




# Getting Started with Cobots... Is Now the Right Time?

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A composite image showing a human hand on the left and a robotic gripper on the right. The human hand is open, palm facing up, with fingers slightly spread. The robotic gripper is black and metallic, with two fingers and a central sensor or actuator. The background is blurred, showing a dark surface with a white circular logo.

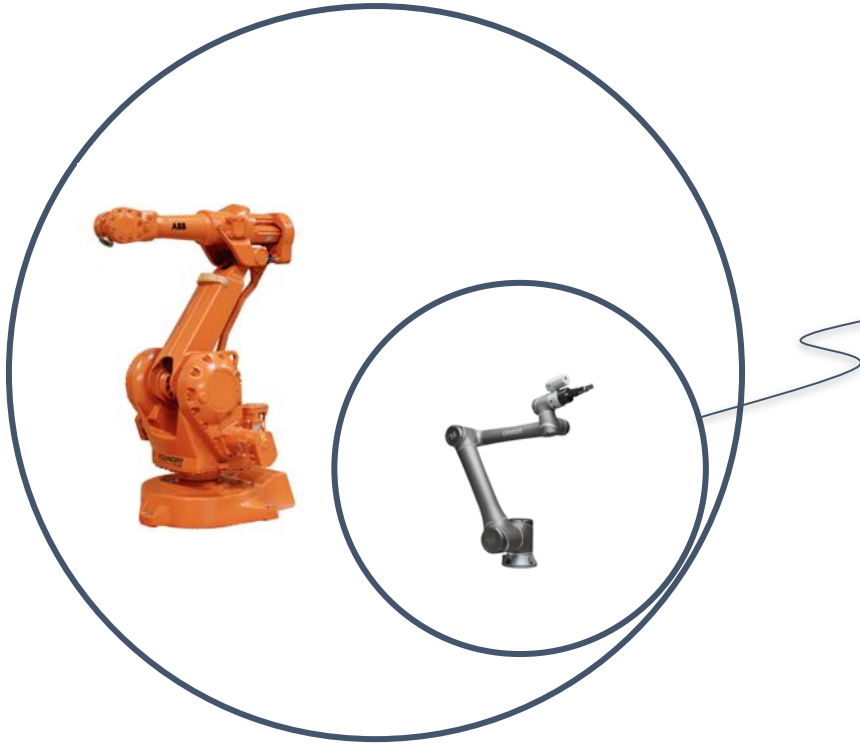
Free human hands from  
repetitive tasks



**START  
PRODUCTION  
FASTER**



## Industrial Robots



### Collaborative robots (Cobots)

- Co-exist with operators  
⇒ Reduced power, force, speed, 80-20 approach
- Easier to deploy  
⇒ Design, Installation, Programming, Impact on layout
- Typical payback : 6-18 months



# Applications



**PICK & PLACE**



**ASSEMBLY**



**MACHINE TENDING**



**FINISHING**



**PALLETIZATION**

# Real World Examples

Watch more here: <https://robotiq.com/resource-center/case-studies>



  
SAINT-GOBAIN

Polishing



**ASSA ABLOY**

The World's Leading Lock Group

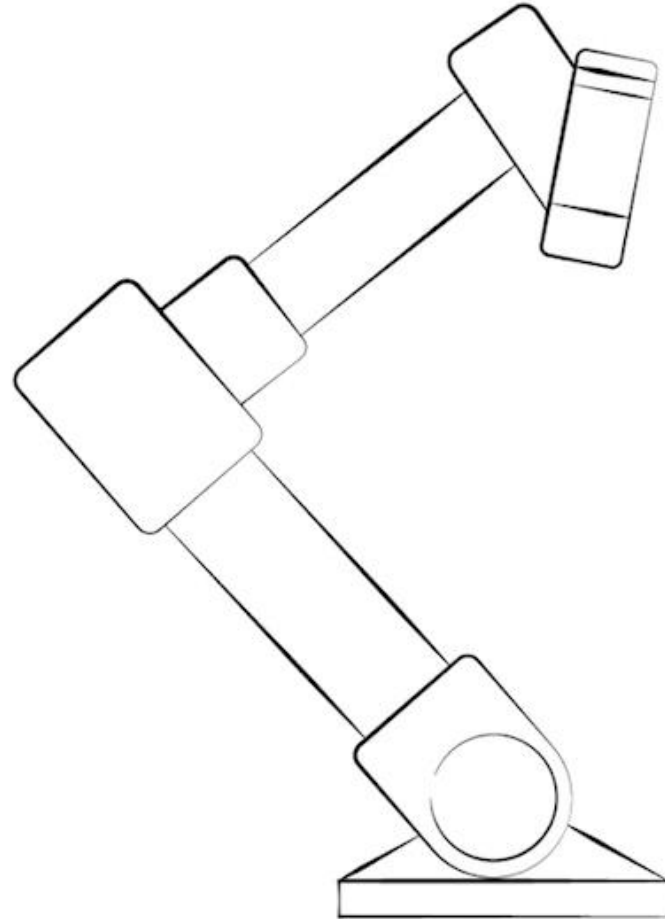
Stamping  
Machine tending

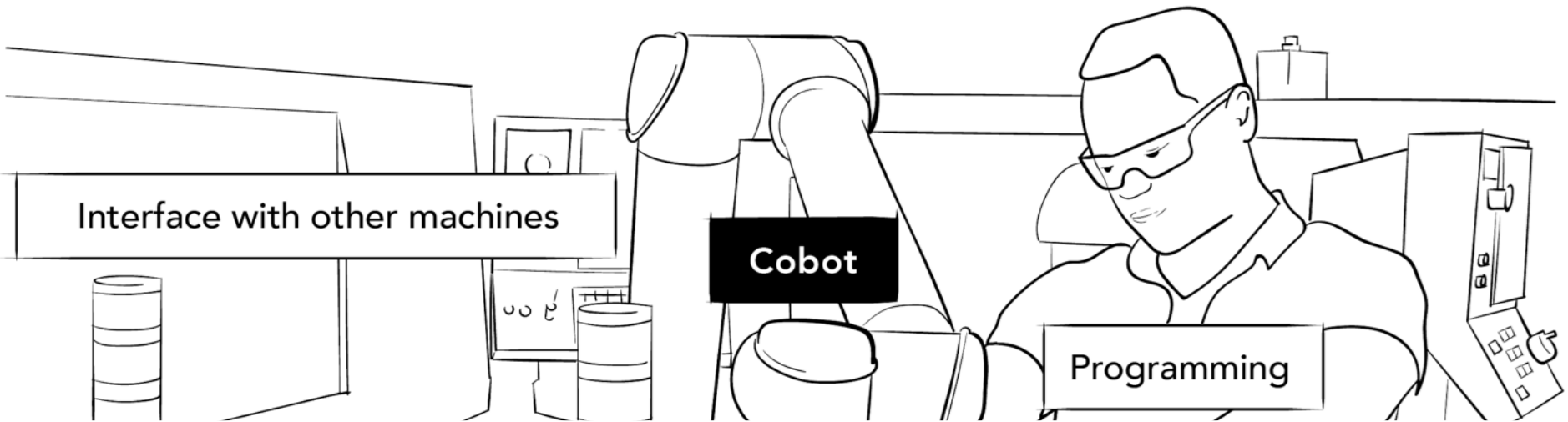


**Continental** 

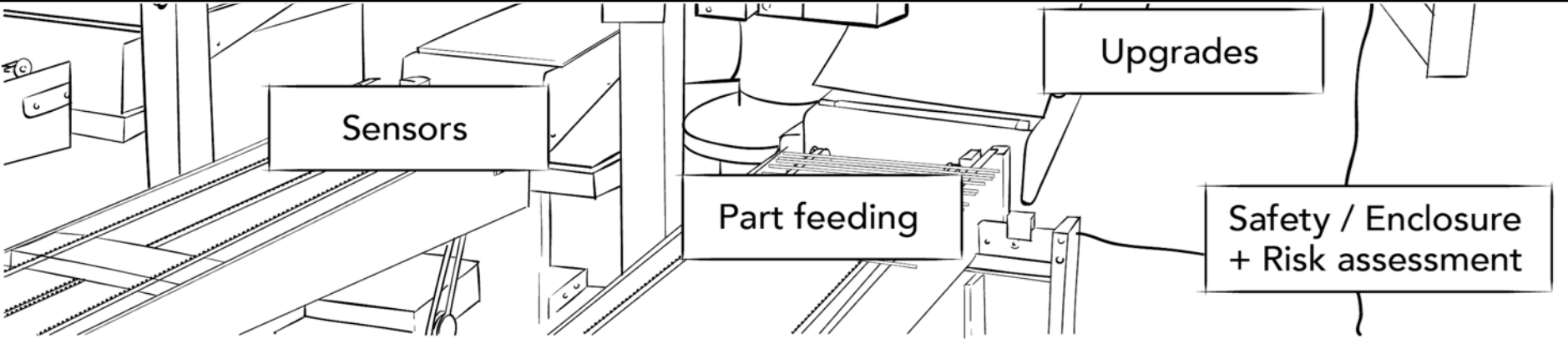
Testing  
Machine tending

# Going from the **cobot**





to your cobot **application**





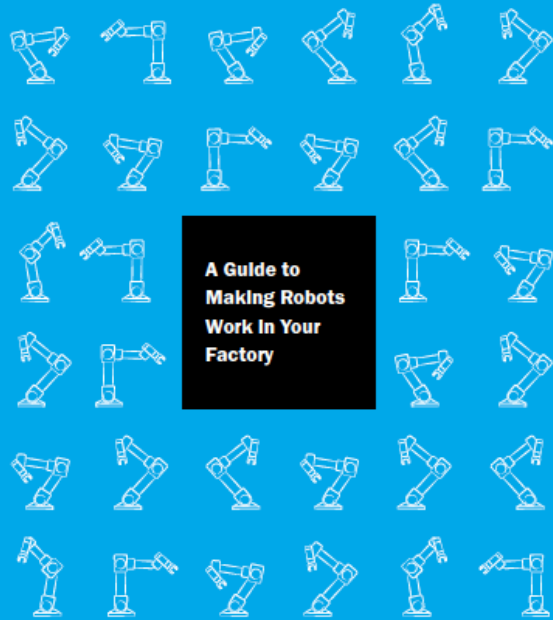
# LEAN ROBOTICS



SAMUEL BOUCHARD

- Step-by-step guide
- Project management tools
- How to get started
- How to scale

# LEAN ROBOTICS



SAMUEL BOUCHARD

## Self Learning



## Robotiq also offers

- Instructor-led Training
- Application Workshops

## DESIGN

Manual process definition

Robotic process concept

Manual-robotic  
comparison

Final robotic cell  
design

*Plans and  
equipment for  
robotic cell*

## INTEGRATE

Off-the-production-line cell  
preparation

Production line preparation

Installation on the  
production line

Training

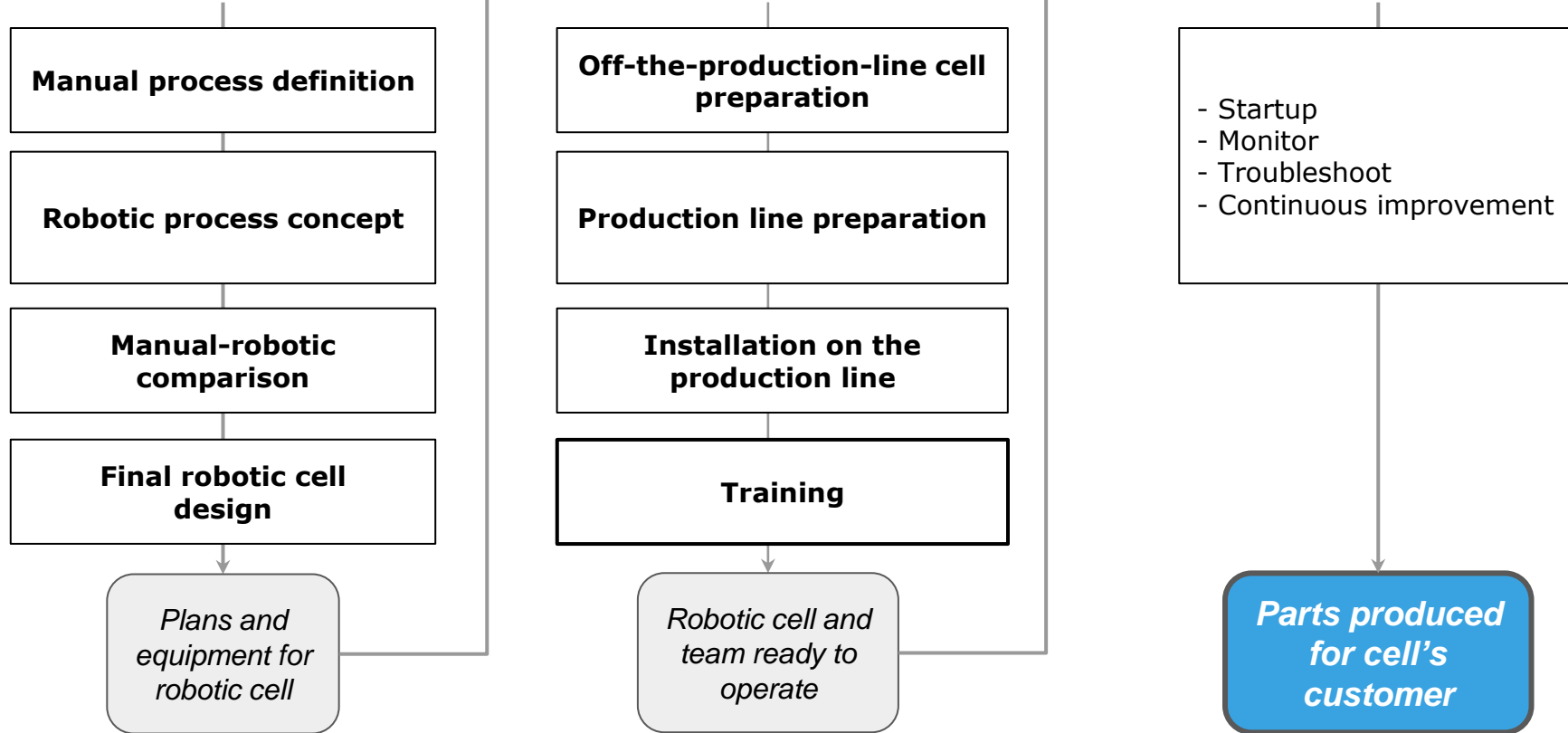
*Robotic cell and  
team ready to  
operate*

## OPERATE

- Startup
- Monitor
- Troubleshoot
- Continuous improvement

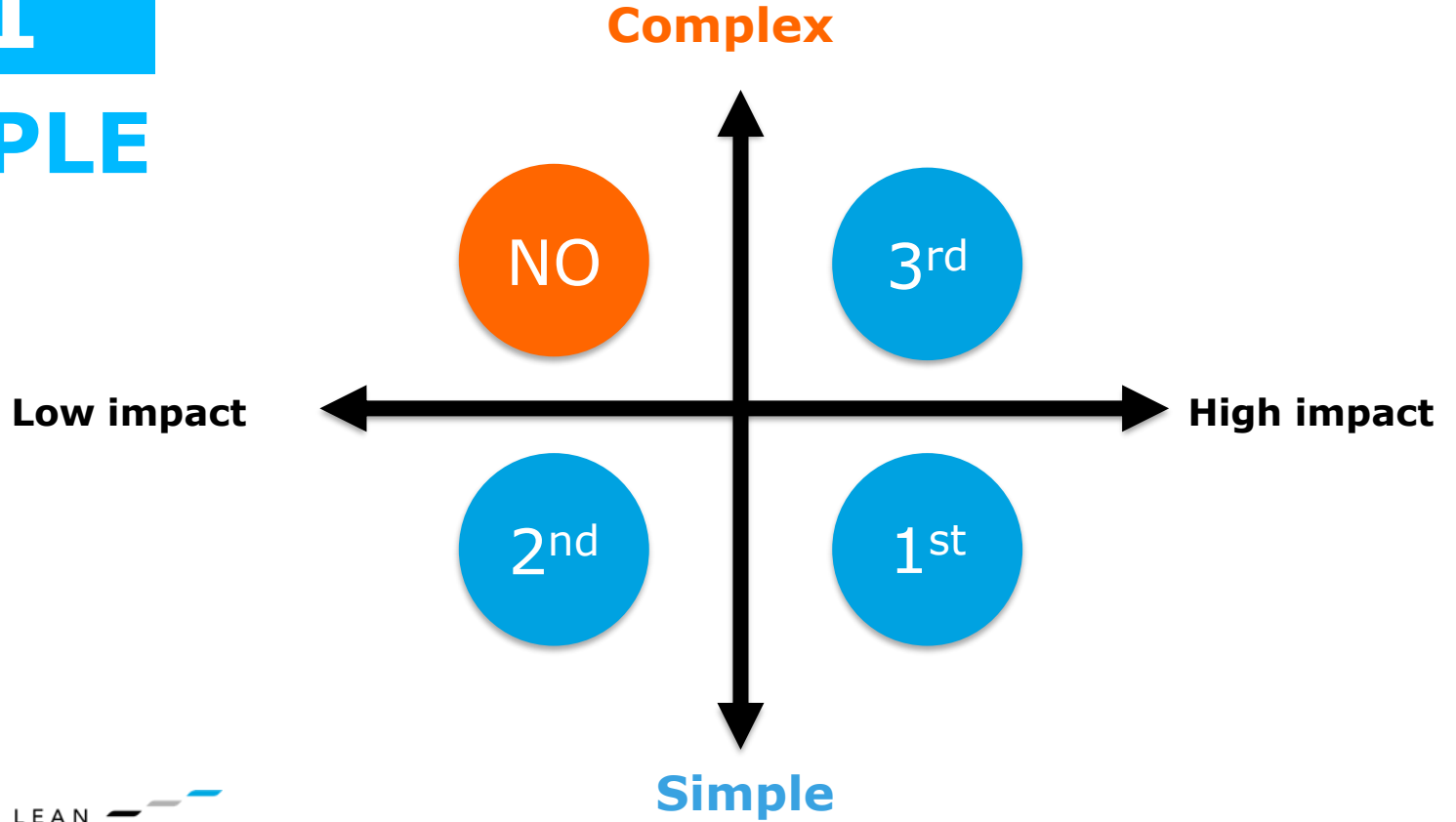
*Parts produced  
for cell's  
customer*

Valuable  
output



# #1

## SIMPLE



# Simplicity for the robot

Easy for human  $\neq$  Easy for robot

Could you do it:

- ☐ One-handed?
- ☐ Wearing a mitten?
- ☐ Eyes shut?





## DESIGN

**Manual process definition**

**Robotic process concept**

**Manual-robotic  
comparison**

**Final robotic cell design**

*Plans and  
equipment for  
robotic cell*

Valuable  
output

# #2

## SYSTEMATIC

**Production line preparation**

**Installation on the  
production line**

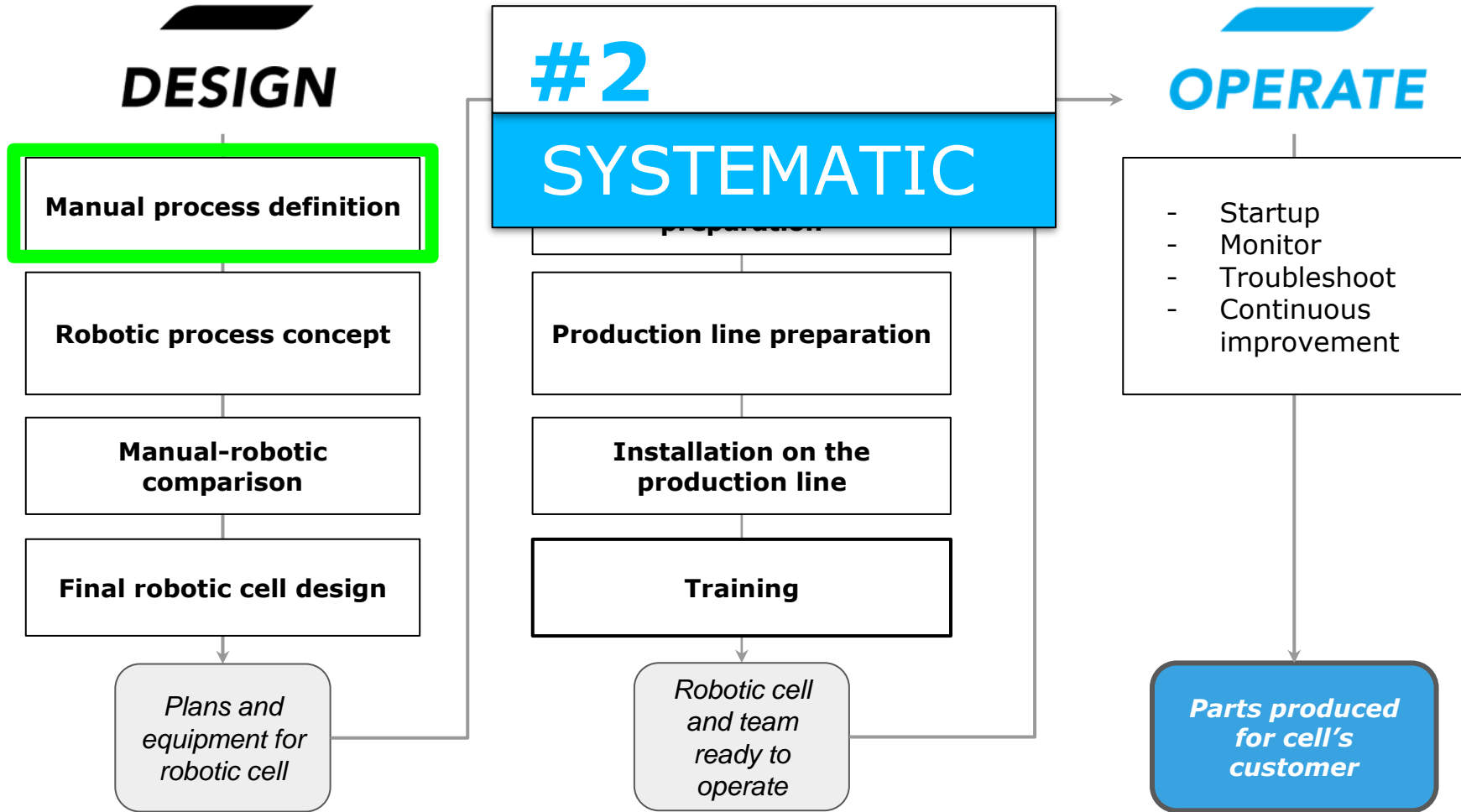
**Training**

*Robotic cell  
and team  
ready to  
operate*

## OPERATE

- Startup
- Monitor
- Troubleshoot
- Continuous improvement

*Parts produced  
for cell's  
customer*



# #3

## STANDARDIZE

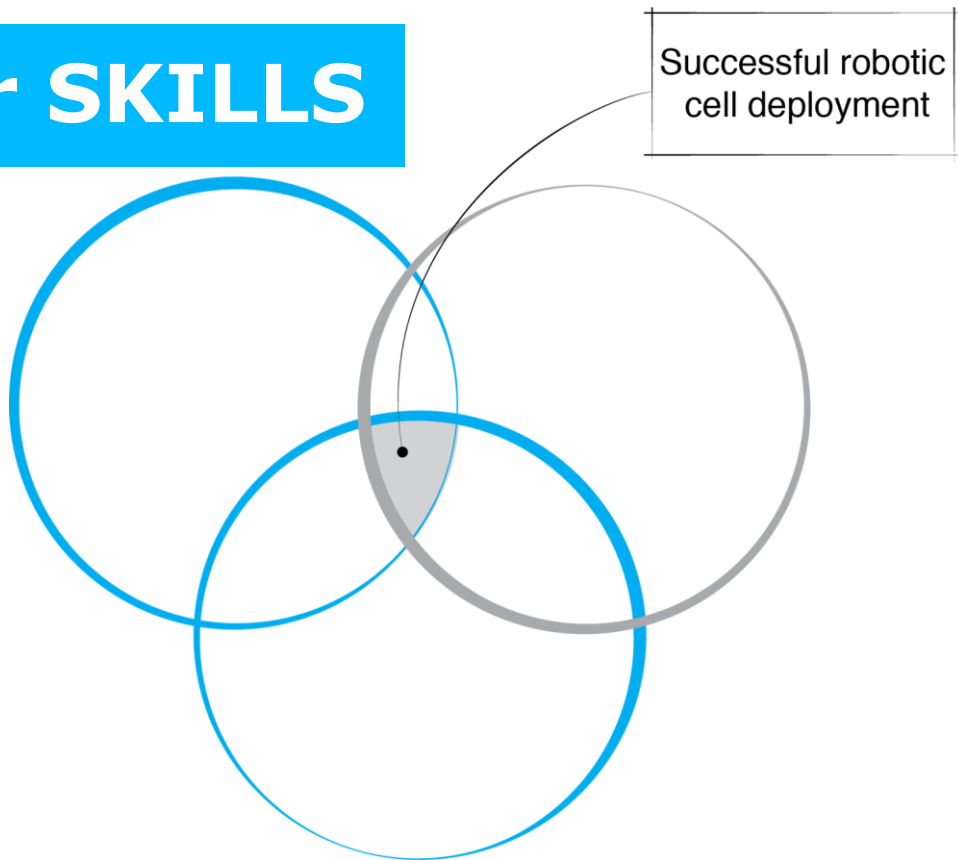


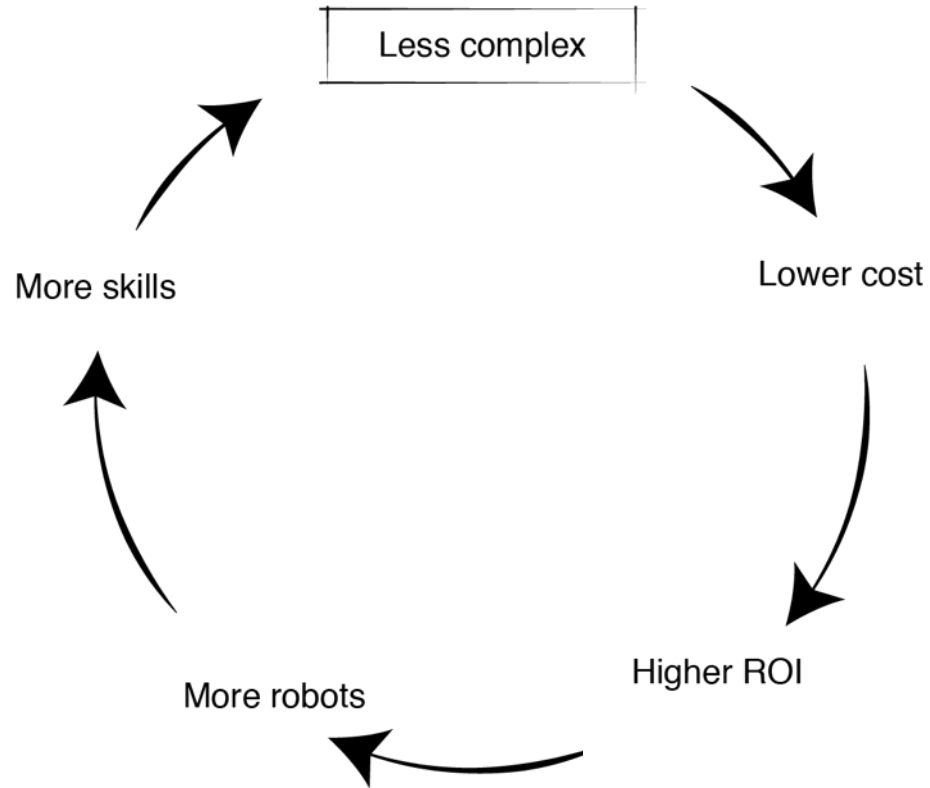
### Custom = Waste

- ✗ Design time
- ✗ Lead time
- ✗ Installation time
- ✗ Programming time
- ✗ Training time
- ✗ Troubleshooting time
- ✗ Maintenance time

# #4

## Grow your SKILLS





# The First Cobot Project Checklist

## ☑ **SIMPLE**

- Start Simple
- Keep it Simple

## ☑ **SYSTEMATIC**

- Understand the manual task 1st
- Invest small early to save a lot later

## ☑ **STANDARDIZE**

- Use standard modules

## ☑ **SKILLS**

- Get the team involved
- Grow you robotics skills



# Why robots?



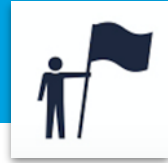
Quality,  
consistency



Cost reduction



Increased  
capacity



Human factor  
(scarcity, health  
and safety, growth)

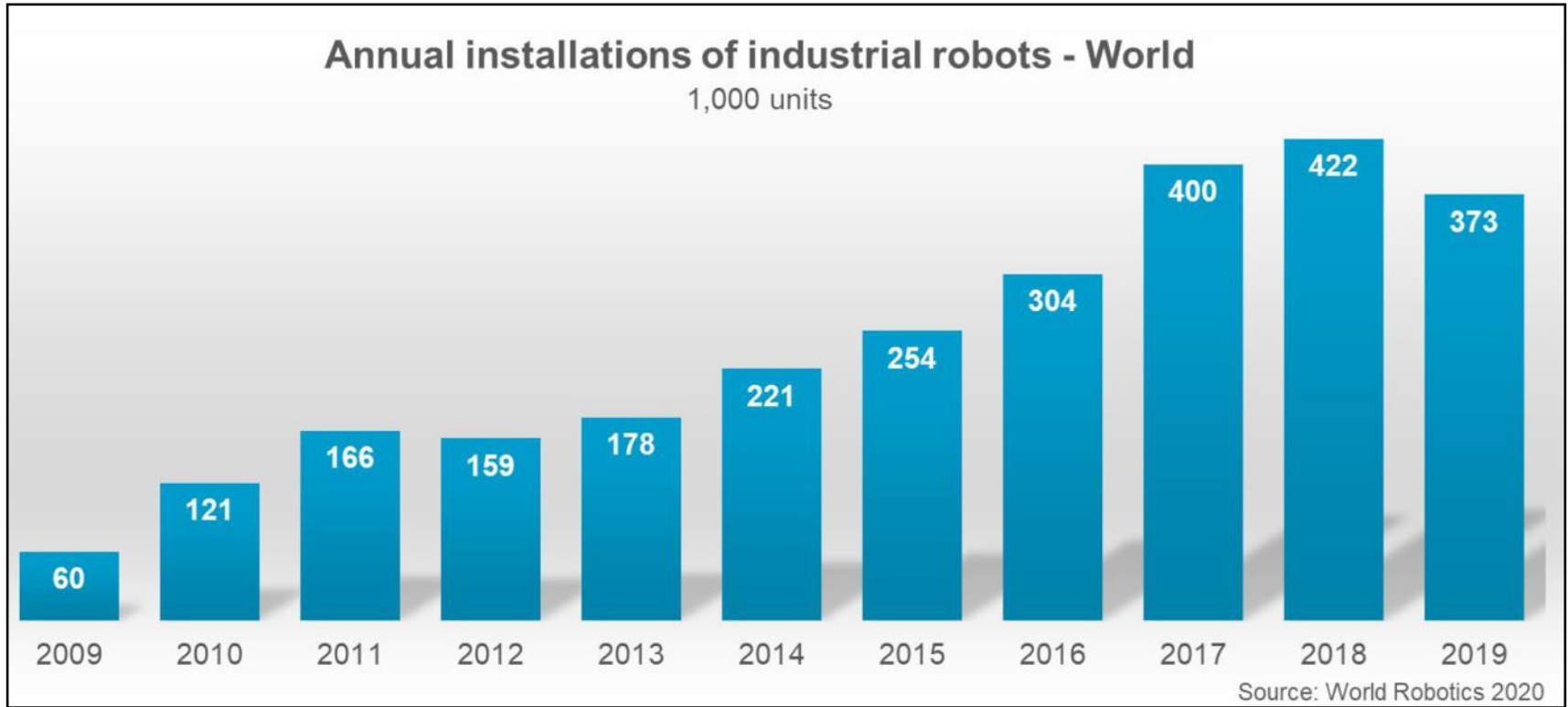
## Aligned with your company strategy?

A person is running away from the viewer on a dirt path that leads into a misty forest. The sun is low on the horizon, creating a strong orange and yellow glow that fills the scene. The trees are silhouetted against the bright light, and the overall atmosphere is one of early morning or late afternoon.

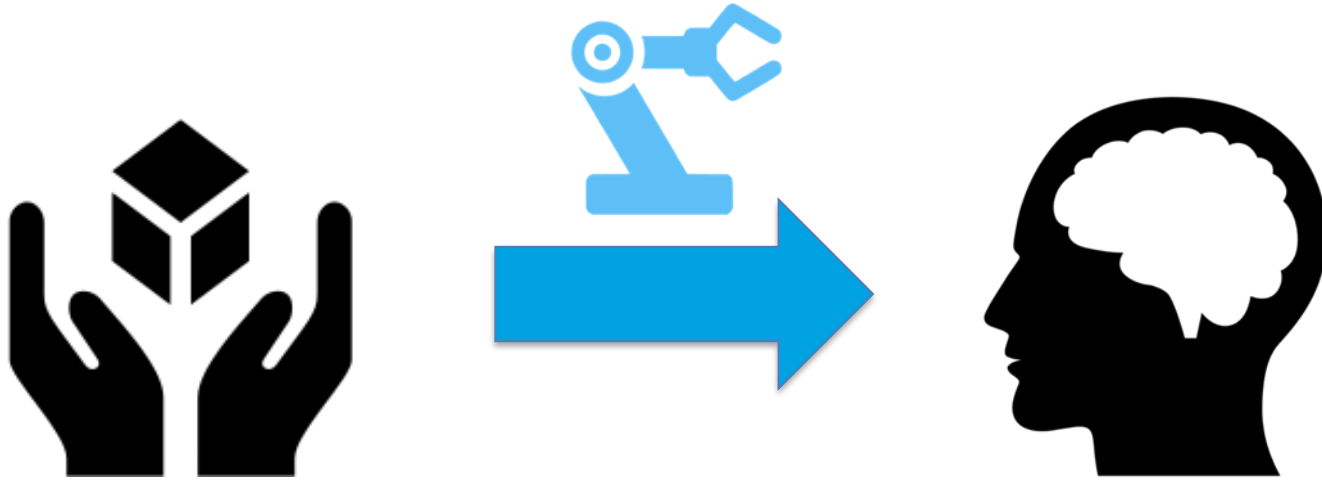
# Is Now the Right Time?

- **What will your company and your industry look like post-COVID?**
- **...and what about your reasons to automate?**

# Is NOW the right time?



# Is NOW the right time?

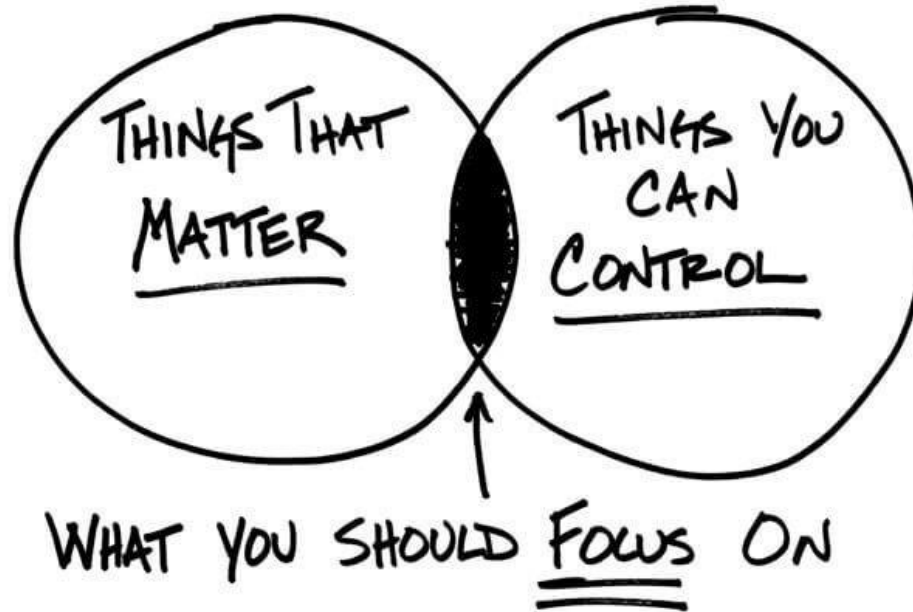


Expect high demand for robotics skills post-COVID

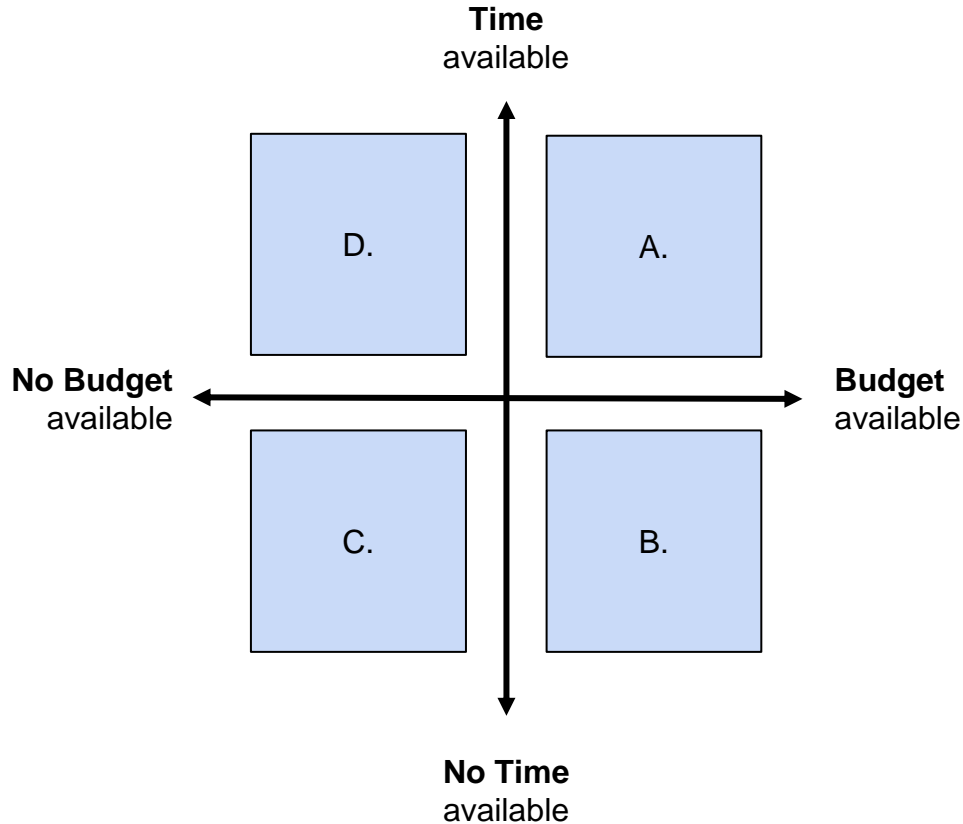
**What to Focus on Now?**



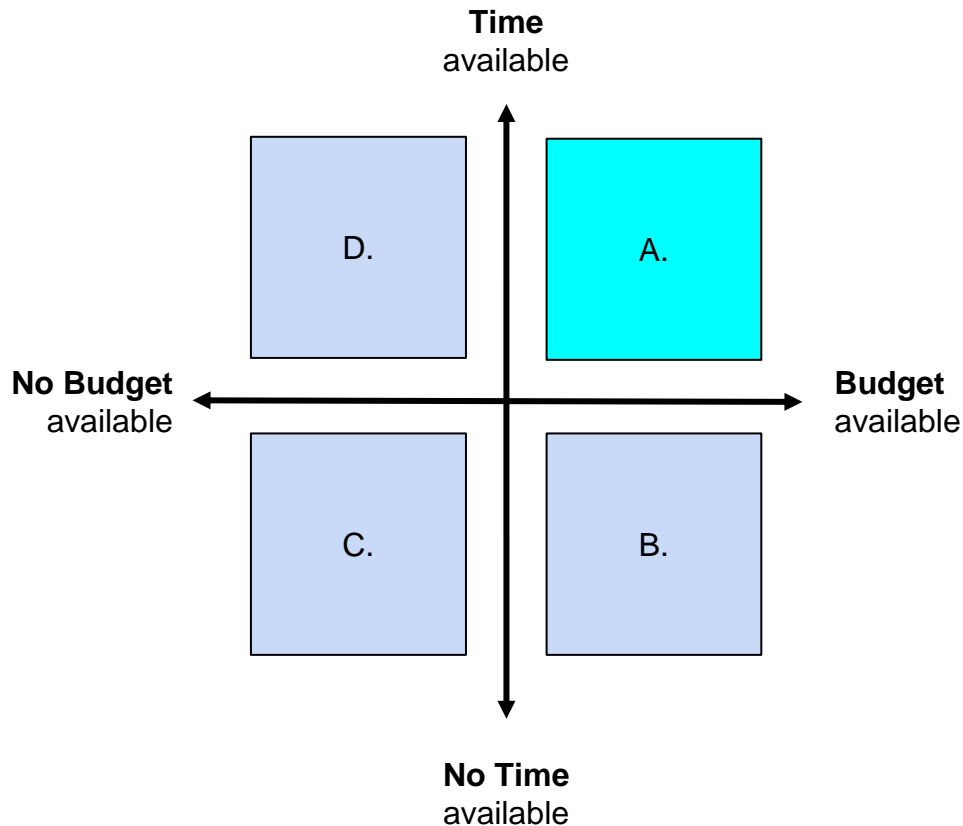
# ■ Dealing with Uncertainty



# What is your situation?



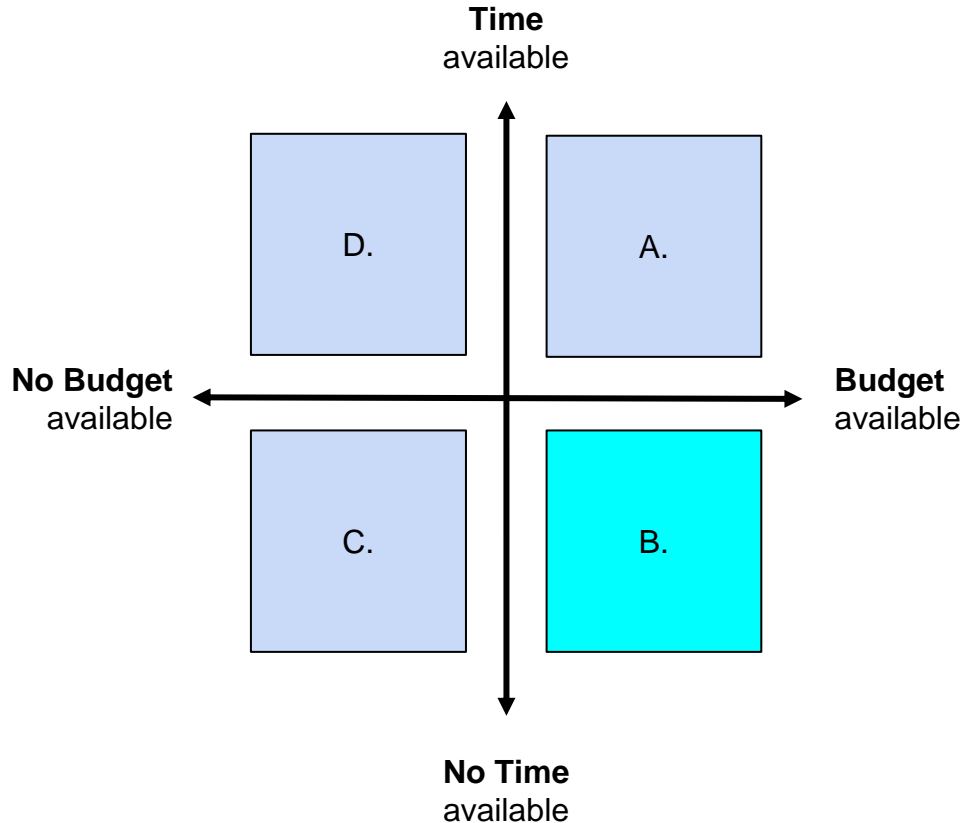
# What is your situation?



## A. Plan and Deploy

- Evaluate applications (effort VS reward)
- Start simple
- Learning by doing

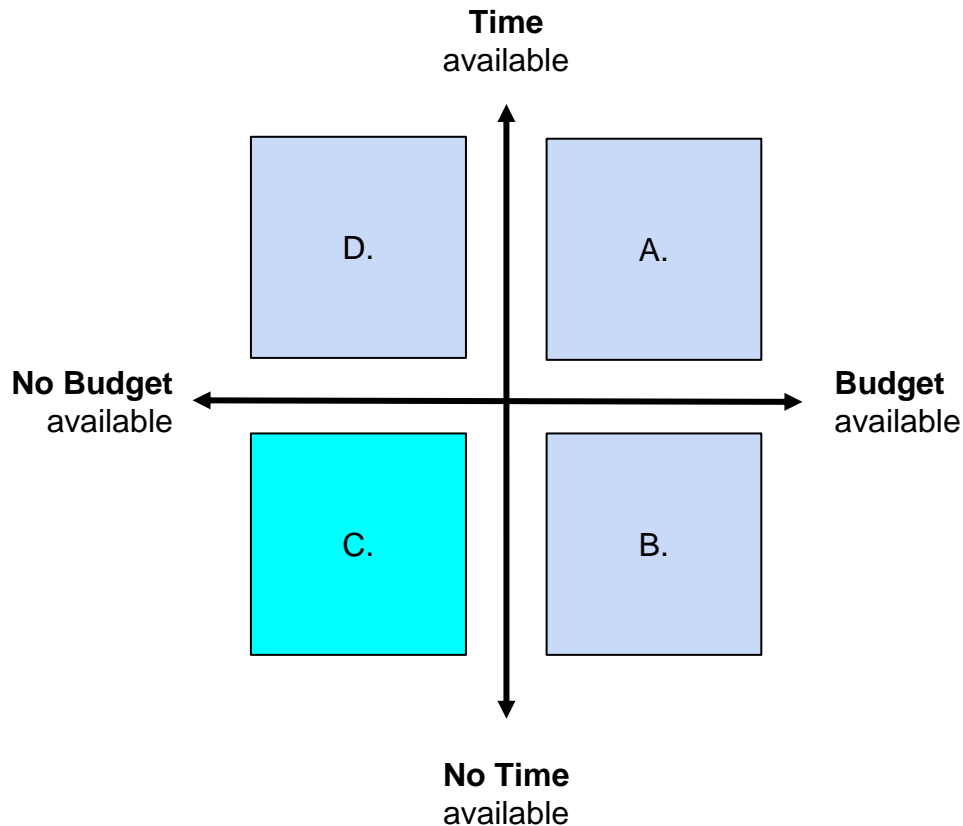
# What is your situation?



## B. Find Allies and Deploy

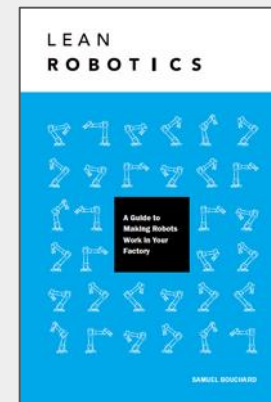
- Leverage trusted partners
- Evaluate applications (effort VS reward)
- Start simple
- Stay involved to build know-how

# What is your situation?



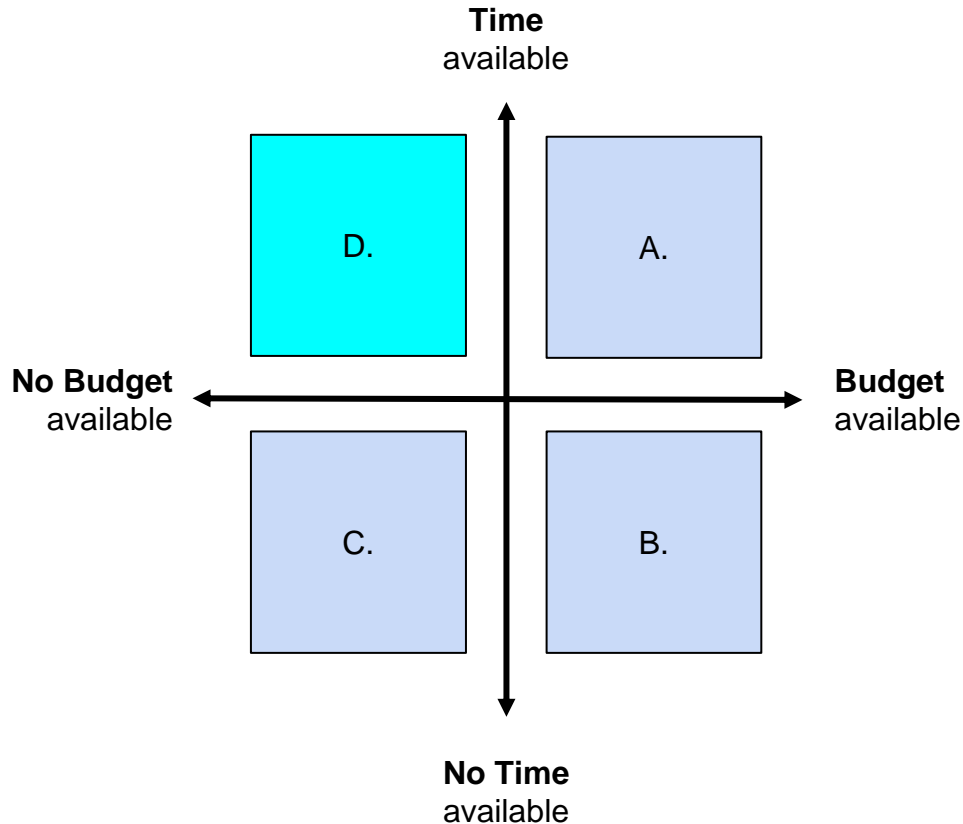
## C. Invest in yourself

- Carve out some time to learn
  - [LeanRobotics.org](http://LeanRobotics.org)
  - [elearning.robotiq.com](http://elearning.robotiq.com)



amazon

# What is your situation?



## D. Plan your Projects

- Evaluate applications (effort VS reward)
- Map the manual processes
- Define robotic cell concepts and get budgetary estimates

# Selecting Applications



How to  
Select?

# Selecting Applications - General

For Robotics in General

Look for processes and tasks that are:

- ❑ Dull
- ❑ Dirty
- ❑ Dangerous/Ergonomic Issues





# **Selecting Applications - Cobots**

## Where to Look for Collaborative Applications

- ❑ Simple applications
- ❑ Highly manual processes
- ❑ Similar processes/tasks that are not fully utilized 24/7

# ■ Selecting Applications - Cobots



# ■ Key Collaborative Advantage

Enables partial automation opportunities where it was  
“All or Nothing”



# ■ Key Collaborative Advantage



# Successful Application Features

Cobots provide value and succeed when:

- ❑ Low speed - 6-8 cycles per min
- ❑ Low payload - less than 10kg typically
- ❑ Little or no robotics expertise available
- ❑ Processes/Machinery with Low Utilization
- ❑ Processes previously seen as uneconomical or too complex where partial automation may be feasible or desirable

# Ensuring Safe Applications

Follow the standards

- ❑ U.S. – RIA 15.06
- ❑ International – ISO 10218
- ❑ ISO TS 15066

Key Requirement in Each:

***RISK  
ASSESSMENT!!!!!!***





# Collaborative Risk Assessment

## Not just for the robot

- *A comprehensive risk assessment is required to assess not only the robot system itself but also the environment in which it is placed, i.e. the workplace. “ (TS 15066)*

## 4.3 Hazard identification and risk assessment

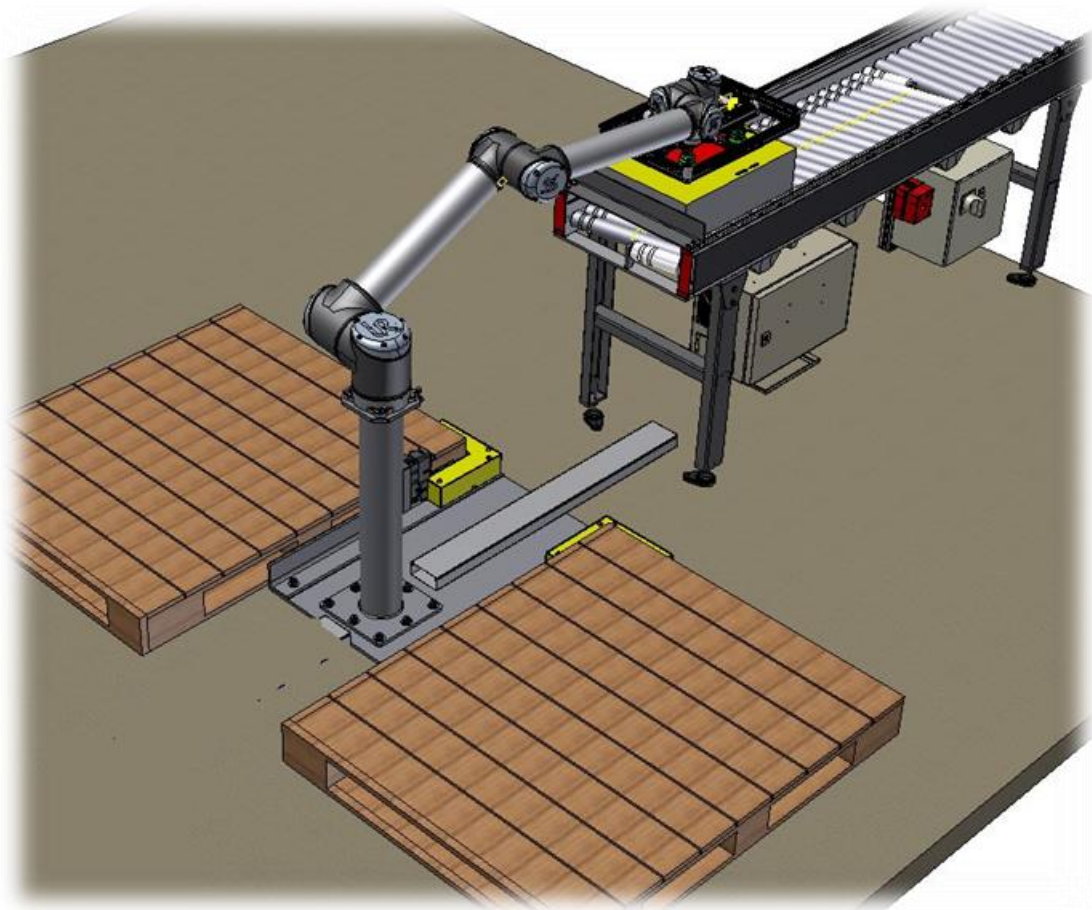
### Shall consider:

- Robot related hazards
- Hazards related to the robot system
- Application related hazards



# P&G's 1<sup>st</sup> Collaborative Application

CoPAL





# Hazard Mitigations Methods

Design out by geometry and limits

Padding

Collision detection

Envelope or reach limiting

***Force or speed limiting***

Selective use of scanners or traditional guarding in critical areas



Add impact by robot wrist



Add impact by robot arm



Crush between arm  
and fixture



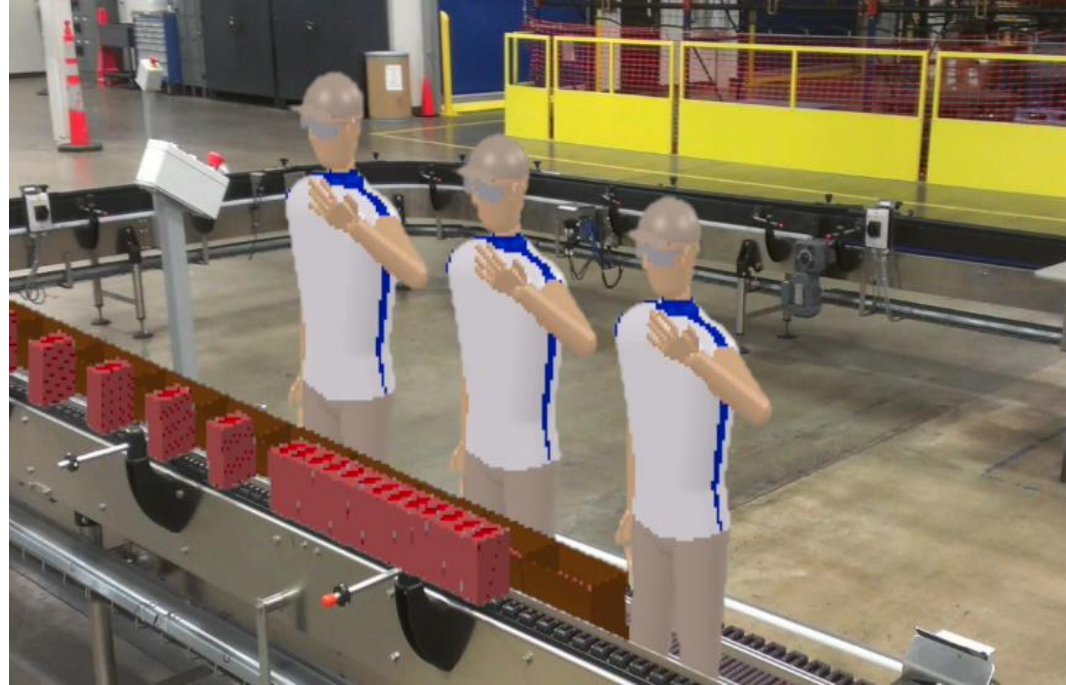
Crush between arm and  
non-supporting structure

*Reference RIA TR R15.306 as a  
guide to Risk Assessment Process*

# Final Copal Design



# Our Next Application - Case Packing



# ■ Concept Development



**the next standard CoBOT solution package!**

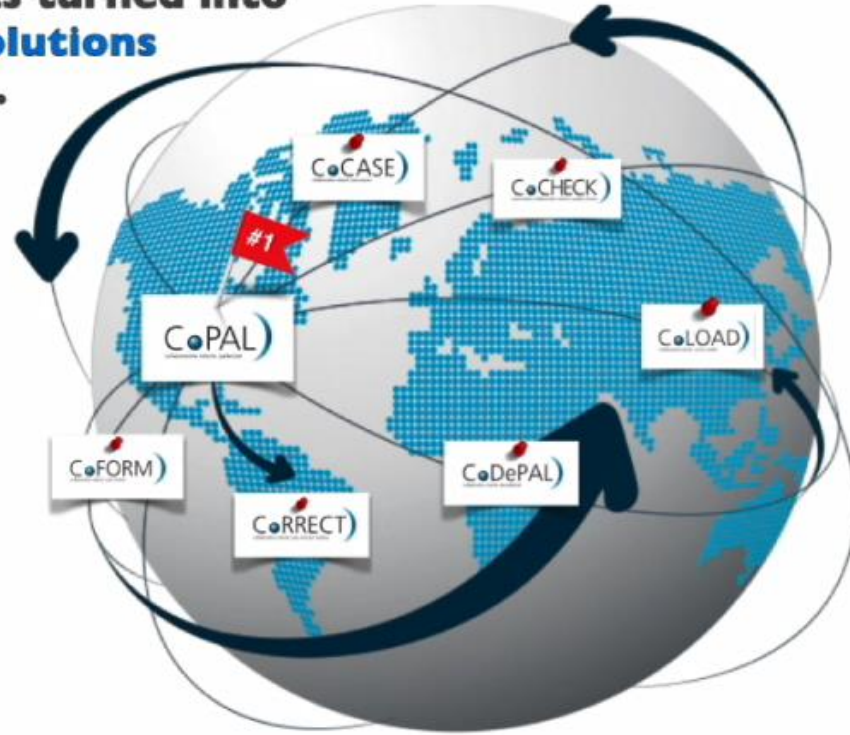


# CoCase Design



# Global Expansion

**1st CoAPP has turned into  
7 Standard Solutions  
and growing...**



THANK YOU



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## Q&A

