

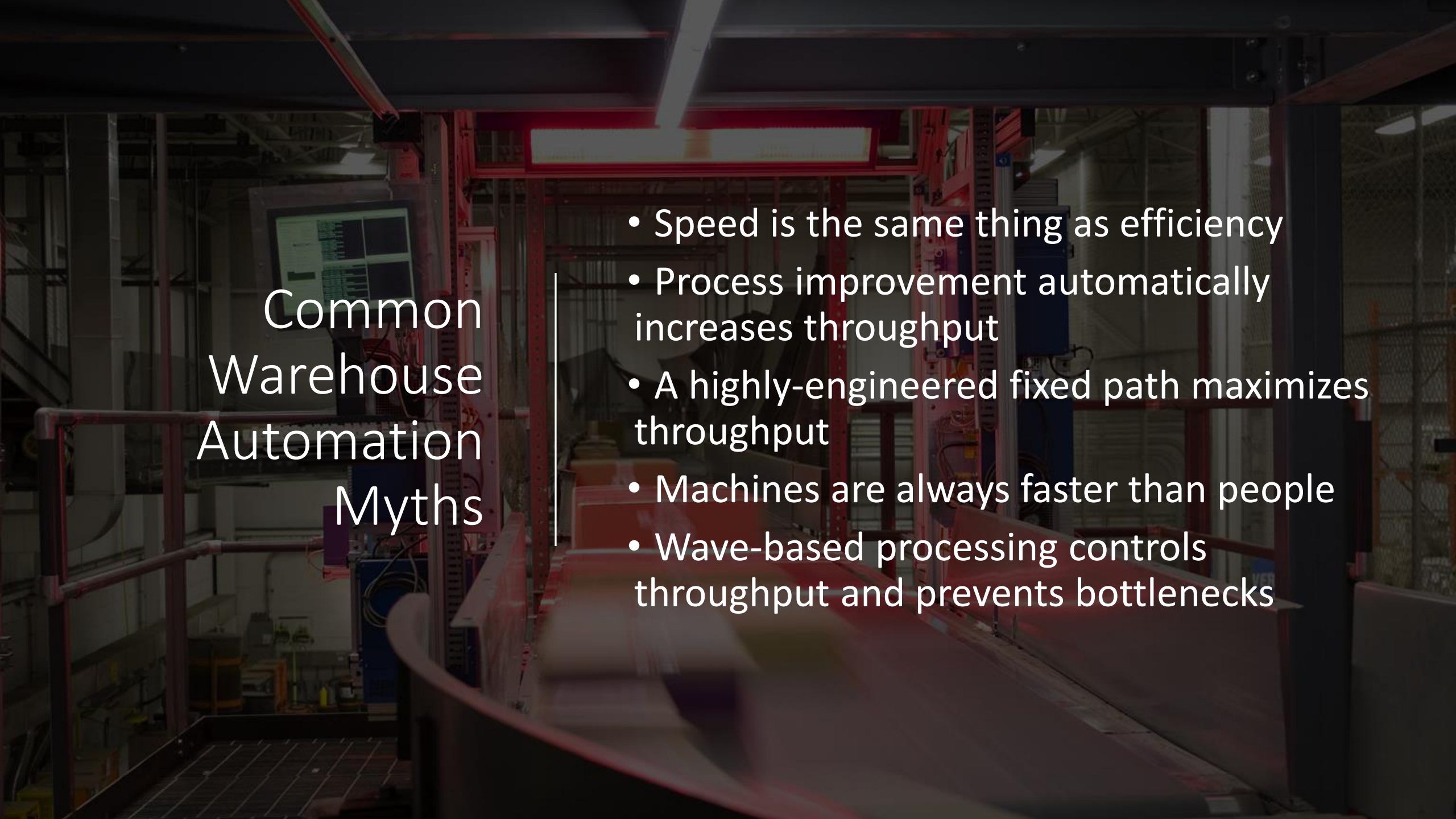
Automate Differently: The Flexible Future of Warehouse Automation



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Common Warehouse Automation Myths

- Speed is the same thing as efficiency
- Process improvement automatically increases throughput
- A highly-engineered fixed path maximizes throughput
- Machines are always faster than people
- Wave-based processing controls throughput and prevents bottlenecks

Automation Needs to be Designed for Efficiency, not Just Top Speed



Top Speed: 200 MPH
Miles Per Gallon: 2-5 mpg
Cost: \$400,000



Top Speed: 149 MPH
Miles Per Gallon: 19-28 mpg
Cost: \$40,000

If your work is consistent with fewer stops and starts, how fast do you actually need to go?

Siloed Automation Creates Bottlenecks

Warehouse execution is not a sprint...its a relay race

Bottlenecks happen when disconnected systems and processes overwhelm downstream capacity

Intelligent software is needed to orchestrate tasks distribution across siloed automation systems and manage task flow



Fixed Path Automation Is An Expensive Risk

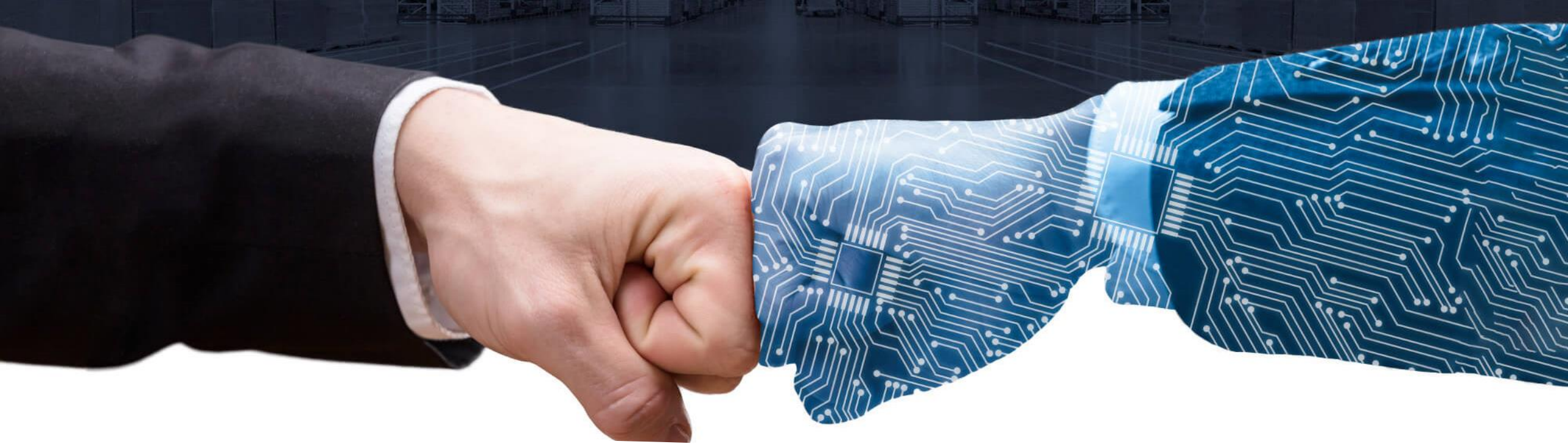
Building the fastest possible fixed path is usually expensive and inflexible

Lack of visibility to downstream bottlenecks can cause gridlock with no alternative options

Having multiple low-cost paths and deciding which path is the best to take based on real-time information prevents bottlenecks

Intelligent software is the only way to make dynamic path selection and work assignment decisions in time to proactively prevent bottlenecks.





People (not Machines) Are Key to Flexibility

People are a central part of software-based automation - the physical link between siloed machine automation systems

Software augments humans with technology to give process instructions and information needed to make the right decision

Intelligent software also connects them with robots and machines that increase capacity and travel speed



Software-based Automation Creates a River, not Waves

Traditional planned waves create a hurry up, then slow down, then hurry up, then slow down task flow

Your task flow should be more like a river with a consistent, steady flow

Achieving constant flow requires intelligent software because people cannot manually (re)prioritize work when conditions are constantly changing





Only Software Automation Can Orchestrate Humans, Robots, and AI for Flexible Efficiency

AI-automated “next-best-decision” work assignment based on real-time conditions - no more stop and go wave processing

Dynamically select the best and lowest-cost flexible path for the current conditions

Technology-augmented people provide flexibility and provide the physical link between machine automation systems

AI-automated flow control that connects siloed machines and processes to see bottlenecks developing and proactively adjust decisions to prevent them