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CRITICAL INFRASTRUCTURE and INDUSTRIAL AUTOMATION SECURITY

Preventing the Kill Chain in **Industrial Control Systems (ICS) / SCADA**

Mati Epstein
Global sales manager
Critical Infrastructure and ICS

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CYBER SECURITY
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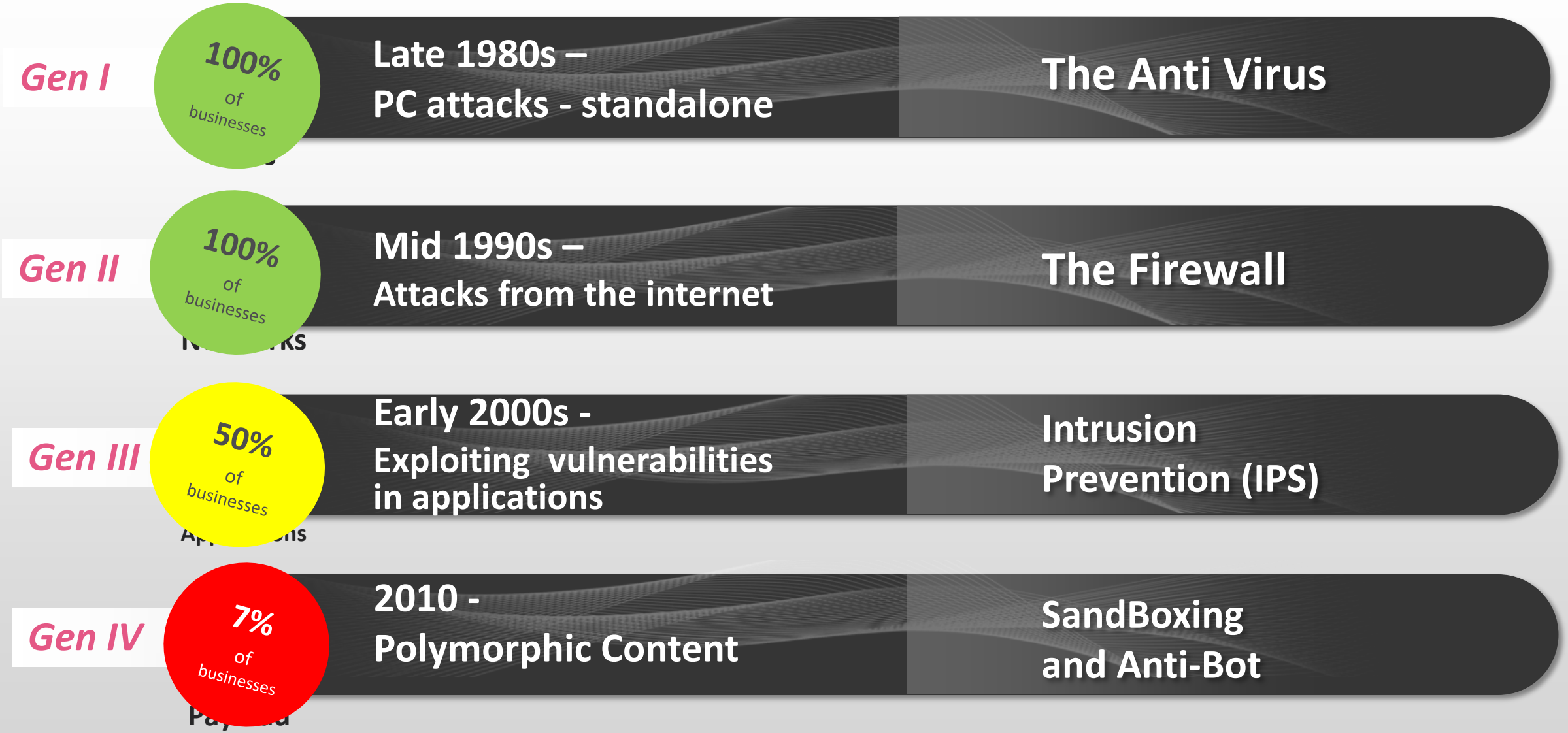
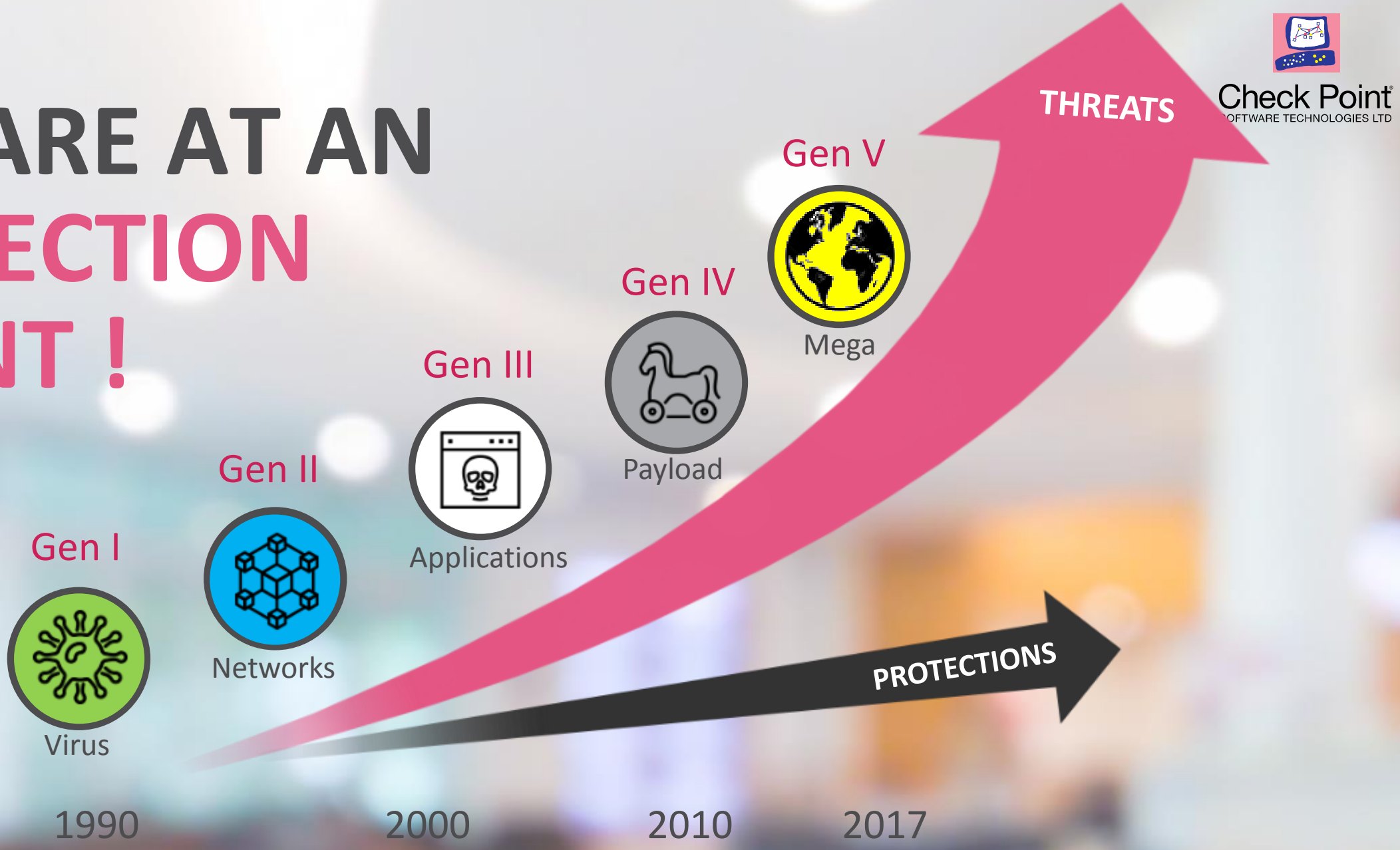
CLOUD • MOBILE • THREAT PREVENTION

Generations of Attacks and Protections



WE ARE AT AN INFLECTION POINT !



MAKING GEN V POSSIBLE

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GEN V

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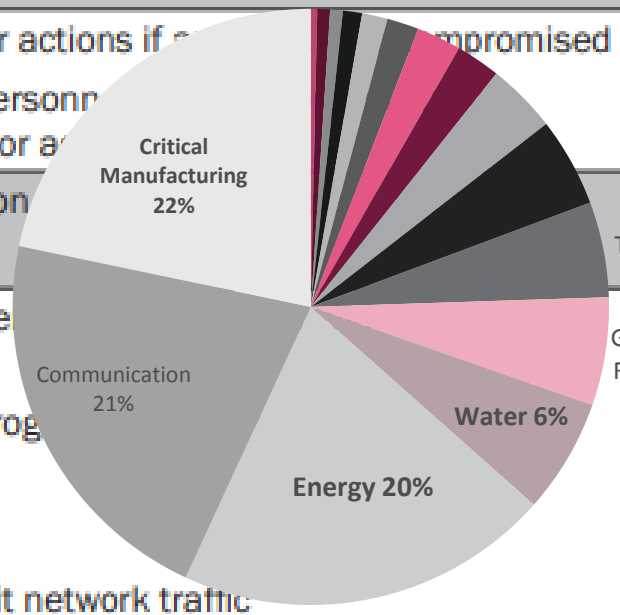
US ICS-CERT report: (Jan-18)

FY 2017 Most Prev… …ses

3rd year in a row

Area of Weakness	Rank	Risk
Boundary Protection	1	• Undetected unauthorized activity in critical systems • Weaker boundaries between ICS and enterprise networks
Identification and Authentication (Organizational Users)	2	• Lack of accountability and traceability for user actions if … …ompromised • Increased difficulty in securing accounts as personn… especially sensitive for users with administrator a…
Allocation of Resources	3	• No backup or alternate personnel to fill position • Loss of critical knowledge of control systems
Physical Access Control	4	• Unauthorized physical access to field equipme… opportunity to: ○ Maliciously modify, delete, or copy device prog… ○ Access the ICS network ○ Steal or vandalize cyber assets ○ Add rogue devices to capture and retransmit network traffic
Account Management	5	• Compromised unsecured password communications • Password compromise could allow trusted unauthorized access to systems
Least Functionality	6	• Increased vectors for malicious party access to critical systems • Rogue internal access established

Most Attacked Sectors 2016



Best Practices for Securing OT

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Secure **Both** OT and IT Environments

Protect IT with Advanced Threat Prevention Technologies

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Securing against Attack Vectors

Attack Vector	Check Point solution
Removable Media	Endpoint data protection
Spear Phishing	Sandblast Emulation and Extraction
Ransomware	SandBlast Anti-Ransomware
Remote Technicians	Secured VPN Connectivity and Two Factor Authentication
Software Vulnerabilities	IDS/IPS
Virus's and BOT's	Anti Virus and Anti-Bot
Missing Boundary	Firewall and segmentation

Best Practices for Securing OT

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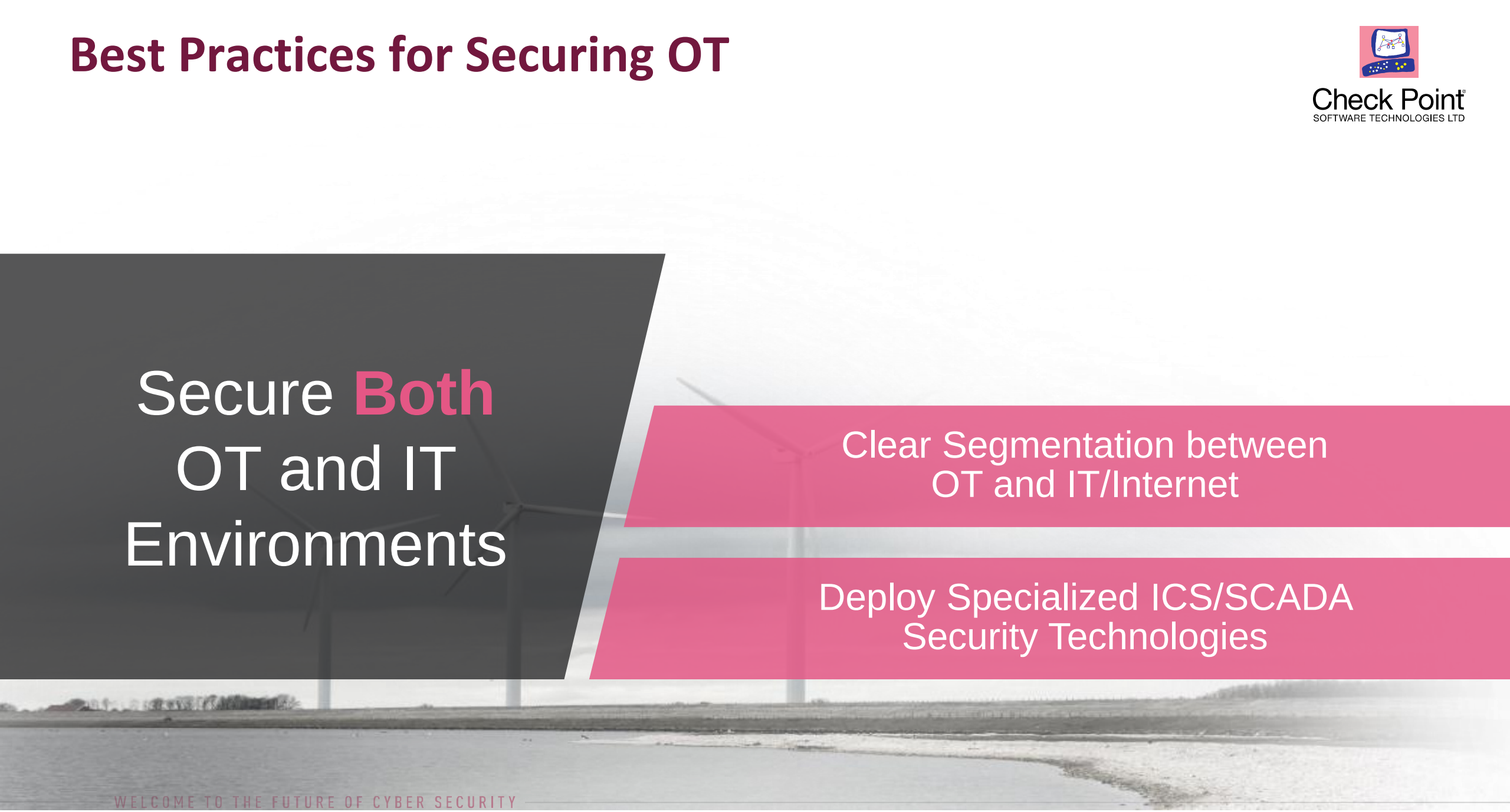
Secure **Both** OT and IT Environments

Clear Segmentation between OT and IT/Internet

Deploy Specialized ICS/SCADA Security Technologies



Enhanced OT Visibility

Communication Information

- >50 **Protocols**, >1100 **Commands**
- Asset connections within the ecosystem
- Open/proprietary protocols

Asset Information

- IP and MAC Address
- Equipment vendor
- Equipment type (PLC, HMI, Engineering Workstation, Switch, etc.)
- Asset model name and Serial #
- Firmware version
- Physical data (rack slots)

Network Mapping

- How assets are communicating and who is accessing them?
- Uncover configuration issues and vulnerable assets

Enforcement

Pre-defined Policies

- **Learning phase** - network traffic and logging
- Manual setting of SCADA commands baseline
- Specific Command policies
- Specific Values policies
- Time of Day and traffic patterns policies

Anomaly Detection

- **Learning phase** - Automatically Discover Assets and communication
- Anomaly-Based Behavior Analysis
- Generate High-Fidelity Baseline Model
- Generate security and process threats

Combined Enforcement of
Pre-Defined + Anomaly-Based analysis

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THANK YOU

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