

I-SMART: Implementing Small Manufacturer Assistance with Robotic Technologies



Are you Prepared?



WHAT IS I-SMART?

- A federally-funded program to support automation and robotics services for U.S. manufacturers.
- Provides manufacturers with access to MEP automation experts to:
 - *Identify automation opportunities*
 - *Develop the business case for specific applications*
 - *Connect manufacturers with additional automation resources*
 - *Assist with preparing for automation deployments*
 - *Consult on post-deployment optimization*
- Emphasis on helping manufacturers get “quick-wins” (fast payback)

What CAN I-SMART DO FOR ME?

- Start with a free automation implementation evaluation
 - *Remote or on-site visit by MEP/industry experts*
 - *Evaluate suitability of potential applications*
 - *Determine business case for best option(s):*
 - Cost/savings
 - Return on investment and payback period
 - *Provide written report to company on findings*
- Identify options for solution providers, assist with RFPs




WHAT CAN I-SMART DO FOR ME?

- Provide pre-deployment assistance
 - *Help plant leaders prepare workers for automation*
 - *Assist with redesign of process using Lean*
- Offer post-deployment support
 - *Replicate success of “quick-wins”*
 - *Generate additional business cases*
 - *Help optimize process*



WHAT CAN I-SMART DO FOR ME?

- Typical Process
 - Schedule date/time for site visit
 - Complete pre-visit questionnaire
 - Meet with key stakeholders
 - Tour shop floor and gather information on potential applications
 - Calculate financials
 - Provide written report on findings

Application Information Form				Date: 7/31/18	
Company: [REDACTED]		Location: [REDACTED], IN		Contact: [REDACTED]	
Necessary Reach: Est URe 3 or 5		Line Identifier/Description: Deburr		Rating: (A) (B) (C) (X)	
Shifts: Currently 8hrs per day/5 days a week. Bottleneck.		Part Size: 5 springs for high volume	Part Weight: grams	Throughput/Cycle: 150-200 per hr	Pick multiples? possible
Automation Driver(s):		Considerations/Challenges:		Image/Notes:	
<input type="checkbox"/> Repetitive Motion Injury or other hazards <input type="checkbox"/> Ergonomics Improvement <input type="checkbox"/> Hiring difficulties <input type="checkbox"/> Retention/Turnover issues & training <input checked="" type="checkbox"/> Quality/Consistency issues <input checked="" type="checkbox"/> Labor costs <input type="checkbox"/> Other		<input type="checkbox"/> Bin pick <input type="checkbox"/> Dexterity <input type="checkbox"/> Visual inspection <input checked="" type="checkbox"/> Precision/Tolerance <input type="checkbox"/> Low % able to automate w/Robot <input type="checkbox"/> Complex grippers		<input type="checkbox"/> Environment <input type="checkbox"/> Reach <input checked="" type="checkbox"/> Push/Pull force <input type="checkbox"/> Changeover time <input checked="" type="checkbox"/> Ability to integrate	
					
Notes: <ul style="list-style-type: none"> • Integration Note – <ul style="list-style-type: none"> ○ 8 total grinding stations ○ Likely 2-4 stations at new facility ○ Could isolate parts to always have at same deburr station ○ Cart / Array Tray system to be developed • Pick parts out of an array <ul style="list-style-type: none"> ○ If in well for picking – 1/8" each - in well / grip / above • Likely pick by OD in center of part <ul style="list-style-type: none"> ○ Gripping force could be several hundreds of newtons due to strength of spring • Part deburred on leading & back edge – OD & ID – 2 orbital rotations each • Force Torque Sensor (embedded in e-Series) to apply constant force • Track part counts to determine changing/maintenance of bit <ul style="list-style-type: none"> ○ Currently avg 1000 parts per bit change • TBD if parts go back in same pick position vs. into tumbler tote 					

QUESTIONS? WANT MORE INFORMATION?

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Formic Technologies

Adopt Automation Faster



Covered Topics

- Current State of Manufacturing
- What's RaaS?
- Typical Applications
- How do you get started ?
- About Formic



According to National
Association of Manufacturers

2.4M

488,000

Unfilled Jobs Q1 2019

Unfilled manufacturing jobs by 2028

10,000

Boomers Reach Retirement
Everyday

27%

Of manufacturing workforce
are 55+

28%

Manufacturers Turning Down
New Business

What's the solution?

Automation !
But...

- Expensive
- Complex to to deploy
- Maintenance and upkeep is complicated
- Hard to calculate a true return on investment



Automation Adoption

Using System Integrators

- Expensive
- Lots of options to choose from
- Limited after sales support

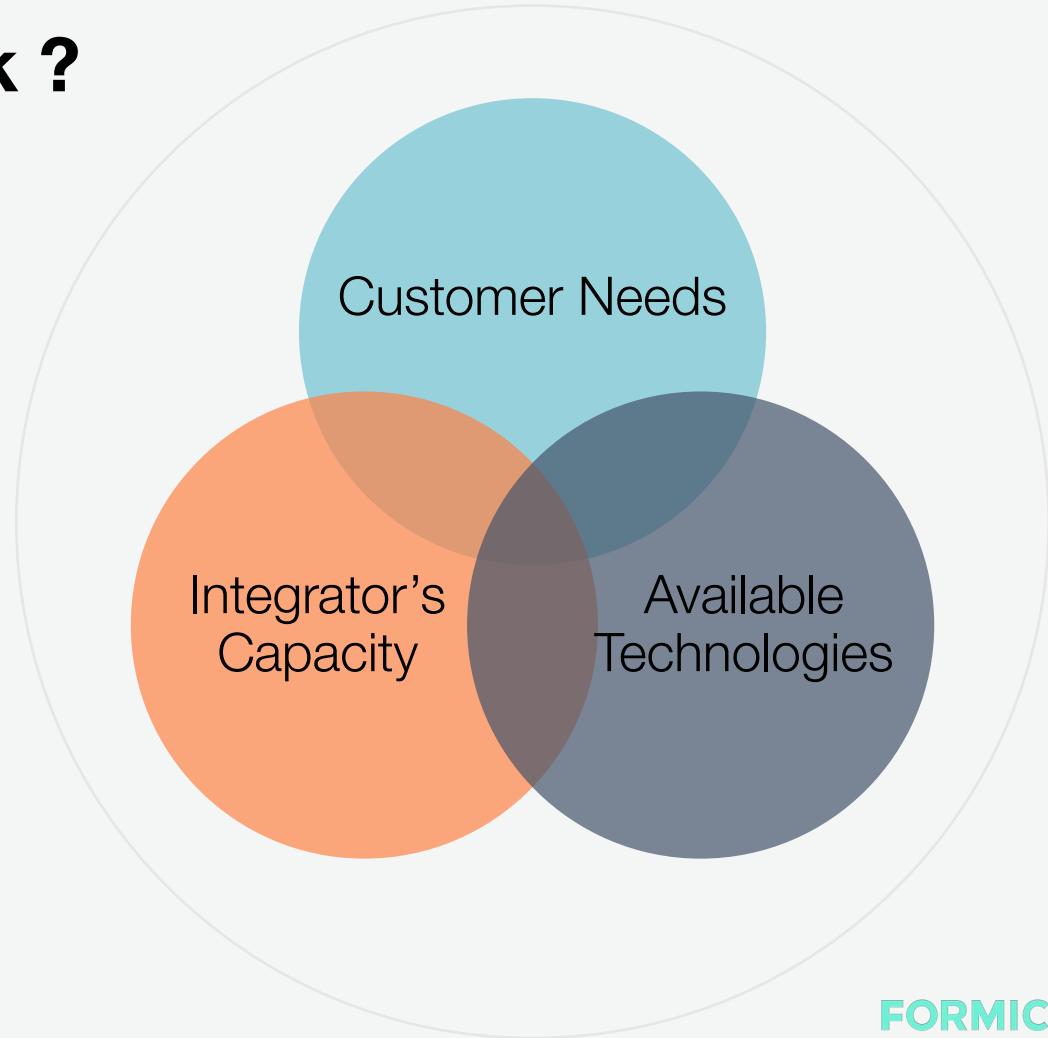
Integrating Robots in House

- Slow adoption curve
- High turnover
- Lack of talent to hire



Where's the Bottleneck ?

- Automation is highly fragmented.
- Customers are too busy running their business to navigate all the different options.
- Technologies are rapidly advancing for integrators and end-users to keep up.
- Buying new piece of custom automation could be risky for end-users.
- Integrators are only winning small portion of the business they quote which results in wasted efforts.



We want

to make automation as risk-free as possible for manufacturers through RaaS.

How ?

- Turnkey systems designed for your application
- Pay per hour just like you'd pay an operator
- Always have the latest and the greatest (free upgrades)
- Pay per performance not features.



Why Formic ?



Quick Deployment

Get a system deployed in as little as 4 weeks.



Immediate ROI

Hourly rate on average is 40% less than a regular employee.



Scale Quickly

Don't wait for CapEx cycles to deploy automation. You could scale quickly and hire more when you need it.



Upgrades and Maintenance Included

We insure your system's maximum uptime with routine maintenance, performance upgrades and onsite support.



Performance Satisfaction Guaranteed.

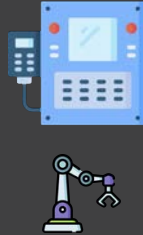
If the system isn't performing you don't pay.

Quickest Way To Automate

Typical Applications

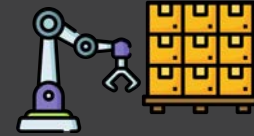
Machine Tending

- Grinding
- Milling and turning
- Injection molds
- Stamping, punching, trimming and forging
- Compression molds



Packaging

- Palletizing
- Case Packing
- Carton Erecting



Welding

- MIG
- TIG
- Laser



Inspection

- Presence Absence
- Dimensional Check



Week 1



We create the scope of work and send an RFP Integrators for estimated system cost.

Week 2



We provide hourly rate based on the cost of the system. Once approved by the customer we place the order with the Integrator.

Week 3-6



Drawings submitted to Formic for final approval.

Week 6-12



System installed, commissioned and ready to work.

Week 4-12+



We monitor the system remotely and bill the customer biweekly.

Is your Operation Ready for RaaS?

- You run 40+ hours a week.
- Operation needs dedicated labor 60% of the time.
- You're struggling to find quality workforce.
- You're looking to increase your production capacity.

Get in touch: Fill out the form at www.formic.co/interest to see if your project qualifies

OUR ADVISORS



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TEAM



Saman Farid

Co-Founder and CEO



Misa Ilkhechi

Co-Founder and VP of Robotics

We have hired 2 application engineers that are coming on board within the next 2 weeks and planning to hire 3 more by the end of the year.