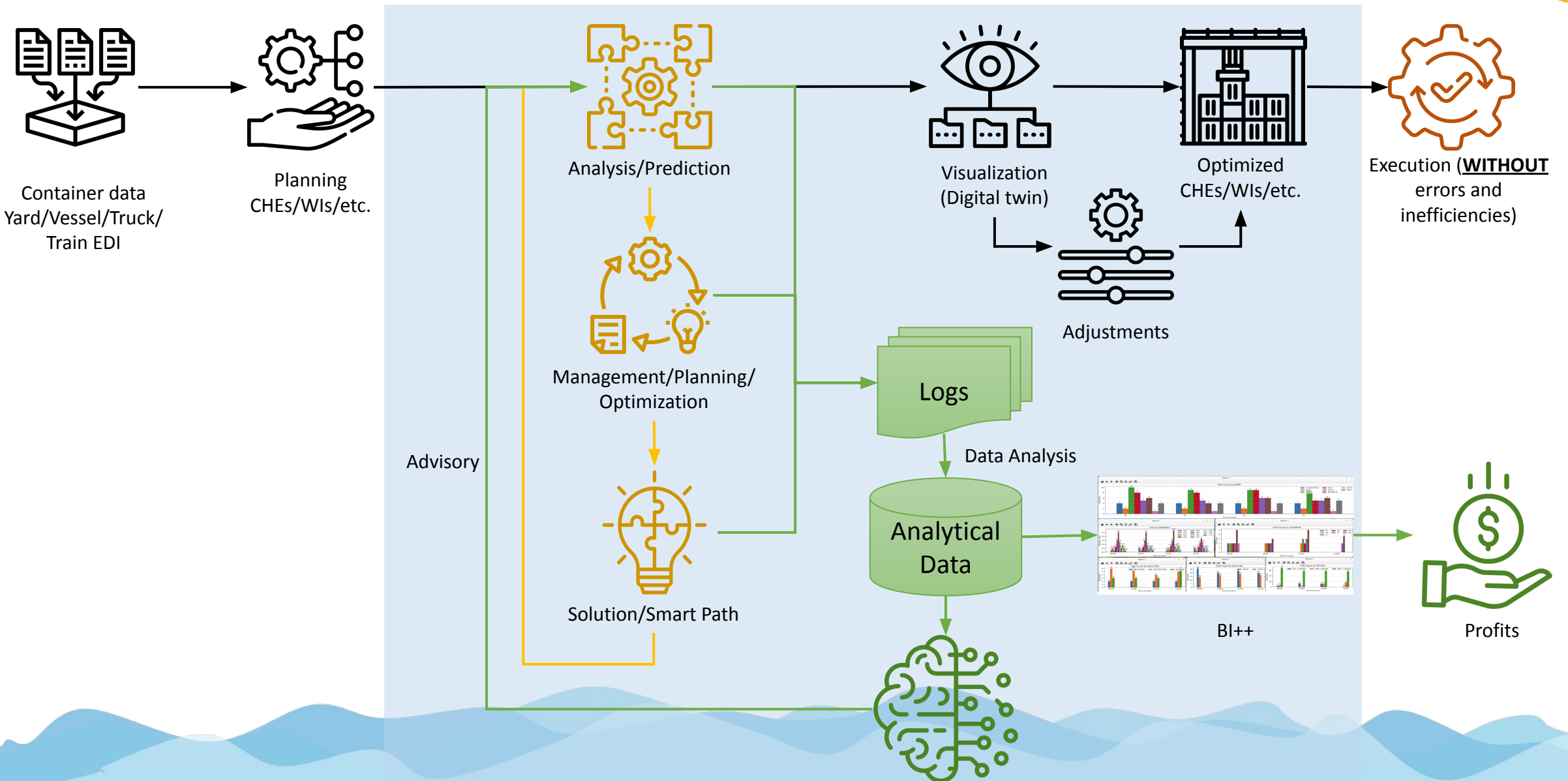
Planning
CHEs/WIs/etc.

TOPS Intelligent
checks, optimizes
and perfects the
operation plan at
lightning speed

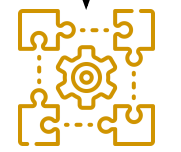
Execution
(WITHOUT
errors and
inefficiencies)

How Intelligent 3D solutions works

Where Vision Meets Execution



Intelligent 3D Solutions: Predict Problems, Prevent Disruptions



Analysis/Prediction



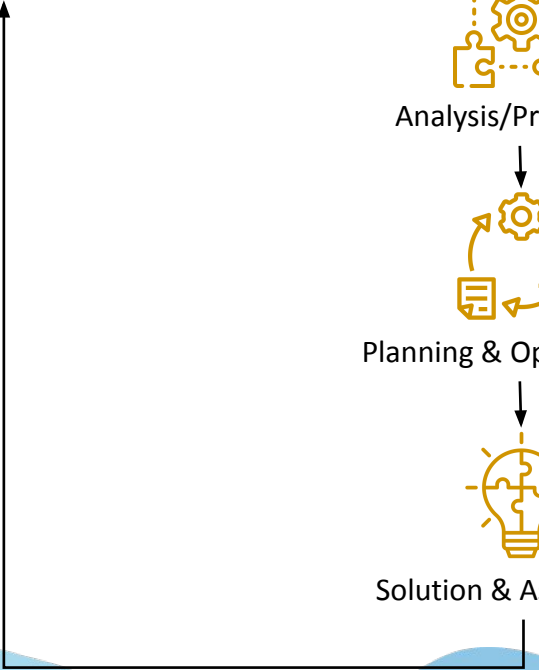
Planning & Optimization



Solution & Assignment

Note: the future time of 10 minutes ahead is given as an example only. TOS may look further ahead in time to resolve conflicts.

During execution, TOS is constantly looking ahead to resolve any possible inefficiencies. Furthermore, it is reactive to any changes that may occur. Hence, execution will **ALWAYS** happen in the **most effective way possible**.



Intelligent 3D Solutions: Intelligence in Every Dimension



TOPX-Intelligent 3D In Action



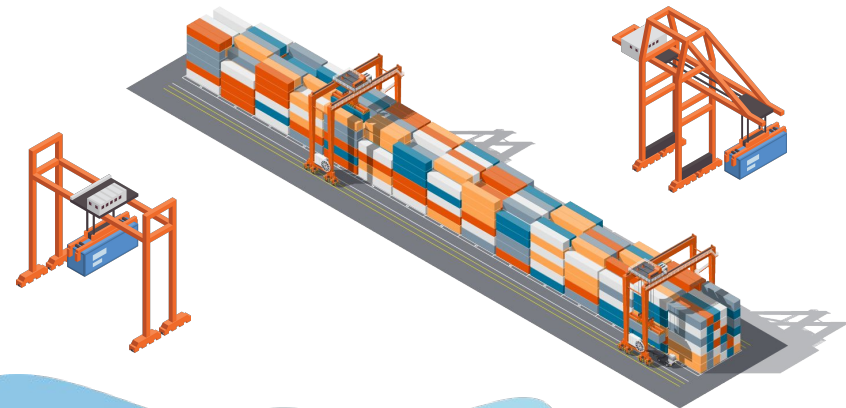
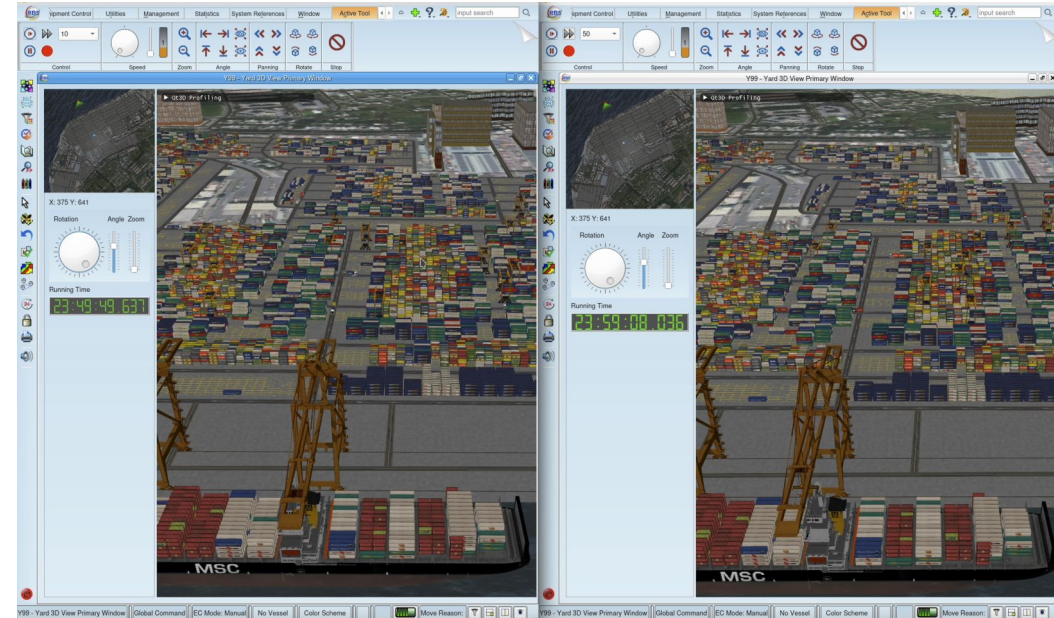
<https://www.youtube.com/watch?v=9maJXt-bheo>

The Future of Problem Solving: Supercharged 3D Intelligence

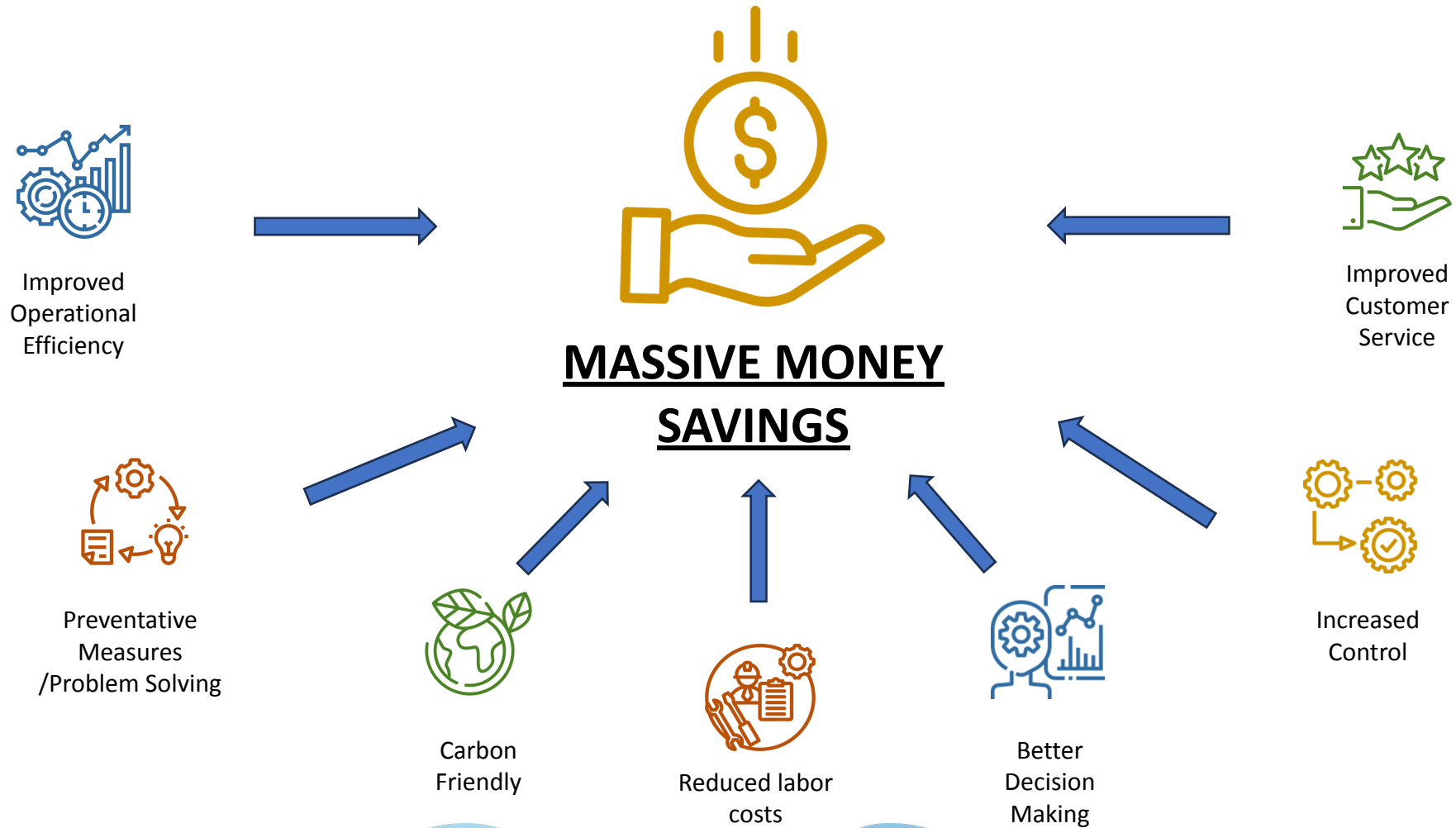


Intelligent 3D Solutions For Automation

- When the TOS is used in combination with Automation, the maximum benefits will be achieved
- The Intelligent TOS can more accurately predict and resolve issues before they occur because the reliable speed, distance, and overall accuracy of automated machinery, especially AGVs.
- Moreover, the optimized execution plans that are outputted by the TOS will be carried without human errors
- This results in **PERFECTLY OPTIMIZED** execution **AT ALL TIMES**



The Ultimate Solution: Saving What Matters Most



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