

THE FUTURE OF MANUFACTURING



Thank you for joining.
The webinar will begin shortly



Optimizing Technology, Managing Connections

Our Strategic Webinar Partners



Welcome Everyone
Thank You for Joining

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House Keeping Items



Feel free to send in your questions during the presentation.

Questions can be for the main presenter, or any of the webinar partners.

We will answer them during the Q&A portion toward the end of the webinar

Yeti Soft Cooler give-a-way during webinar!



Must be on webinar to win.

An orange industrial robotic arm is shown against a blue sky background. Overlaid on the image are several white circular icons connected by lines, representing a networked industrial system. The icons include a factory, a location pin, a shopping cart, a Wi-Fi signal, a bar chart, a truck, and a gear with a sun-like symbol.

Manufacturing: The Lifeblood of our Country & Economic Growth

- ▶ According to Forbes Magazine, industries that become nimbler and more flexible will emerge as leaders and move from unrealized vision to practical reality.
- ▶ Competitiveness in the next five years. According to a joint study between MAPI (*Manufacturing Alliance for Productivity and Innovation*) and Deloitte, more than 85% of industrial manufacturers believe that smart factory initiatives will be the main driver of manufacturing.
- ▶ Technology, processes, and operational efficiencies play a big role in this transformation. As an example, Industrial Internet of Things (IIoT) are integral to the smart factory ecosystem. Flexible systems self-optimize performance across a network of factories, suppliers, and partners; self-adapt to and learn from new conditions in near-real time; and autonomously run entire production processes.

Webinar Series Highlights

- ▶ Continued Cybersecurity Education
- ▶ IIoT – Data Driven Manufacturing
- ▶ The Optimal Infrastructure
- ▶ Improving Operational Efficiencies - ROI
- ▶ Clean Power and the Impacts to your Business
- ▶ Legal – What you need to know and why



UberData
Networks



Safety Protection
Grid Solutions



ROETZEL



WEBINAR



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Senior Business Development Director

Helping and supporting manufacturing prosper and
advance forward throughout Northeast Ohio.

Providing small and mid-size manufacturers with easy access to experienced manufacturing consultants.



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Continual Improvement in Operations:

✓ Process Improvement	✓ Maintenance Control	✓ Technical Training/Best Practices
✓ 5S + Safety	✓ Value Stream Mapping	✓ Project Facilitation
✓ Quality Control	✓ Visual Systems + Controls	✓ Lean Culture Implementation

Continual Improvement in Business Development:

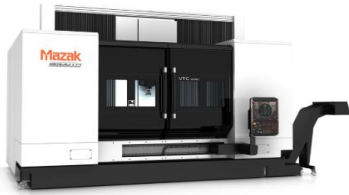
✓ Strategic Planning	✓ New Market Development	✓ CRM Strategy
✓ Market Research	✓ Inbound Marketing & Content	✓ Website Development
✓ Product Development	✓ Marketing Automation	✓ Marketing Communications



ectobox

Industrial Intelligence solutions to help manufacturers do more with what they have and grow.

IIoT / Data Driven Manufacturing



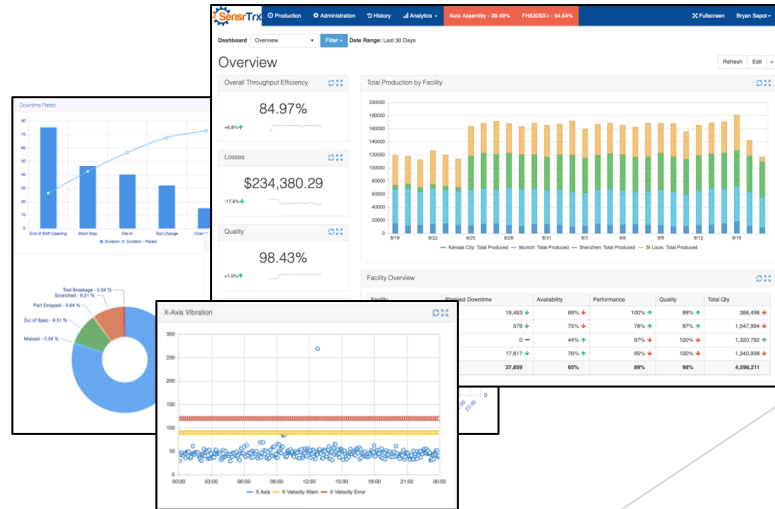
Equipment



People



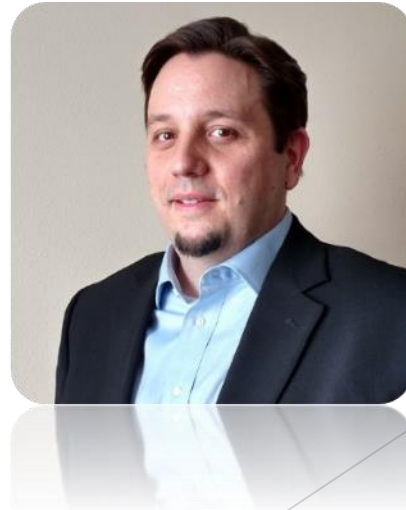
Systems



Cybersecurity in Manufacturing

Dan Banick, Chief Information Security Officer, Warwick, Inc.

- ▶ Experienced Information and Security and Risk Manager
- ▶ Accomplished leadership in the information technology and services industry.
- ▶ Skilled in Cyber Security Program and Policy Development, Enterprise Architecture and Transformation
- ▶ Diverse experience in tactical and strategic IT planning and execution from startups to global enterprises.



Cybersecurity in Manufacturing

Our Journey Today:

1. Global Threat Landscape – Is the world burning?
2. Industrial Hacks - The Greatest Hits List
3. Ohio Cyber 'Safe Harbor' – Take Shelter!
4. NIST Cybersecurity for Manufacturing



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Optimizing Technology, Managing Connections

Global Threat Landscape

What does it say about our future?

(FUD)

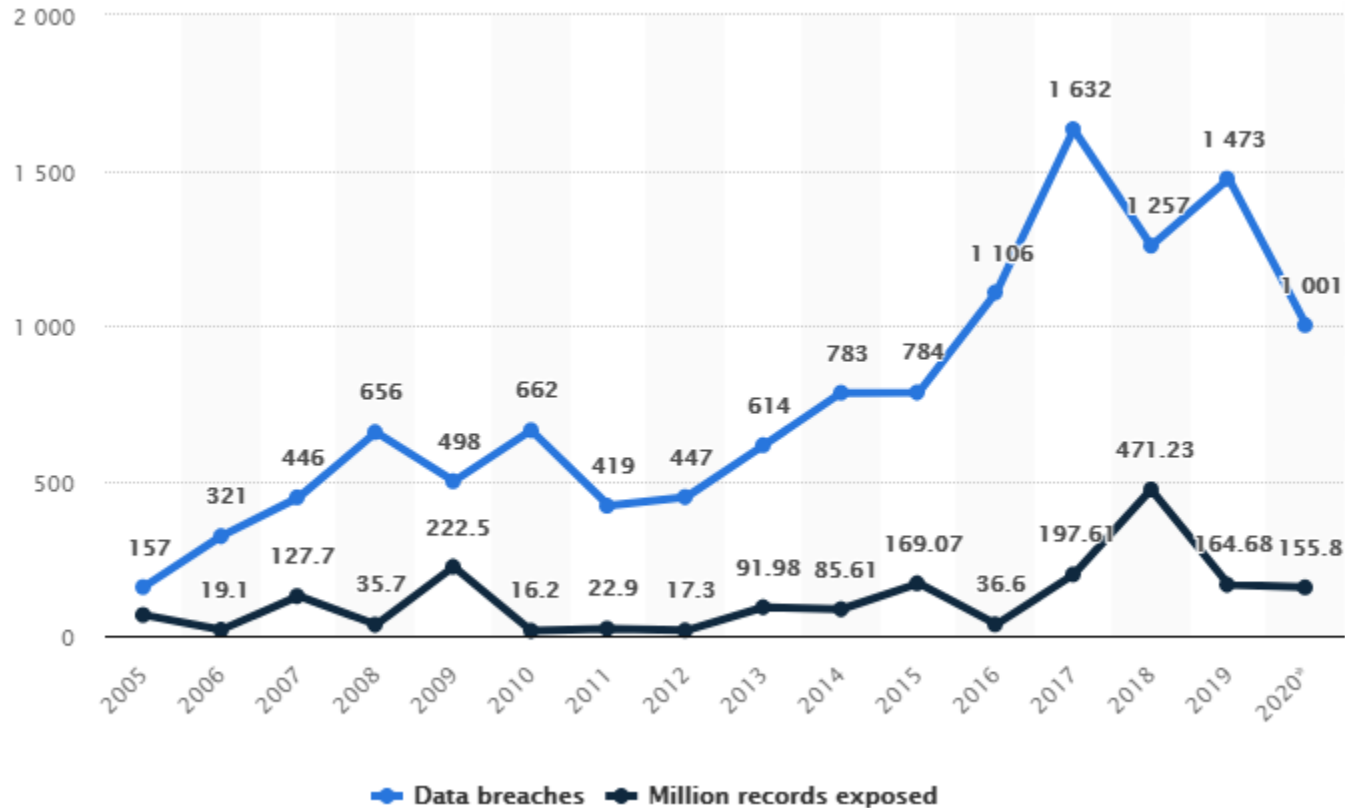
Global Threat Landscape

What does it say about our future?

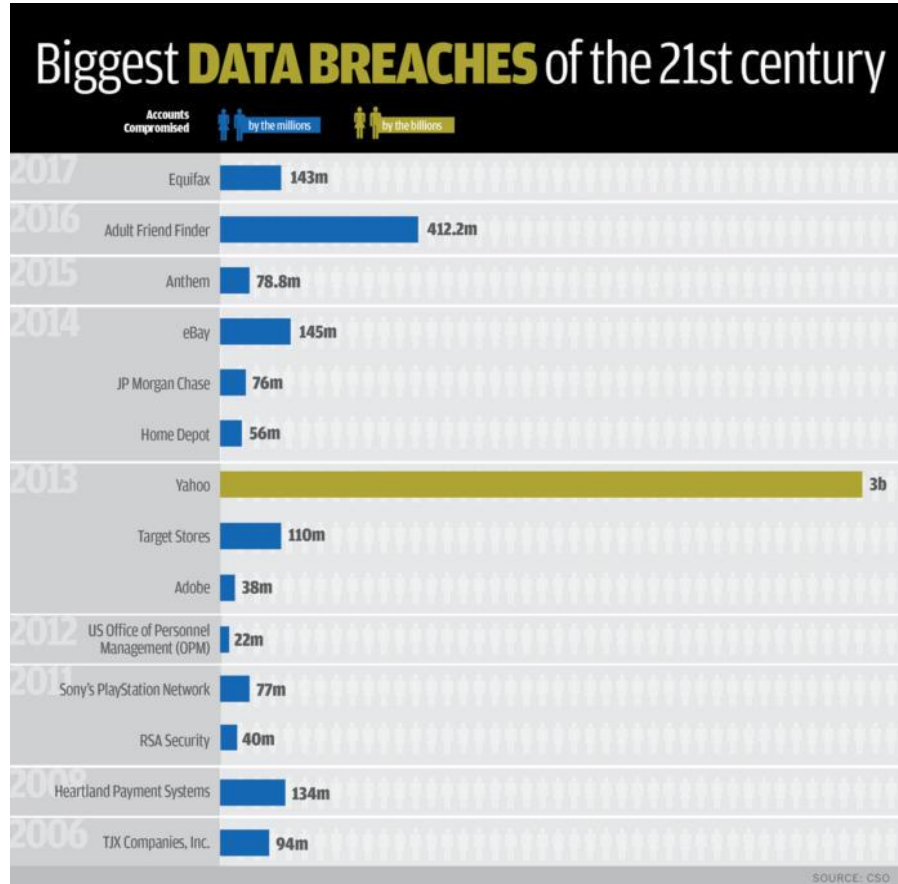
(FUD)

Fear, uncertainty, and doubt (often shortened to **FUD**) is a disinformation strategy used in sales, marketing, public relations, politics, cults, and propaganda.

Global Threats: Data Breach History

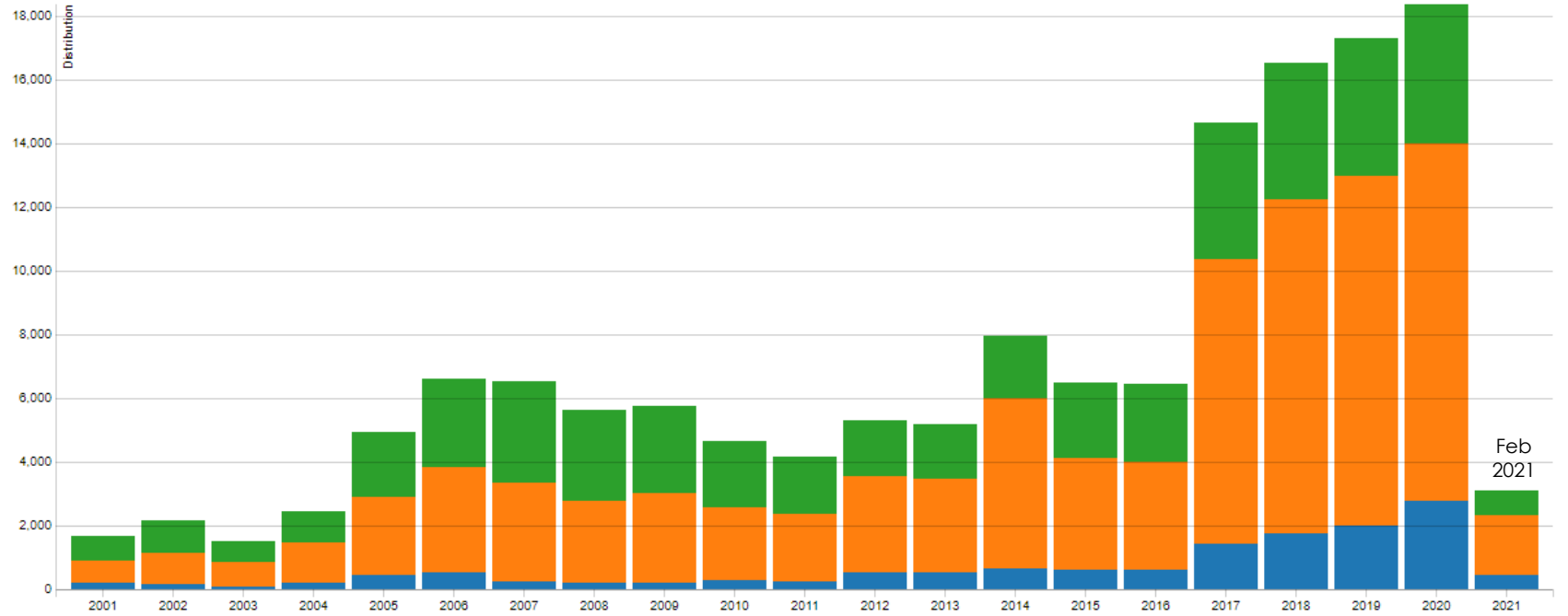


Global Threats: Data Breach History



- CSO Online

Global Threats: National Vulnerability Database



Global Threats Landscape

Cyber crime is a growing global industry.

No industry or sector is safe.

Everyone gets compromised.

Everyone.

(FUD)

Global Threats: The 2001 Security Stack

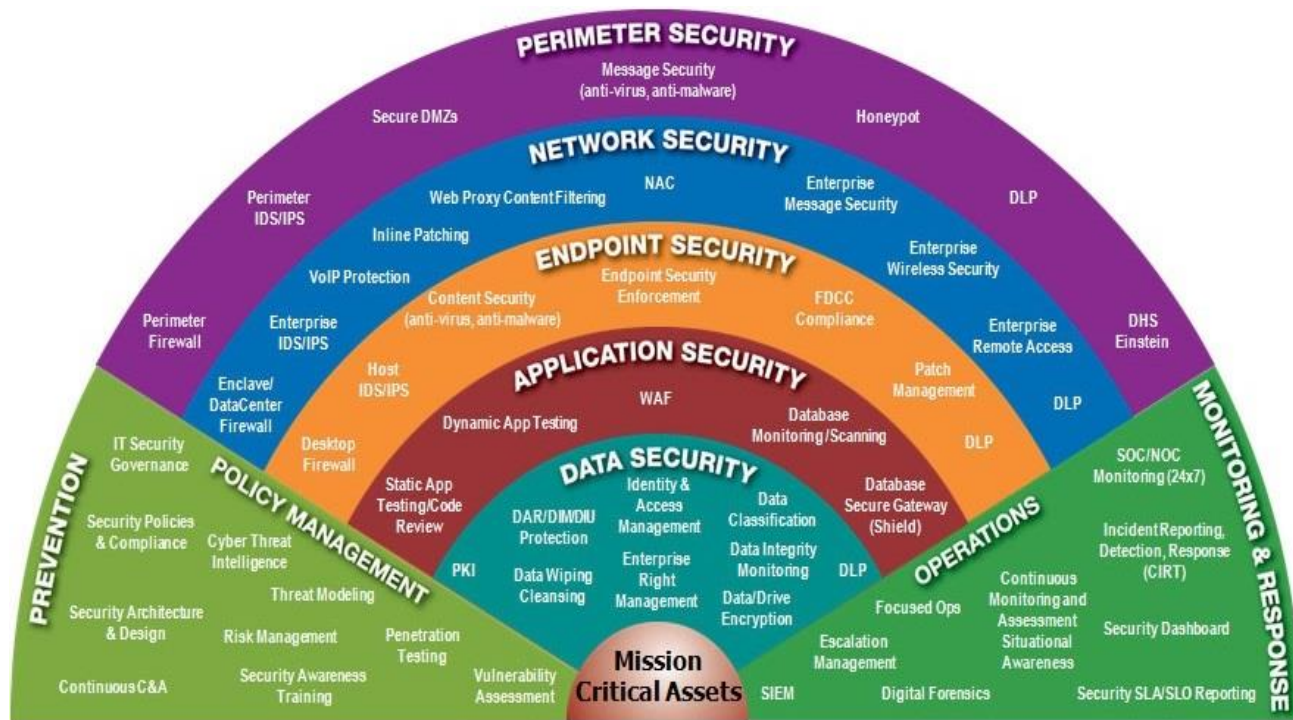
Firewall

Patching

Anti-Virus

Password

Global Threats: The 2021 Security Stack



Industrial Hacks

What's unique about industrial and manufacturing cyber security?

IoT | OT | CAM

IoT – Internet of Things

OT – Operational Technology

CAM – Computer Aided Manufacturing

Industrial Hacks: STUXNET

Discovered in 2010, the Stuxnet virus remains one of the largest and most "successful" industrial attack in cyber history.

An allegedly state-sponsored weapon, the Stuxnet worm targeted the PLC systems in Iran's nuclear program, causing centrifuges to spin out of control without triggering alarms.

Before it was caught, the attack was able to destroy up to 1/5 of the country's nuclear centrifuges and set its nuclear program back a decade.



PRO TIP



**If you are manufacturing enriched uranium,
its worthwhile to secure your centrifuges.**

Industrial Hacks: Florida Water Supply



The only federal law that applies to the cybersecurity of water treatment facilities in the United States is [America's Water Infrastructure Act of 2018](#), which requires water systems serving more than 3,300 people “to develop or update risk assessments and emergency response plans.”

There is nothing in the law that requires such facilities to report cybersecurity incidents, such as the one that happened in Oldsmar...

- KrebsOnSecurity.com

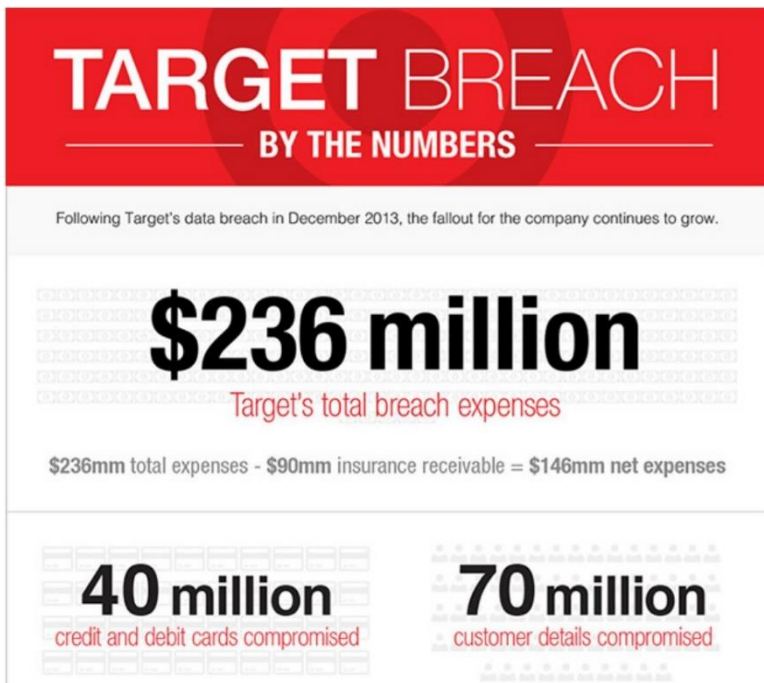


PRO TIP



The attacker compromised a remote computer and tried to poison the water while a supervisor was watching.
ie... Dumb luck caught this hack.

Industrial Hacks: The Target Breach



PRO TIP #1

An HVAC vendor's systems were the original source of the Target breach.



PRO TIP #2

Hacked deli-meat slicers inside stores were used to attack credit card processing devices.

Ohio Cybersecurity “Safe Harbor”

- **The Situation:** On August 3, 2018, Ohio Governor John Kasich signed Senate Bill 220, the Ohio Data Protection Act ("Ohio DPA"), which provides a safe harbor against data breach lawsuits for businesses that implement and maintain cybersecurity programs that meet certain industry-recognized standards.
- **The Result:** The Ohio DPA provides businesses with an incentive to implement and maintain an effective cybersecurity program, in contrast to other states that have taken a more punitive approach to cybersecurity, such as California's recently passed Consumer Privacy Act that imposes new obligations and potential liabilities on California businesses.

- Jones Day

<https://www.jonesday.com/en/insights/2018/10/ohio-adopts-safe-harbor-for-businesses-involved-in>

NIST Cybersecurity for Manufacturing

5 RECOVER

Make full backups of important business data and information

Continue to schedule incremental backups

Consider cyber insurance

Make improvements to processes/ procedures/ technologies

4 RESPOND

Develop a plan for disasters and information security incidents

1 IDENTIFY

Identify and control who has access to your business information

Conduct background checks

Require individual user accounts for each employee

Create policies and procedures for cybersecurity

2 PROTECT

Limit employee access to data and information

Install Surge Protectors and Uninterruptible Power Supplies (UPS)

Patch your operating systems and applications routinely

Install and activate software and hardware firewalls on all your business networks

Secure your wireless access point and networks

Set up web and email filters

Use encryption for sensitive business information

Dispose of old computers and media safely

Train your employees

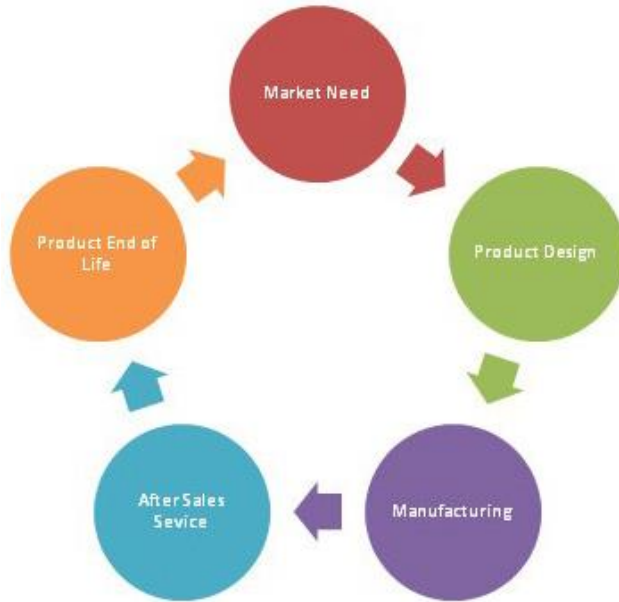
3 DETECT

Install and update anti-virus, anti-spyware, and other anti-malware programs

Maintain and monitor logs



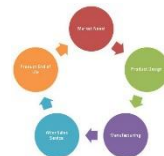
Parallel Cycles: Manufacturing & Security



Parallel Cycles: Manufacturing & Security

The Parallels:

- Cybersecurity operates in continuous repeating cycles
- Manufacturing operates in continuous repeating cycles
- The strongest programs and products have developed over time and incrementally improved
- Cybersecurity and Manufacturing industries are constantly evolving – leverage your partners, vendors, customers, and even competitors contributions through professional organizations to stay ahead of the curve.





Question and Answer

Thank You for Attending!

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