ARTIFICIAL INTELLIGENCE

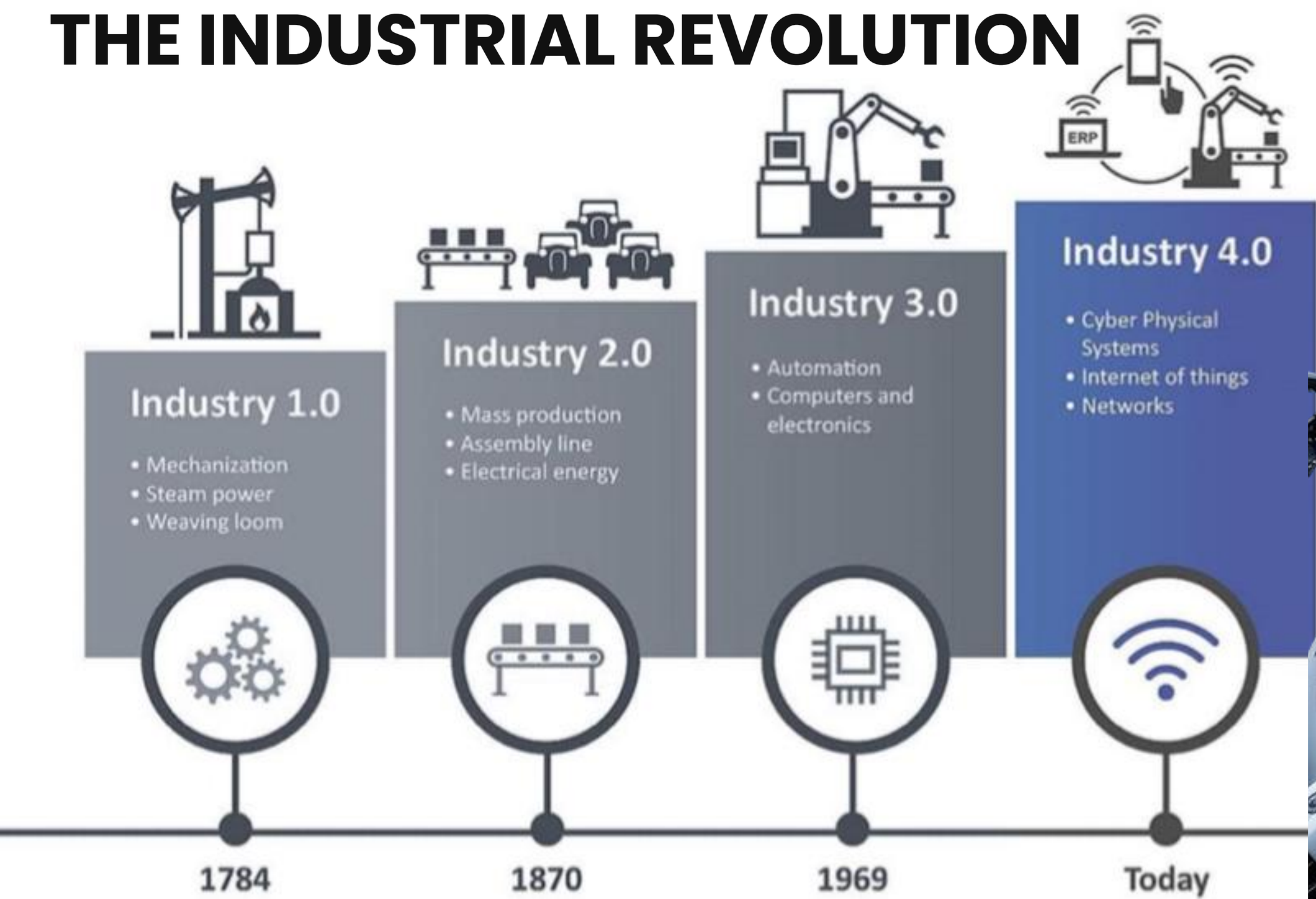
4.0 INDUSTRIAL REVOLUTION

MUT
MANGOSUTHU UNIVERSITY OF TECHNOLOGY

ASKARIS CYBER SECURITY
THE POWER TO PROTECT

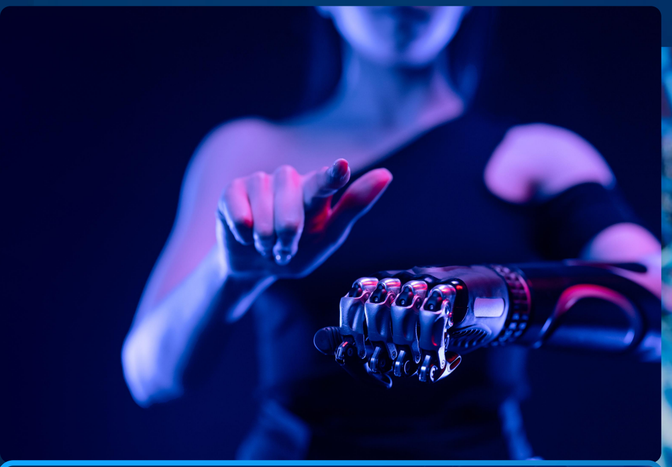
Securing the AI-Powered Office
Cybersecurity Best Practices for Administrative Professionals
Mr Bjorn Ekblad – Askaris Cyber Security MUT Collaboration

THE INDUSTRIAL REVOLUTION



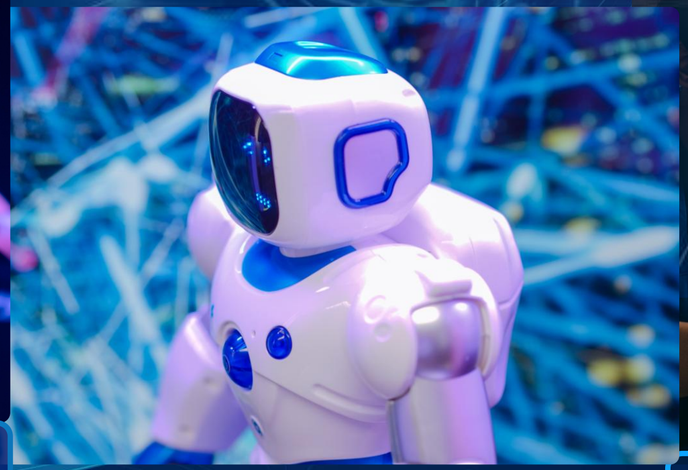

INDUSTRY 5.0 :
THE FUTURE OF MANUFACTURING
The 4th Industrial Revolution is driving Digital Transformation and advanced technologies.
The 5th Industrial Revolution will focus on human + machine collaboration.

THE FUTURE OF EDUCATION



Change of Organizational Structures

- Change of business model
- Cooperative structures enhancing interdisciplinary collaboration
- New concepts for facultie or departments



Change of Accreditation Procedures

- New role of examination offices
- No fixed degree programs
- Acceleration in education in line with fast innovation cycles

New Teaching Methods

- New teaching concepts (e.g., flipped classroom)
- New methods of teaching and supporting infrastructures (e.g., equipment for virtual worlds)
- Digital rights management

Change of Learning

- Massive and personalized learning
- New learning infrastructure (e.g., increased computing capacity)
- Shift from in-person learning to distance learning

VALUE CREATON FOR MUT

Operational efficiency and effectiveness.
Cost savings.
Improved campus experiences.
Expanding digital and online learning platforms.

Digital Transformation Stack

- Digitization
- Analogue to digital
- Organize information

Digitalization

- Automated processes
- Streamline processes

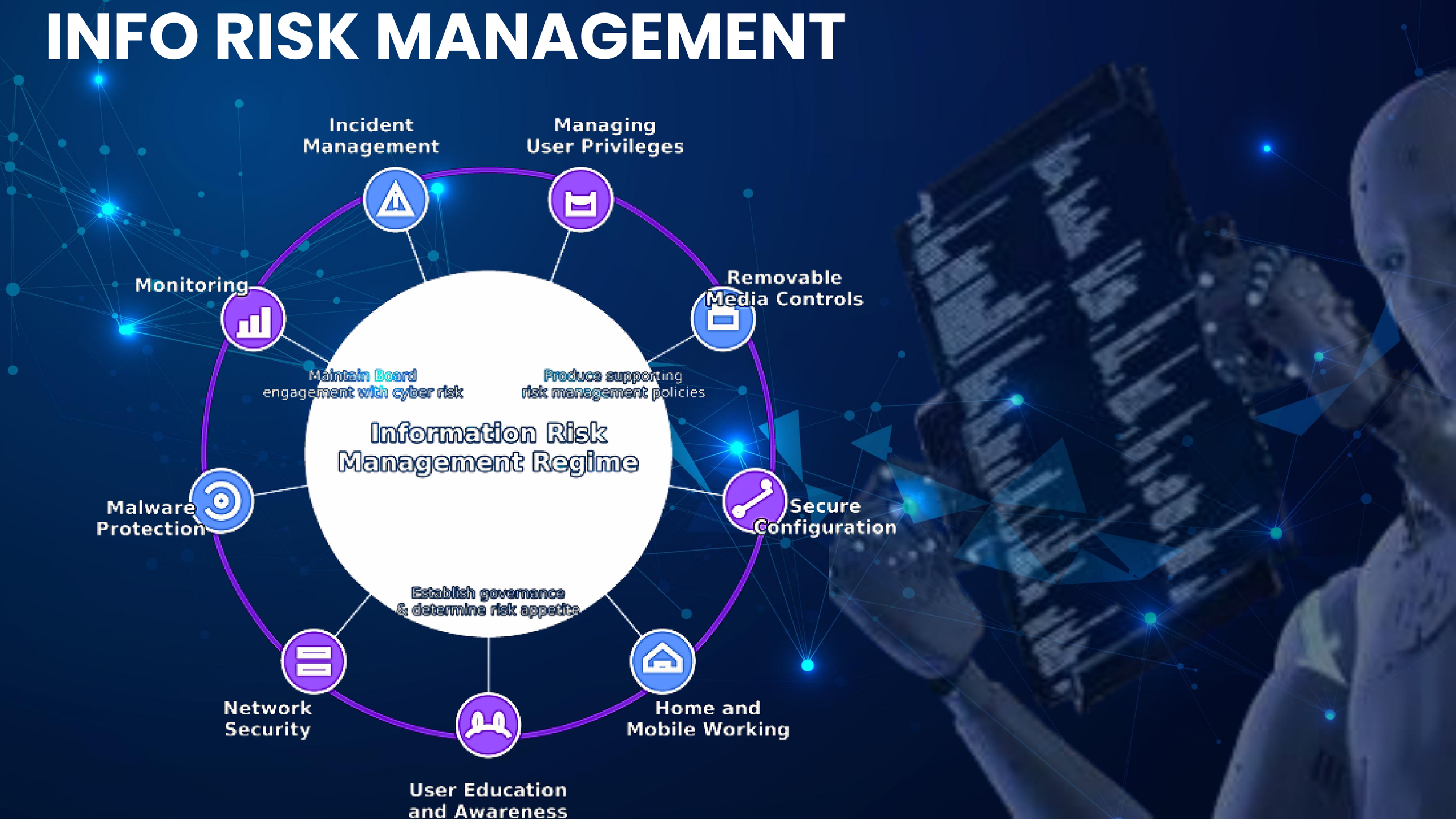
Digital Transformation

- Strategy
- Culture change

Digital Journey (Roadmap)

1. Define “AS-IS”
2. Define “TO-BE”
3. Road Map for Digital Journey

INFO RISK MANAGEMENT



CONCLUSION

AI/ML are the engine of the Fourth Industrial Revolution.
Education must shift from content delivery to capability building—embed AI across curricula, upskill staff, and give learners real-world projects.
Used well, AI personalizes learning, flags risk, automates admin, and expands access—anchored by ethics and privacy.
AI won’t replace educators; it amplifies them, preparing our future stars to thrive and lead.

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AI

IN CYBERSECURITY

CYBER ATTACKS MOVE AT MACHINE SPEED—OUR DEFENSE MUST TOO.

THE EVOLVING THREAT LANDSCAPE

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Pair Zero Trust with AI-driven detection, strong MFA/least privilege, and tested recovery.

INDUSTRIALIZED CRIME:

Ransomware-as-a-Service and affiliate gangs launch attacks in minutes, at scale.

AI-POWERED DECEPTION:

Deepfakes, voice clones, and hyper-personalized phishing bypass human intuition.

EXPANDING ATTACK SURFACE:

OT/IoT, mobiles, and home networks widen entry points.

HOW UNIVERSITIES CAN USE AI/ML FOR CYBER DEFENSE

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- **Prevent: AI email + DMARC; risk-based MFA; ML data classification for student/research data.**
- **Detect: UEBA; EDR/NDR behavior analytics; SIEM + ML correlation to surface real incidents.**
- **Respond & Recover: SOAR auto-containment; AI triage; backup anomaly detection for clean restores.**
- **Govern & Educate: Adaptive phishing training; privacy & POPIA by design; continuous model tuning.**

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AI-POWERED VULNERABILITY ANALYSIS

- Finds weak spots automatically: AI scans our systems and flags “easy entry points” before criminals do.
- Picks what to fix first: Ranks issues by real-world risk so limited time/budget hits the biggest problems.
- Stays up to date: Checks daily as new threats emerge—no more once-a-year audits.
- Outcome: Fewer breaches, less downtime, clearer action lists for teams and leaders.

VULNERABILITY DISCOVERY

RISK PRIORITIZATION

AUTOMATED PATCHING

AUTOMATED INCIDENT RESPONSE WITH AI

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- **Faster detection: Correlates noisy alerts to spot real attacks sooner.**
- **Automated response: Runs pre-approved playbooks—isolates devices, blocks bad domains, resets risky accounts—in seconds.**
- **Human-in-the-loop: Analysts approve high-impact steps; unusual cases are escalated.**
- **Audit & compliance: Every action is logged for reporting and reviews.**
- **Outcome: Shorter outages (MTTD/MTTR ↓), smaller blast radius.**

THREAT DETECTION

INCIDENT CONTAINMENT

RECOVERY AND REMEDIATION

AI-POWERED THREAT INTELLIGENCE

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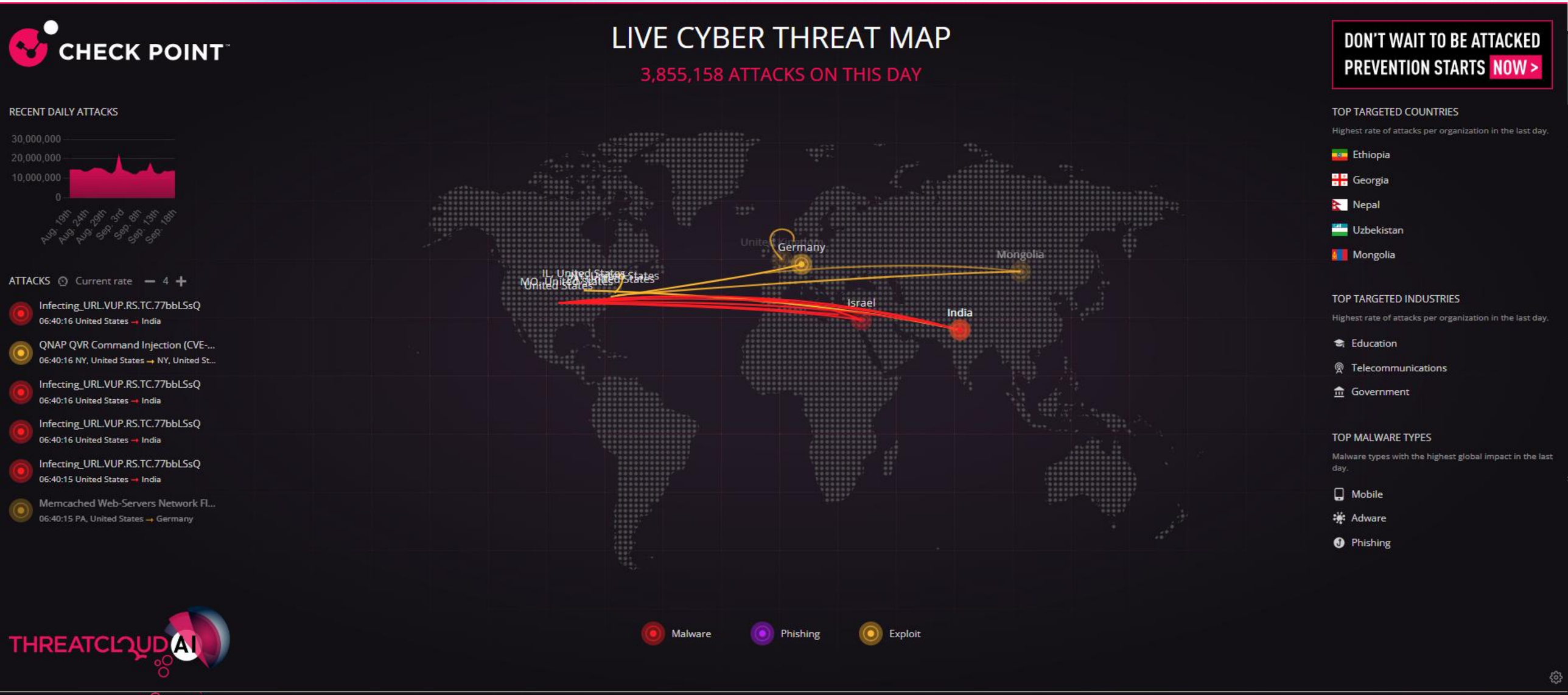

ENHANCING MUT CYBERSECURITY WITH MACHINE LEARNING

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- **Stop it before inbox: AI/ML blocks phishing, BEC, and zero-day malware pre-delivery.**
- **Smarter phishing defense: Language + behavior models catch spear-phish and imposters.**
- **Safe files & links: CDR cleans attachments; link protection checks destinations in real time.**
- **Always up to date: Protections auto-learn from global threat intel—no manual tuning.**
- **Less noise for IT: High accuracy, fewer false positives, quicker quarantine/response.**

Outcome: Safer staff email with fewer incidents and less operational drag.

THREATCLOUD AI

The Brain Behind Check Point's Best Security

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INTEGRATING AI INTO EXISTING SECURITY FRAMEWORKS

SECURITY INFORMATION AND EVENT MANAGEMENT (SIEM)

- Smart Triage: AI/ML reduces false positives, prioritizing real threats.
- Automated Response: ML-driven SOAR playbooks speed up incident handling.
- Adaptive Detection: Learns from data to spot anomalies and new attack patterns.

ENDPOINT SECURITY

- 24×7 monitoring of servers/endpoints
- Behavioral AI detects ransomware, fileless, and unknown threats.
- Zero-Trust Application Service blocks untrusted apps.
- Rapid response: auto-isolate hosts, kill processes, quarantine files.
- Telemetry to SIEM.
- Playbooks + human review for high-impact actions.

NETWORK SECURITY

Network Service Provider - integrates and enriches our SIEM alerts

IDENTITY AND ACCESS MANAGEMENT (IAM)

MUT has acquired Delinea for this

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CONCLUSION AND QUESTIONS

- Block more threats before they land (email, endpoints, accounts).
- Spot risks early from patterns and anomalies.
- Automate routine fixes and containment in seconds.
- Free staff time for teaching and research.
- POPIA + human oversight → faster services, safer systems, more resilient campus.

Thank You for Your Attention

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Agenda

1. The Advent of the 4th Industrial Revolution
2. The Future of Education
3. Value Creation
4. Cyber Security