



# Manufacturing Cybersecurity Cooperative Overview

December 12, 2017

## **Chris Conrardy**

CTO and VP Strategic Initiatives, EWI  
[cconrardy@ewi.org](mailto:cconrardy@ewi.org)  
614-688-5191

## **John Gilbert**

VP Strategic Planning, Blake Philips  
[support@blake-Philips.com](mailto:support@blake-Philips.com)  
270-535-8873

## **Connie Reichert LaMorte**

Principle Engineer, EWI  
[creichert@ewi.org](mailto:creichert@ewi.org)  
614-688-5247



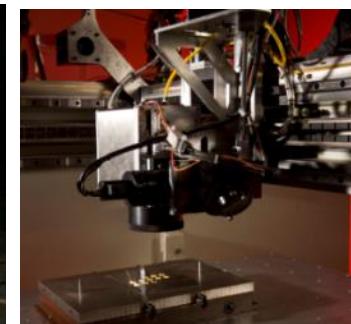
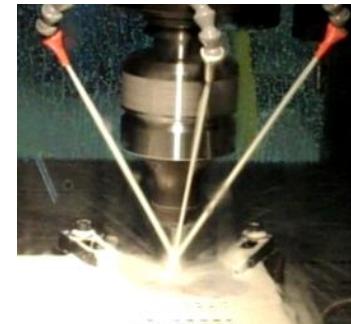
*We Manufacture Innovation*



# About EWI



- Non-profit manufacturing technology organization
- Serving broad range of manufacturers for over 30 years
- Developing and implementing advanced manufacturing technologies to improve product performance, quality, reliability and cost
- Deep technical capabilities and expertise in many advanced manufacturing technologies with >150 staff across three locations
- Building new capabilities, partnerships and services to increase impact



**EWI**



# New Technologies Are Transforming Manufacturing

***“America’s factory floors are either already in a disruption cycle - or expect to enter one in the next couple of years”***

- Brookings, 2016

## 3D Printing



## Agile Automation



## Internet of Things



**New digital technologies can create new cyber vulnerabilities!**

**EWI**



# Cyber Defense Disparity

- DoD and big companies can afford the best defense, sending hackers along the path of least resistance.
- Small companies often left to fend for themselves with firewalls, policies, and off-the-shelf antivirus software.





# Responding to SMM Cybersecurity Challenges

- Talent pool insufficient to meet demand and largely concentrated in major urban areas
- Many small and medium size manufacturers (SMMs) have not implemented adequate and sustained cybersecurity
  - Some are struggling to comply with new NIST 800-171
  - Lack the expertise, talent, and resources to adapt to constantly changing threats
  - Lack adequate cybersecurity policy and administration
  - Current cybersecurity support options too costly for many
- **SMM Cybersecurity Co-op Goals:**
  - Expand the talent pool
  - Provide affordable options for SMMs
  - Connect to network of existing providers
  - Fill gaps in the cybersecurity ecosystem where needed



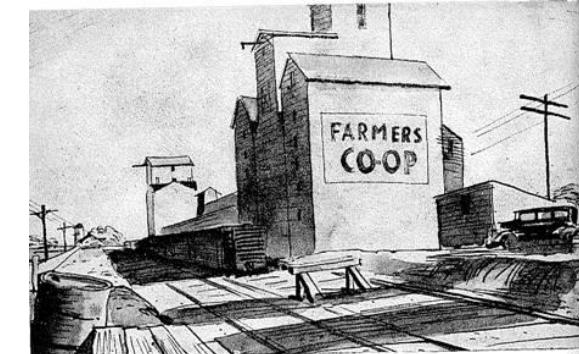
**CYBERSECURITY FOR MANUFACTURERS:**  
Securing the Digitized and Connected Factory





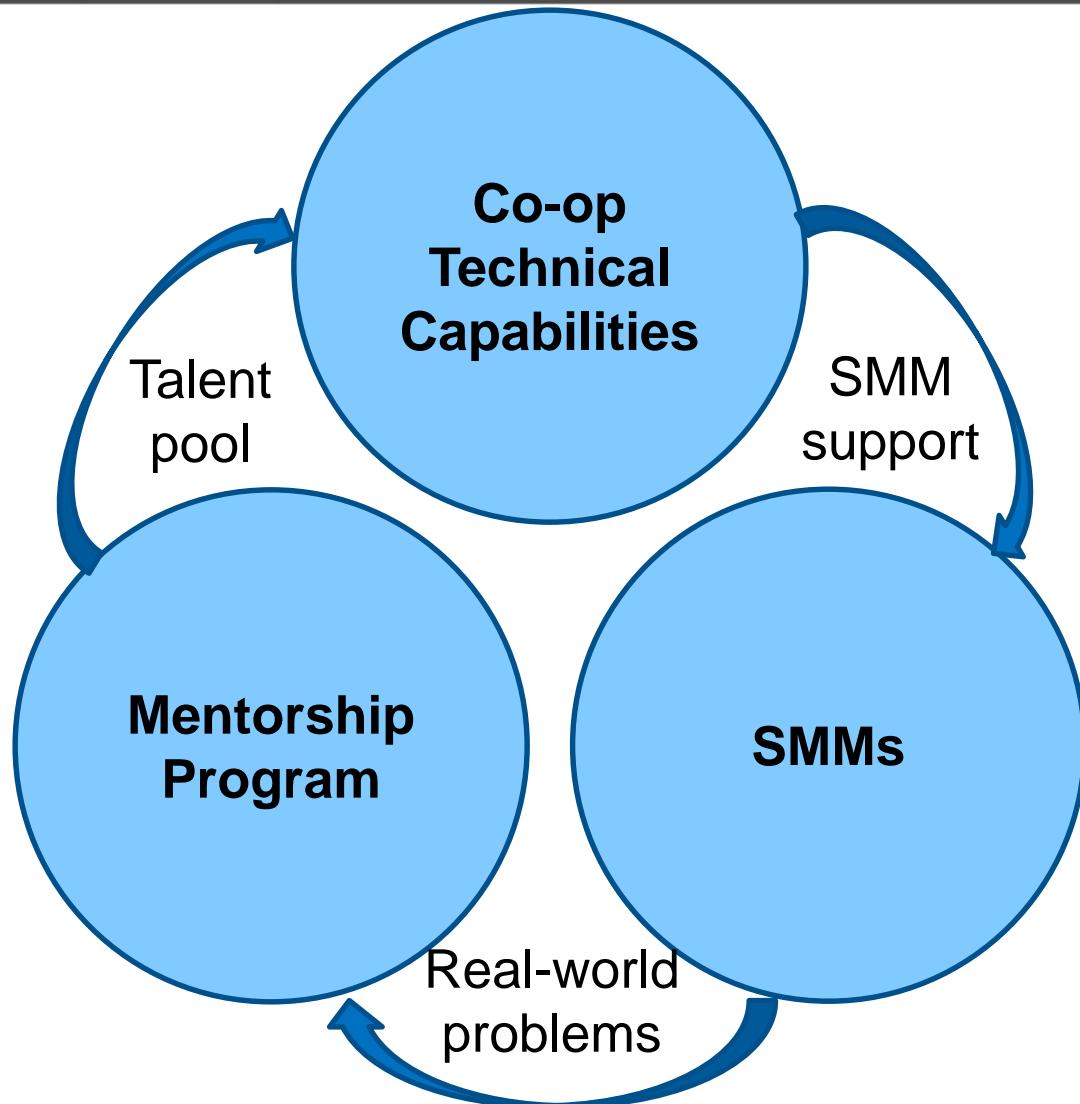
# SMM Cybersecurity “Cooperative” Concept

- Distribute cost of talent and infrastructure across many SMMs
  - Similar to the farm co-op model
  - Tailored to the particular needs of SMMs
- On the job training (OJT) Network Defense Analyst training
  - Geographically distributed apprentice program to address a critical shortage of talent
  - Connect capable talent in rural communities to job opportunities
  - SANS certified expert instruction
- Services tailored to SMMs at an affordable price
  - Vulnerability and compliance assessment
  - Ongoing network monitoring to detect intrusion
  - Connect to screened service providers to respond when a threat or vulnerability is detected





# Virtuous Cycle: Serving SMMs while Developing Talent



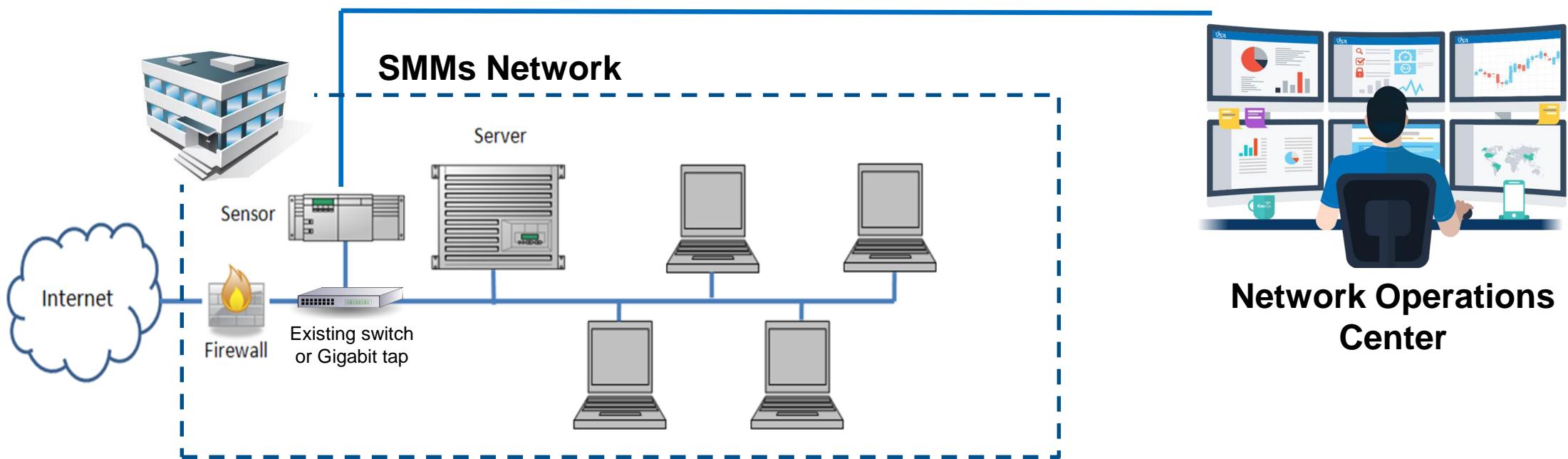
## ANTICIPATED BENEFITS:

- **SMMs:** Affordable defense and compliance with requirements
- **Mentees:** Elite on-the-job training, industry-recognized certification, employment opportunities
- **Communities:** Protected cyber ecosystem for SMM businesses, rural employment opportunities, sustainable co-op business model



# SMM Network Monitoring

- Live analyst 'human-in-the-loop' network defense
  - Proven DoD effective
  - Keeps management and IT staff informed of threats
  - Does not: 1) interrupt service, 2) burden the SMM network, 3) compromise privacy

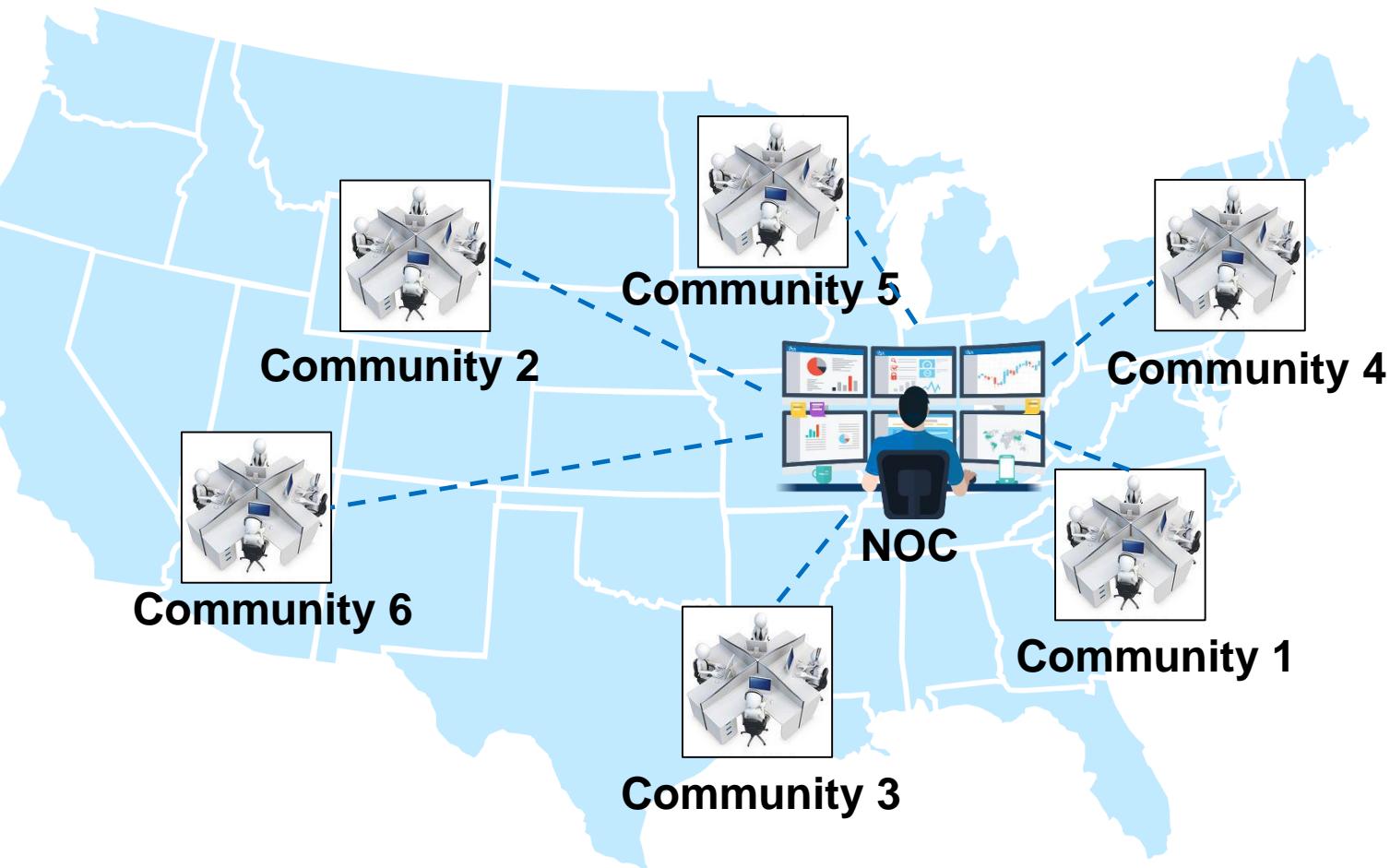


**Network Operations  
Center**



# Co-op Scale-Up

Distributed network of OJT mentoring and SMM support sites





# SMM Cooperative Cyber Defense Core Team



- **Jim Ettinger, Senior Analyst**
  - Highly experienced DoD and commercial Network Defense Analyst
  - Nationally recognized SANS Mentor
  - Certifications: GSEC, GCIA, GAWN, MCP, CEH, CNDA
- **Kellen Kapelis, Security Analyst**
  - Strategic Intelligence and Military Communications background
  - Network and physical security expert
  - Certifications: A+, Security+, Network+, Licensed Private Investigator, Top Secret Clearance
- **John Gilbert, Compliance Analyst**
  - Strategic Intelligence, Human Intelligence, and Signals Intelligence background
  - Network security and human factors (Social Engineering) expert
  - Certifications: A+, CEH, SEPP, Licensed Private Investigator, Top Secret Clearance



# Pilot Project to Test the “Co-op” Approach Kicking-Off Next Week

## Seeking SMM input and partner interest

- SMM input on specific co-op services
- Interest from communities to host a co-op OJT mentoring and SMM service center
- Partner interest to connect co-op with existing capabilities
  - IT service providers, cybersecurity firms, educators, researchers, manufacturing associations, government programs, etc.



# EWI Facilities and Labs

EWI is the leading engineering and technology organization in North America dedicated to developing, testing, and implementing advanced manufacturing technologies for industry. Since 1984, EWI has offered applied research, manufacturing support, and strategic services to leaders in the aerospace, automotive, consumer electronic, medical, energy, government and defense, and heavy manufacturing sectors. By matching our expertise to the needs of forward-thinking manufacturers, our technology team serves as a valuable extension of our clients' innovation and R&D teams to provide premium, game-changing solutions that deliver a competitive advantage in the global marketplace.



[ewi.org](http://ewi.org)

614.688.5000

**Buffalo, New York**  
Buffalo Manufacturing  
Works  
847 Main Street  
Buffalo, NY 14203  
716.710.5500  
[rlombardo@ewi.org](mailto:rlombardo@ewi.org)

**Columbus, Ohio**  
EWI World Headquarters  
1250 Arthur E. Adams Drive  
Columbus, OH 43221  
614.688.5000  
[info@ewi.org](mailto:info@ewi.org)

**Loveland, Colorado**  
EWI Colorado  
815 14<sup>th</sup> Street SW  
Loveland, CO 80537  
970.635.5100  
[mwillard@ewi.org](mailto:mwillard@ewi.org)



**EWI**<sup>®</sup>