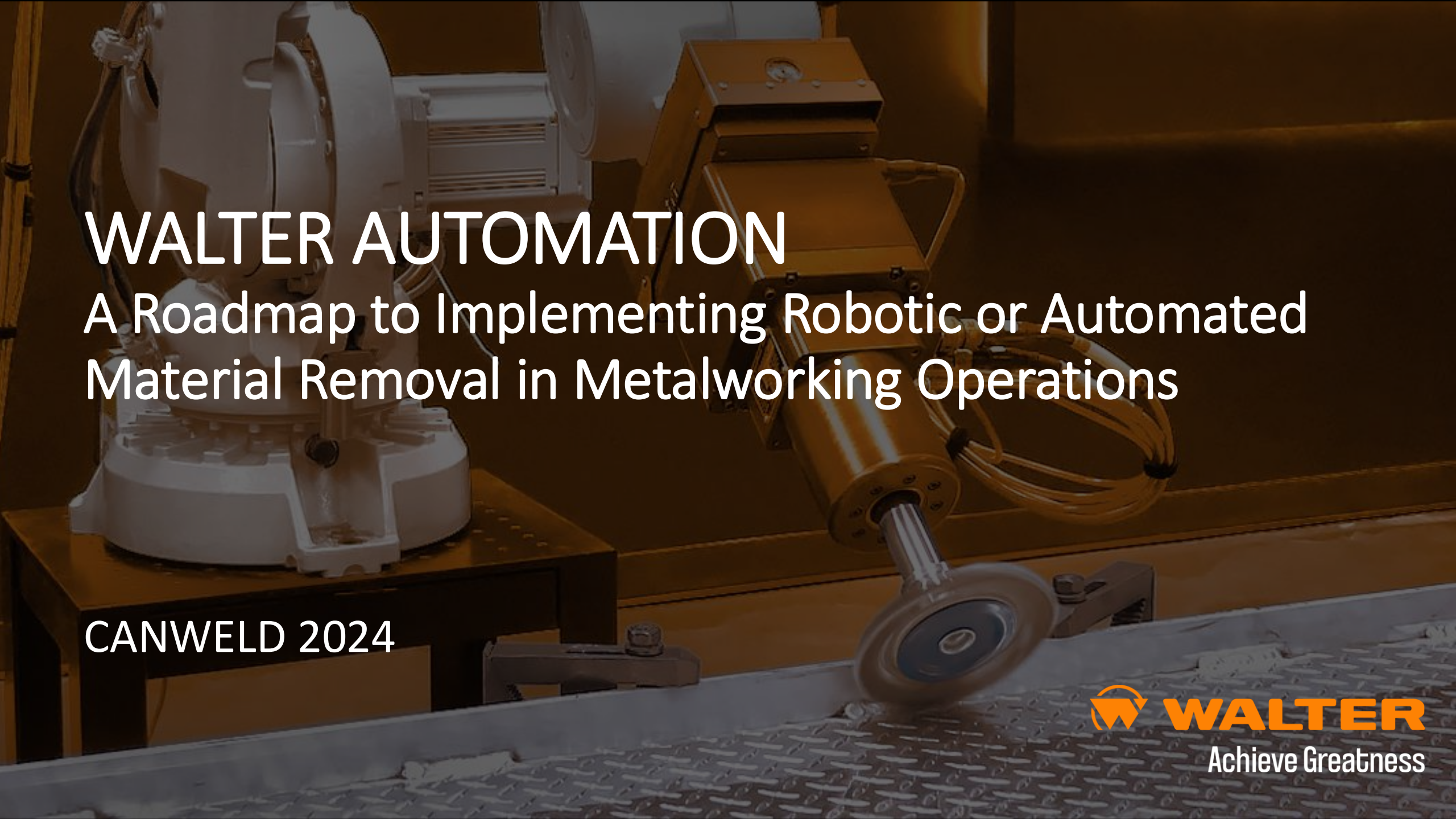

WALTER AUTOMATION

A Roadmap to Implementing Robotic or Automated Material Removal in Metalworking Operations

CANWELD 2024

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Who is the audience

If you are an end user, manufacturer, or are here because you are curious about deploying automated material removal (MR) in your process, please raise your right hand.

If you are a solution provider, system integrator or automation OEM, please raise your left hand.

Understanding the benefits of automated material removal

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17,315

The number of new welding apprentice registrants required in Canada over the next 5 years to eliminate the risk of a labour shortage

(Canadian Occupational Projection System)

35,781

2020 reported occupational injuries and illnesses in the manufacturing sector. 137 of these were fatal.

(Association of Workers' Compensation boards of Canada)

Benefits

Enhanced efficiency

Improved precision

Increased worker safety

Operational cost savings

Resistance to workforce fluctuations

Defining process requirements for automated material removal

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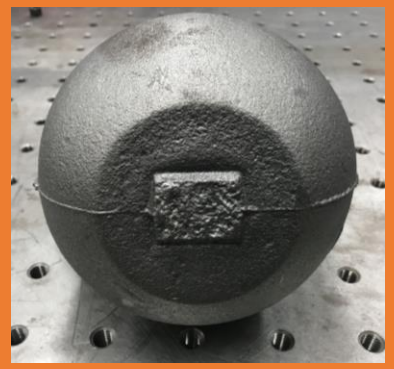

What process are you looking to automate?

- Buffing
- Polishing
- Deburring
- Grinding
- Sanding
- Graining
- Deflashing
- Degating
- Drilling
- Milling

What Information is available?

- Existing process or new process?
- List of current tools/consumables
- Pictures/videos
- Drawings
- Physical sample parts
- Before finishing
- After finishing
- Finish requirements

What Information is available?

- Material type
  - Hardness
  - Process
  - Safety concerns
- Grinding welds
  - Applied robotically or manually?
  - What weld process?
- Special constraints
  - Floor space
  - Approved product list

Establishing business needs

- What level of automation is acceptable?
- How soon do they need it?
- When is floor space available?
- Critical to know who this person is up front.
- What makes a good part?
- Finish
- Dimension
- Subjective/"Golden Part"

Technology selection & system design

(How do I get help processing the information I gathered?)

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Who can help me?

- There is a community of industry experts who can help you!
- Abrasive manufacturers, like WALTER
- MR OEMS
- Robot OEMS
- A3 - Ask the Experts

Testing & Integration

(How do I get help processing the information I gathered?)

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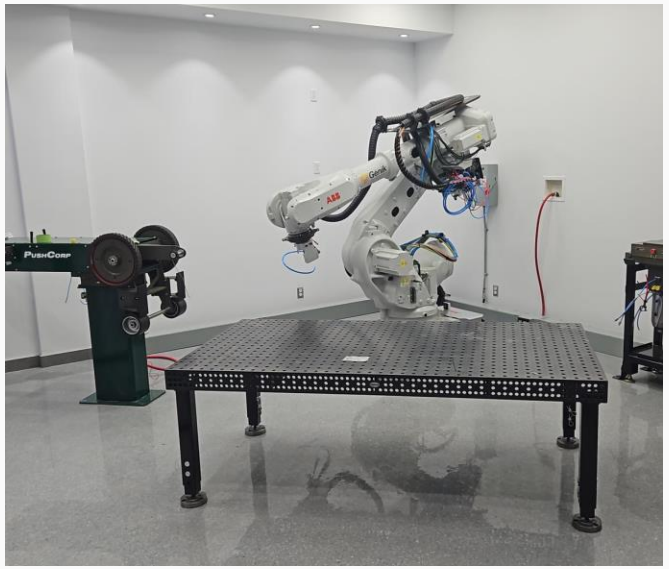
PushCorp De-Risking Center - TX



New Lab at WALTER HQ in Pointe-Claire, QC

De-risk your project with an expert!

- Engage one of the material removal labs around the country.
- Work hand in hand with an industry expert
- Use actual parts
- Leave with a recipe for success
- Save weeks/months of time on your floor developing a process

What output can you expect?

- What equipment to use
  - Motor size and type
  - Compliance unit size and type
- Which abrasive to use
- Process parameters
  - RPM/Travel speed
  - Force applied
  - Grit
- Understanding of robot size
  - Hands on experience the equipment and abrasives


PUSHCORP
PUSHCORP
Abrasive Flex Drum

Key Considerations

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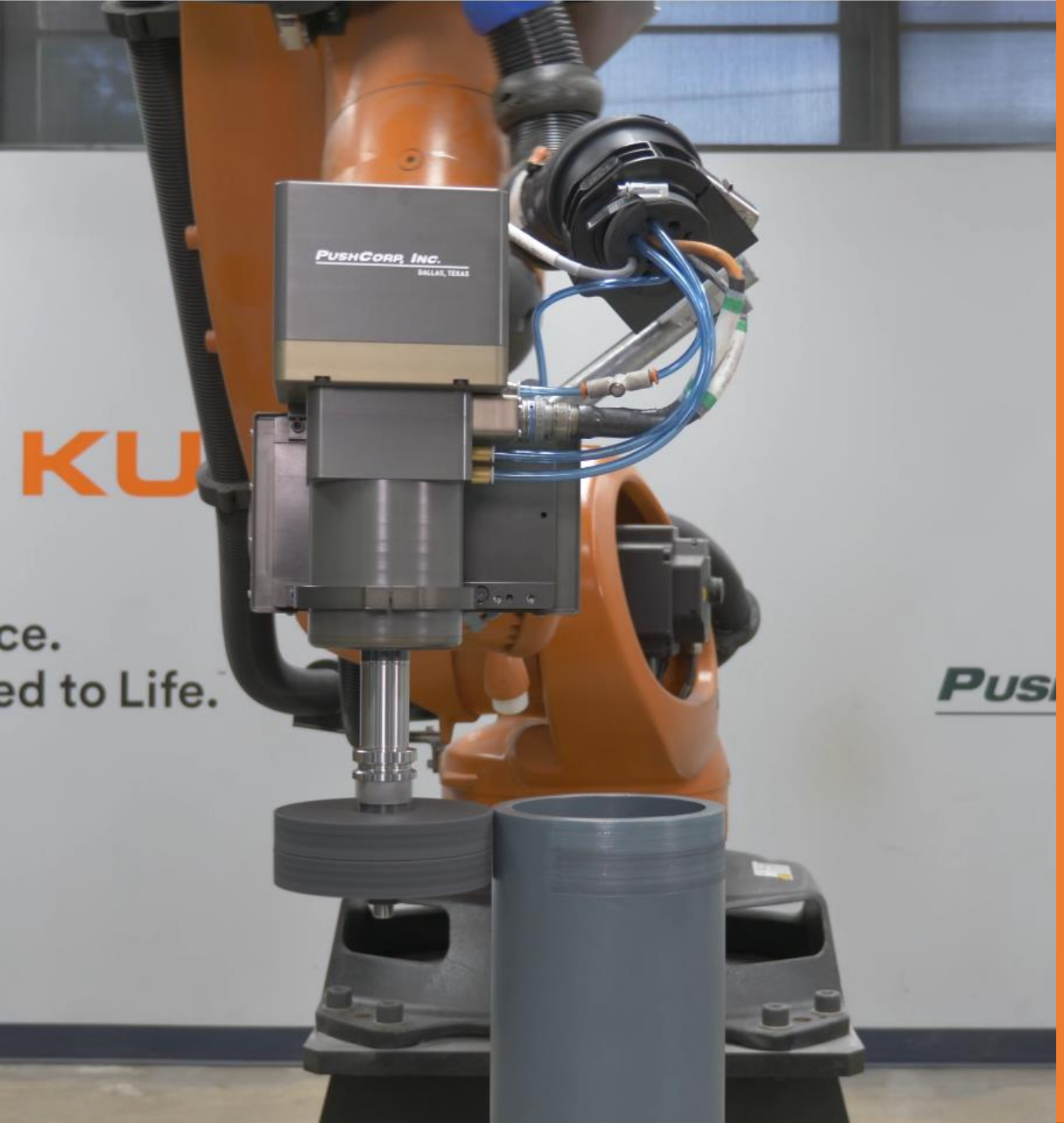
Points to consider

- Running a project through one of the labs will:
  - Launch the project sooner
  - Reduce risk of unknows
  - Provide first hand knowledge of process
- MR cells generally
  - Extend the life of abrasives
  - Allow for the use of larger more aggressive abrasives
  - Increase safety and reduce lost production days due to injuries
- Part to process or Process to part?



Points to consider

- Address staffing challenges
  - Robotic process programming jobs it's better to promote within
  - Allow existing employees to focus on less intensive jobs where they will be happier and stay longer
- 70/30, 80/20, 90/10 or 100
  - Automation vs manual
  - Risk vs reward
- Industrial robots
  - Process MR jobs faster
  - Robust to withstand the rigors of continuous production

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