

# ISOLATING

## IT AND OT NETWORKS

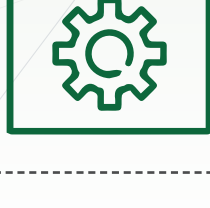
### Outcomes of Digital Transformation [1]

- Increase in Industrial IoT
- Flow of information across business networks
- Use of Information Technology (IT) and Operational Technology (OT) networks

As businesses strive to improve their cybersecurity posture, it is important to isolate their IT and OT networks to protect external attacks and intrusions.

### Understanding IT and OT Networks

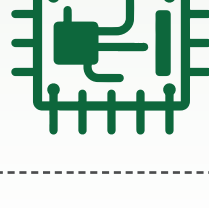
#### IT Networks



Corporate networks and business apps including network devices, ERP systems, security controls, computer assets, and email services are hosted across IT networks.

[2]

#### OT Networks



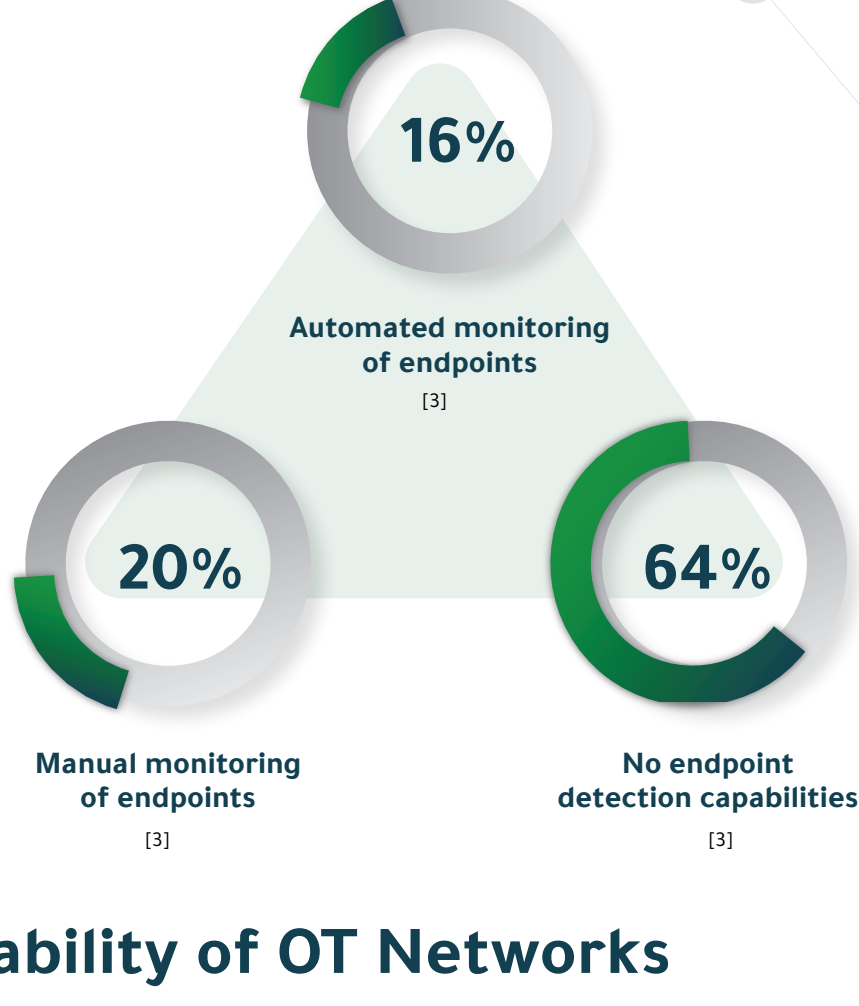
Operational technology includes hardware and software systems that control physical processes and equipment within an organization- Workstations, PLCs, SCADA, WiFi gateways, and smart devices/IIoT.

[2]

### Monitoring Endpoints of OT Networks

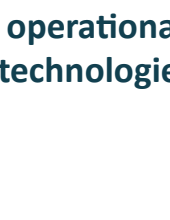
Inability of businesses to monitor OT endpoints can result in severe breaches and operational failures.

#### PERCENTAGE OF ORGANIZATIONS WITH

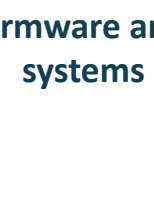


### Vulnerability of OT Networks

Businesses have made palpable efforts to protect their IT assets, but the security of production OT systems remains a matter of concern due to the following:



Obsolete operational technologies



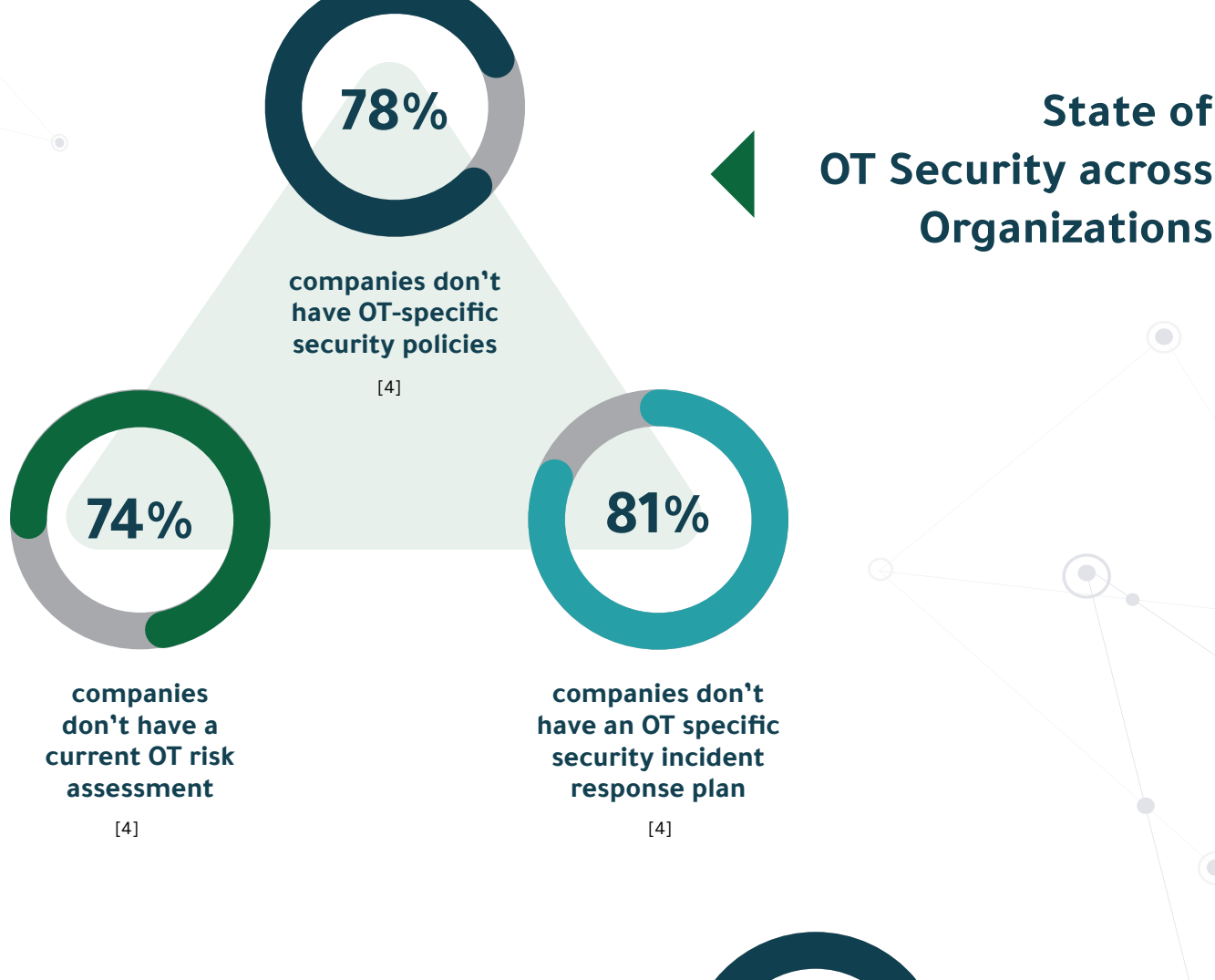
Outdated firmware and systems



Communication of OT devices with IT systems over unencrypted Wi-Fi connections



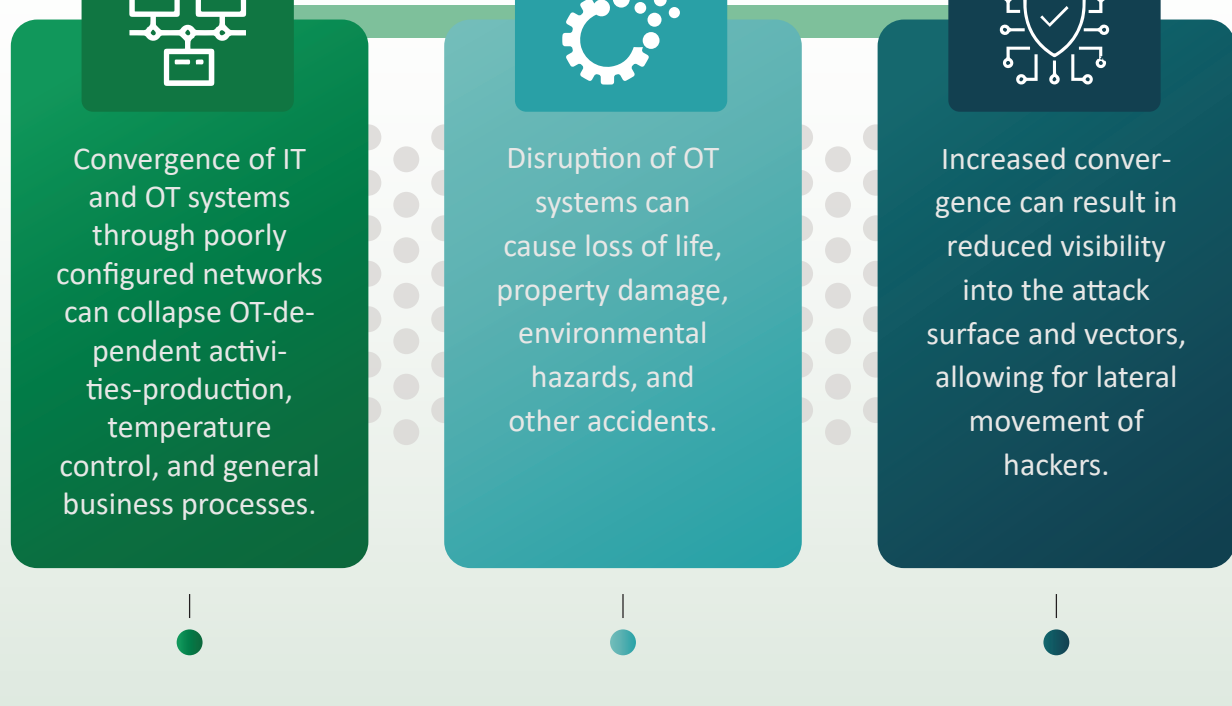
Unsupported software technology



### Problems with IT-OT Convergence

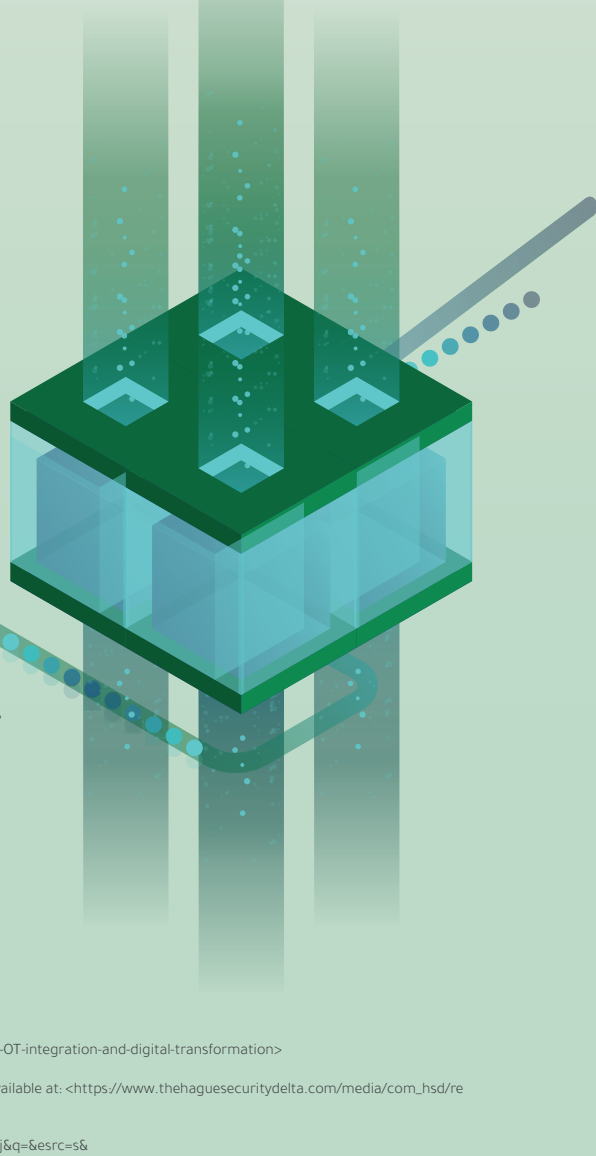


### Need for Isolating IT and OT Networks



### Effective Isolation of IT and OT Networks using Data Diodes

It is important to protect OT networks from attack vectors as major production systems depend on the former. A data diode helps in transferring data to the external operational/business networks without exposing the internal OT networks to risks of intrusion. This ensures that critical infrastructure across key industries remains up and running at all times.



[1] Invma.co.uk, n.d. IT/OT Integration And Digital Transformation. [online] Available at: <<https://invma.co.uk/knowledge-hub/blog/IT-OT-integration-and-digital-transformation>>

[2] Thehaguesecuritydelta.com. 2019. Understanding The Strategic and Technical Significance Of Technologyfor Security. [online] Available at: <[https://www.thehaguesecuritydelta.com/media/com\\_hsd/report/246/document/HSD-Report-Data-Diodes.pdf](https://www.thehaguesecuritydelta.com/media/com_hsd/report/246/document/HSD-Report-Data-Diodes.pdf)>

[3] Google.com. 2018. State Of Industrial And OT Security Report 2018. [online] Available at: <<https://www.google.com/url?sa=t&ct=1&q=&esc=s&source=web&cd=1&ved=2ahUEw9X0TQY7P4hU1B0tcH4cC4C0Fj&pg=0ARAC&url=https%3A%2F%2Fwww.blooresearch.com%2Festap%2Fdownload%2FX9B0LKPnDcHhABW145QUyMQnH9V5XW0TSVhH16L4GtHh0&usq=A0Vw3i3TozMvWWHMO99C4ALh3>>

[4] IBM.com. 2019. The OT Security Imperative – What Is Your Strategy?. [online] Available at: <<https://www.ibm.com/downloads/cas/Q6GE39Q>>

[5] www.cioandleader.com. 2020. OT Security Breaches Are Anything But Rare. [online] Available at: <<https://www.cioandleader.com/article/2020/05/26/ot-security-breaches-are-anything-rare>>

[6] Fortinet.com. 2020. 2020 State Of Operational Technology And Cybersecurity Report. [online] Available at: <<https://www.fortinet.com/content/dam/fortinet/assets/analyst-reports/report-state-of-operational-technology.pdf>>