NEXT GEN RESILIENCE

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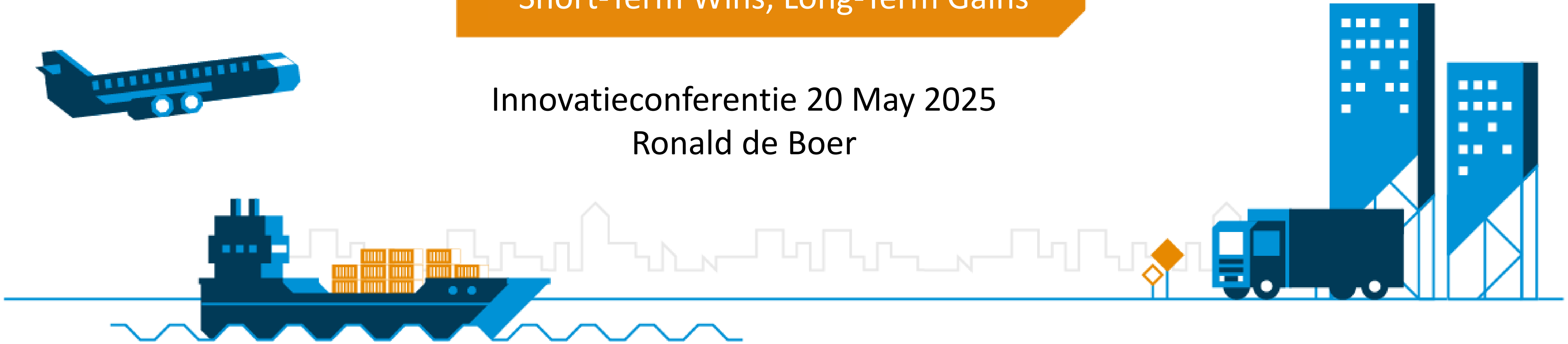
Dutch Institute for Advanced Logistics

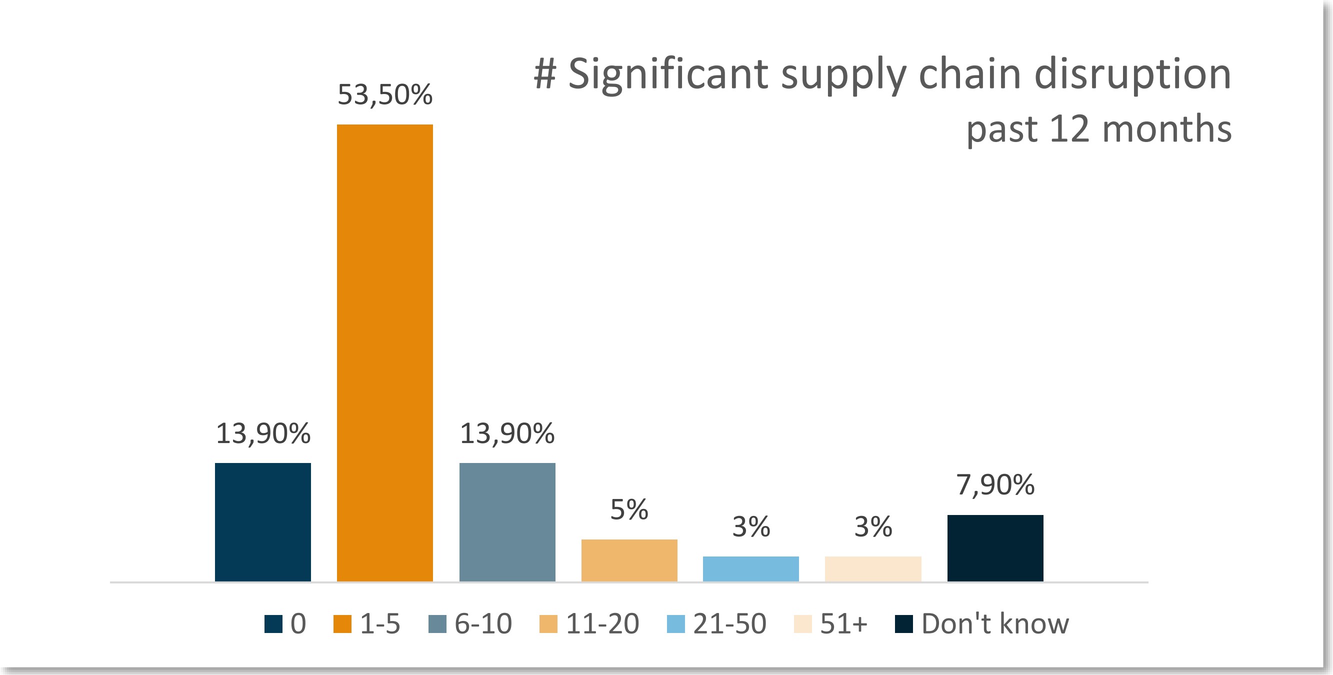
Next Gen Resilience

Short-Term Wins, Long-Term Gains

Innovatieconferentie 20 May 2025
Ronald de Boer



Why?



- 78% organizations experienced **significant supply chain disruptions** over past year (1-10 incidents)
- 34% of organizations had to halt production for at least **20 days** due to disruption in supply chain
- 65% managers: **losses** due to disruptions **higher than expected**

Sources: Reichelt Elektronik (Nov 2024). *Forgotten supply chain challenge?* Reichelt Magazine. https://www.reichelt.com/magazin/en/researches/forgotten-supply-chain-challenge ; BCI. (2024). *BCI Supply Chain Resilience Report 2024*. The Business Continuity Institute. https://www.thebci.org/resource/bci-supply-chain-resilience-report-2024.html

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How?

INVOLVATION

University of Applied Sciences Windesheim

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university of groningen

Abbott

abbvie

Avebe

BOSCH

DSV

Corbion

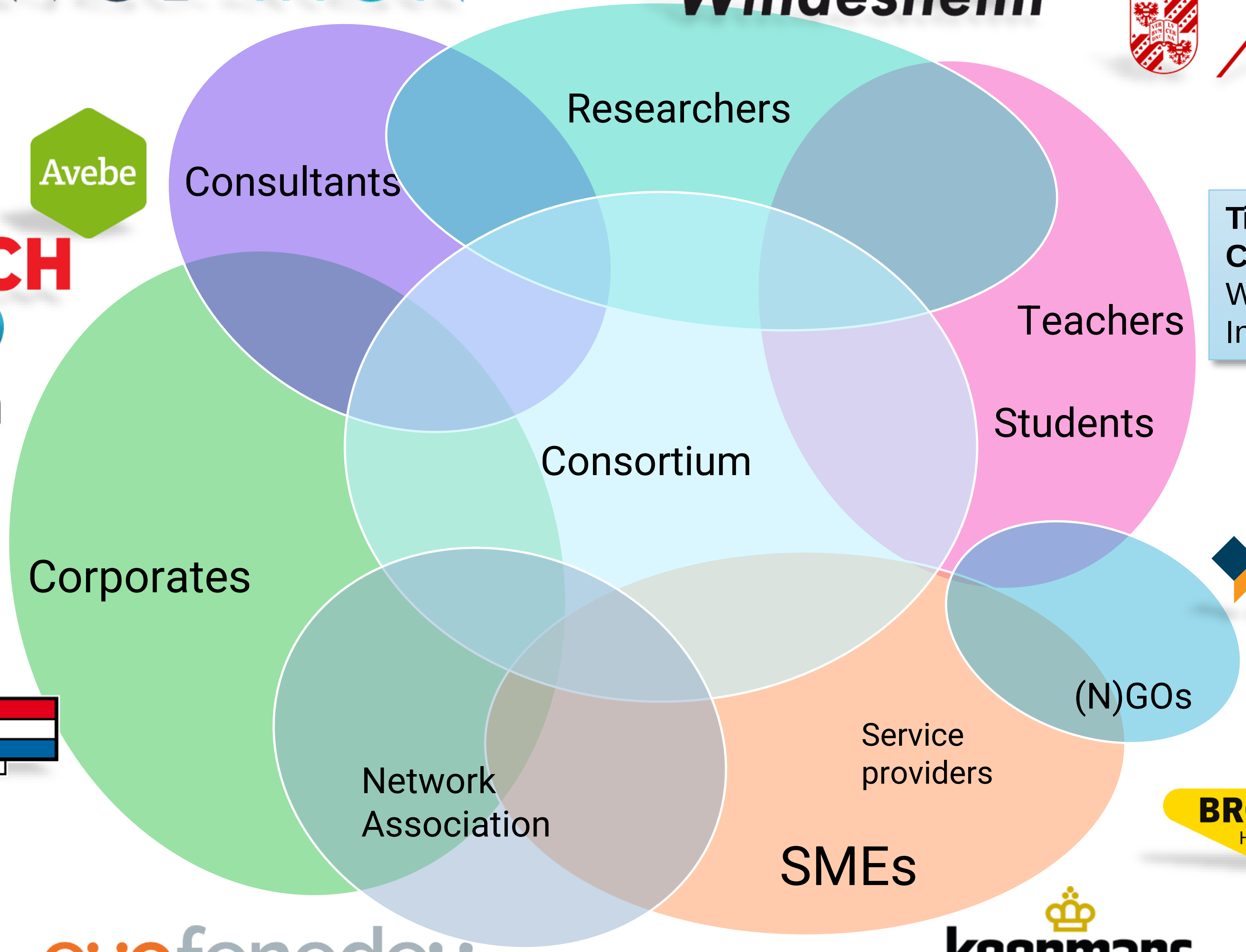
FUJIFILM
Value from Innovation

SCANIA

TEIJIN ARAMID

VDL

Vreugdenhil
Dairy Foods



Timing: Sep 2023 - Sept 2026
Core Consortium:
Windesheim + RUG + Involvation

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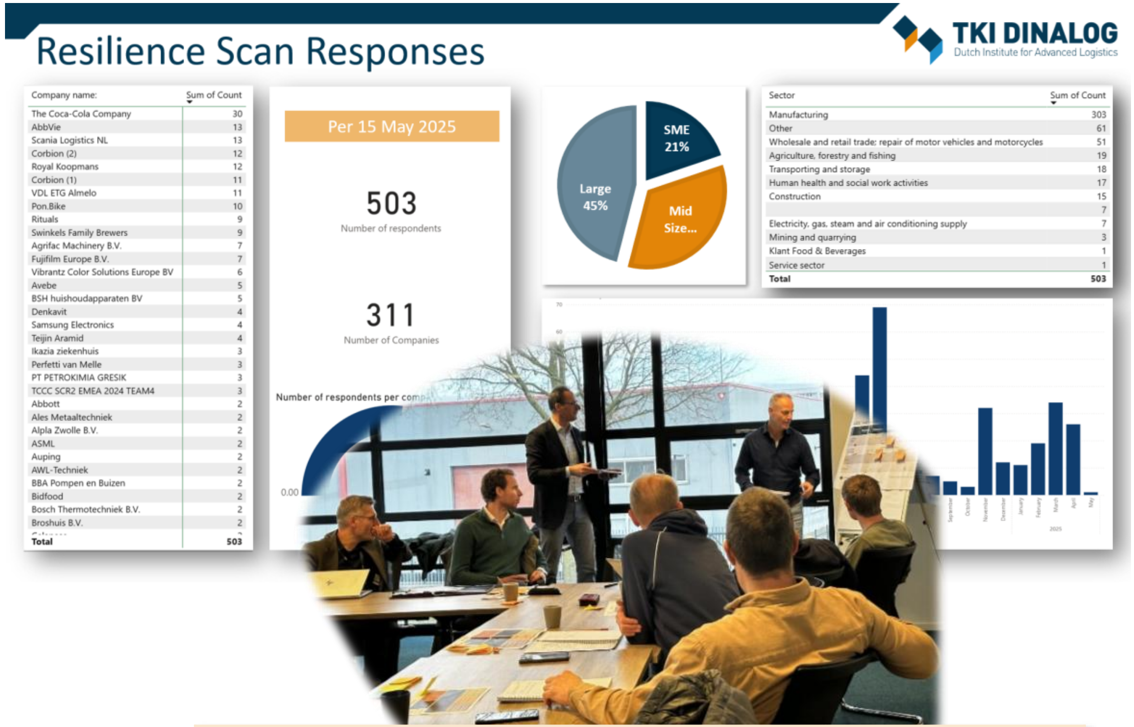
BROSHUIS
HOLLAND

koopmans

evofenedex

What?

1. **Instrumenten - Praktische tools:**
   - Resilience Scan (www.resiliencescan.org)
   - Benchmarking Dashboard
   - SCROL Matrix
2. **Informatie - Bewustwording & bruikbare kennis**
   - Artikelen, workshops, lezingen en seminars
   - Bedrijfstrainingen (Coca-Cola, Scania, Rituals, Evofenedex)
3. **Inzichten - Onderzoek**
   - Wetenschappelijke publicaties & conferenties
   - Bijv.: *'The supply chain resilience funnel'**
4. **Implementatie bij bedrijven**
   - Deepdive workshops met Management Teams
   - Case studies en verbeterprojecten (40 studenten, 26 projecten)
5. **Integratie in opleidingen**
   - RUG , Windesheim , Others: Maastricht University, La Salle University



Resilience Scan Responses

Company name:	Sum of Count
The Coca-Cola Company	30
AbbVie	13
Scania Logistics NL	13
Corbion (2)	12
Royal Koopmans	12
Corbion (1)	11
VDL ETG Almelo	11
Pon.Bike	10
Rituals	9
Swinkels Family Brewers	9
Agrifac Machinery B.V.	7
Fujifilm Europe B.V.	7
Vibrantz Color Solutions Europe BV	6
Avebe	5
BSH huishoudapparaten BV	5
Denkavit	4
Samsung Electronics	4
Teijin Aramid	4
Ikazia ziekenhuis	3
Perfetti van Melle	3
PT PETROKIMIA GRESIK	3
TCCC SCR2 EMEA 2024 TEAM4	3
Abbott	2
Ales Metaaltechniek	2
Alpla Zwolle B.V.	2
ASML	2
Auping	2
AWL-Techniek	2
BBA Pompen en Buizen	2
Bidfood	2
Bosch Thermotechniek B.V.	2
Broshuis B.V.	2
Total	**503**

Per 15 May 2025

503
Number of respondents

311
Number of Companies

Sector	Sum of Count
Manufacturing	303
Other	61
Wholesale and retail trade; repair of motor vehicles and motorcycles	51
Agriculture, forestry and fishing	19
Transporting and storage	18
Human health and social work activities	17
Construction	15
	7
Electricity, gas, steam and air conditioning supply	7
Mining and quarrying	3
Klant Food & Beverages	1
Service sector	1
Total	**503**

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SME 21%
Large 45%
Mid Size...
Number of respondents per comp
0.00

University	Place	Courses
RUG	Groningen	Supply chain coordination + resilience in SCM fundamentals - Master SCM
Windesheim	Zwolle	Supply chain design – Logistical engineering + minor supply chain engineering
Maastricht University	Maastricht	Summer Program - Supply Chain Management (MSM)
La Salle Univeristy	Barcelona	Workshop Supply Chain Resilience at Scania

*: Scholten, K., Van Donk, D.P., Boscari, S. (2025). *What options do we have? The supply chain resilience funnel*. Journal of Supply Chain Management. https://doi.org/10.1111/jscm.12342

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Topsector
Logistiek

Reverse Stress Testing in Supply Chains (RESTRETCH)

Frans de Ruiter (Wageningen University & Research)

Collaboration between Wageningen University and Research, JADS den Bosch, Datacation, Nobian, Hoogwegt and Vos Logistics

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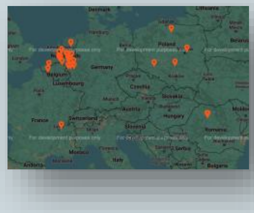
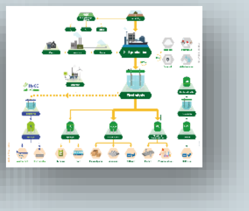
Topsector Logistiek

Need for new stress tests in industry





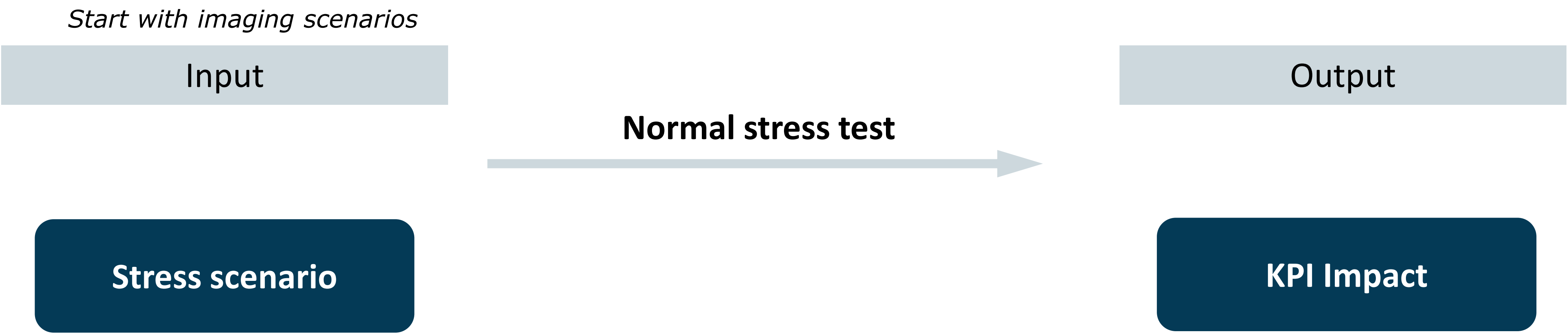
Vast, vital and complex supply chains & logistics

Increase in disruptions harder to predict

Need:

- **Business criteria** on viable supply chains
- **Stress scenarios identification**
- **Quantify resilience** of supply chain

Research required for today’s stress test



Start with imaging scenarios

Input

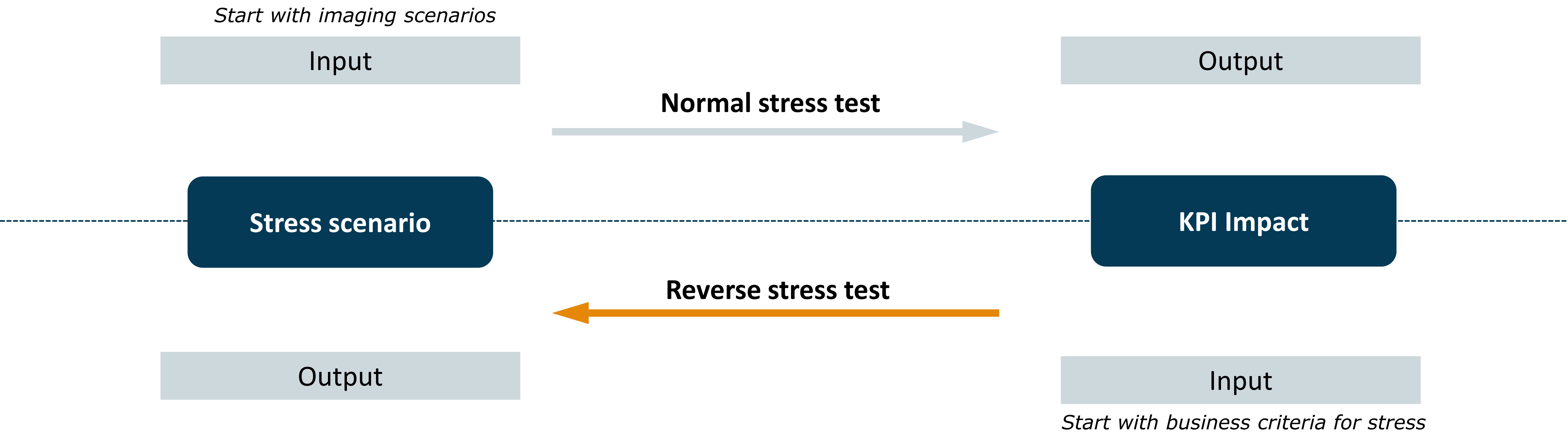
Stress scenario

Normal stress test

Output

KPI Impact

Research required for today’s stress test



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tkidinalog

DReSC: Digital Resilience in Supply Chains

Abhishta
Associate Professor
Cyber Security Risk Management
University of Twente

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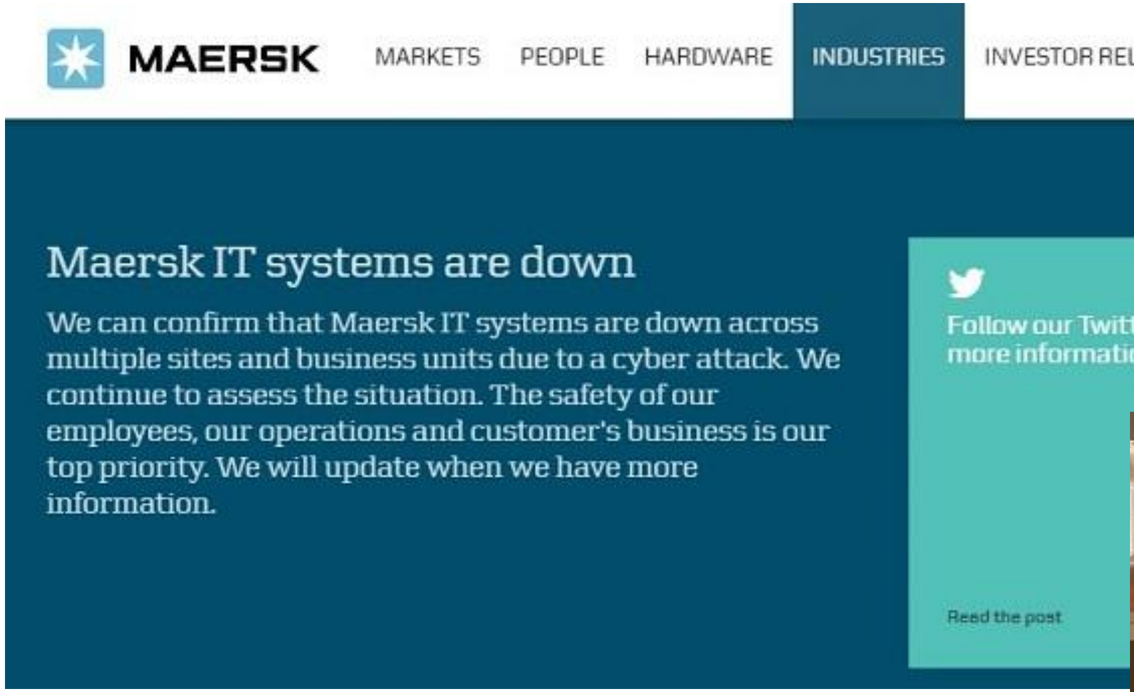
UNIVERSITY OF TWENTE.

TU/e JADS Jheronimus Academy of Data Science

Topsector Logistiek

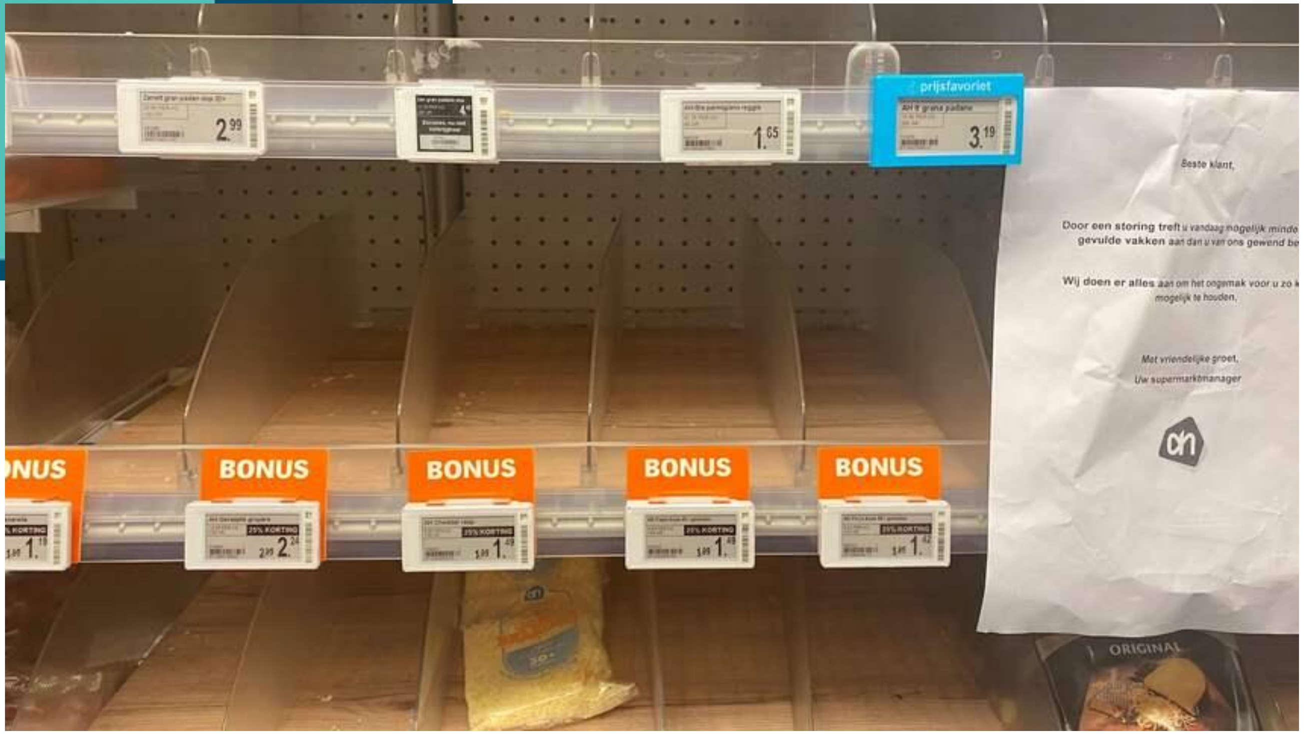


Maersk IT systems are down

We can confirm that Maersk IT systems are down across multiple sites and business units due to a cyber attack. We continue to assess the situation. The safety of our employees, our operations and customer's business is our top priority. We will update when we have more information.

Follow our Twitter feed for more information.

Read the post

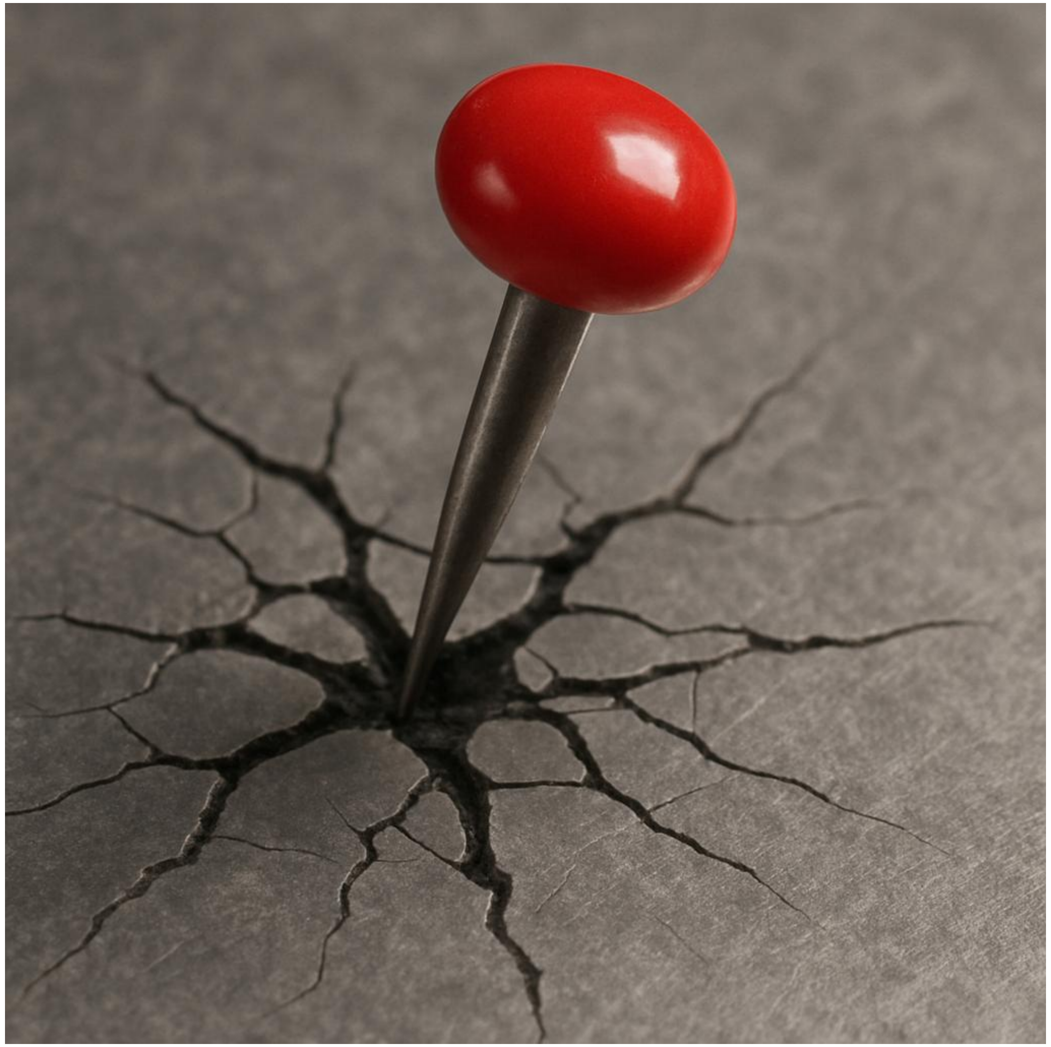


Beste klant,

Door een storing treft u vandaag mogelijk minde
gevulde vakken aan dan u van ons gewend be

Wij doen er alles aan om het ongemak voor u zo k
mogelijk te houden.

Met vriendelijke groet,
Uw supermarktmanager



AI Generated

NIS2 in brief

Applies to essential and important entities across sectors like logistics, energy, health, finance and digital infrastructure.

Requires cybersecurity policies, incident response plans, supply chain security, and encryption standards.

Major incidents must be reported within 24 hours, with follow-ups and final impact assessments.

Company leadership is directly responsible for compliance and must undergo cybersecurity training.

Non-compliance can lead to fines of up to €10 million or 2% of global annual turnover.

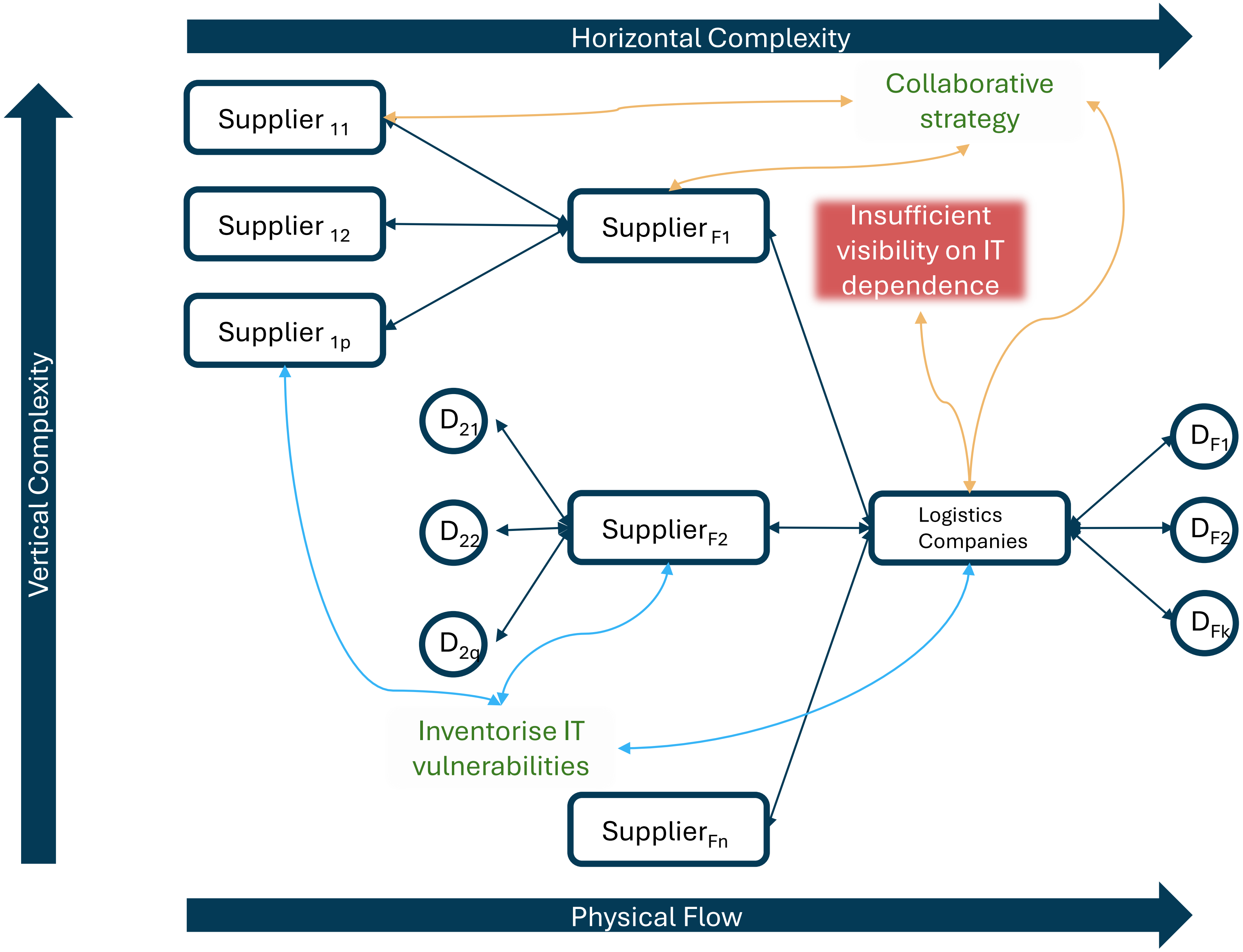
Popular Security Standards

ISO 27001

- **Risk-Based Framework**: Identify, assess, and treat information security risks using a structured, repeatable methodology.
- **Control Implementation**: Apply security controls from ISO 27001 Annex A, supported by documented policies and procedures.
- **Continuous Improvement**: Monitor, audit, and review the ISMS regularly to enhance effectiveness and respond to changes.

NIST CSF 2.0

- **Govern & Identify**: Define cybersecurity roles, responsibilities, and risks across assets, systems, and supply chains.
- **Protect & Detect**: Implement safeguards (e.g., access control, training) and monitor for anomalies or threats in real time.
- **Respond & Recover**: Act on incidents with structured response plans and restore operations while learning from disruptions.



Horizontal Complexity

Vertical Complexity

Supplier $_{11}$

Supplier $_{12}$

Supplier $_{1p}$

Supplier $_{F1}$

Supplier$_{F2}$

Supplier$_{Fn}$

D_{21}

D_{22}

D_{2q}

Logistics Companies

D_{F1}

D_{F2}

D_{Fk}

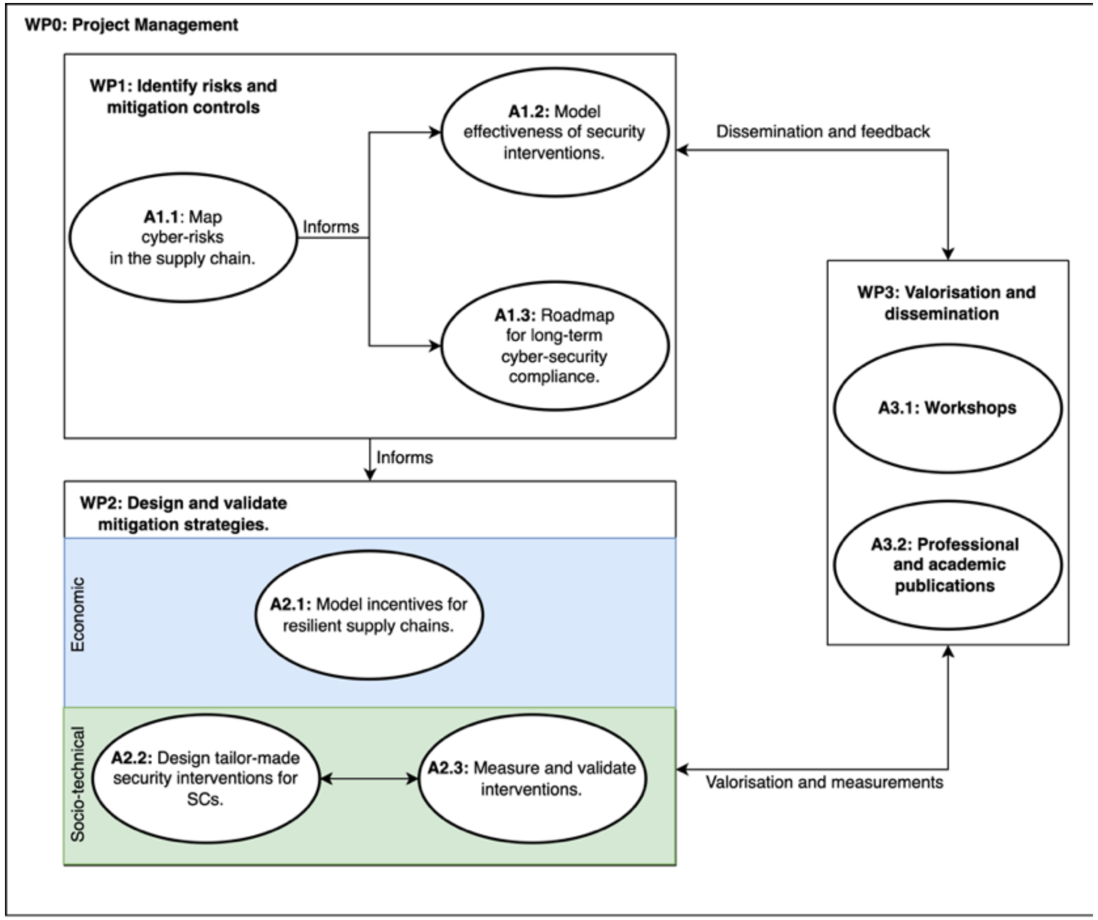
Collaborative strategy

Insufficient visibility on IT dependence

Inventorise IT vulnerabilities

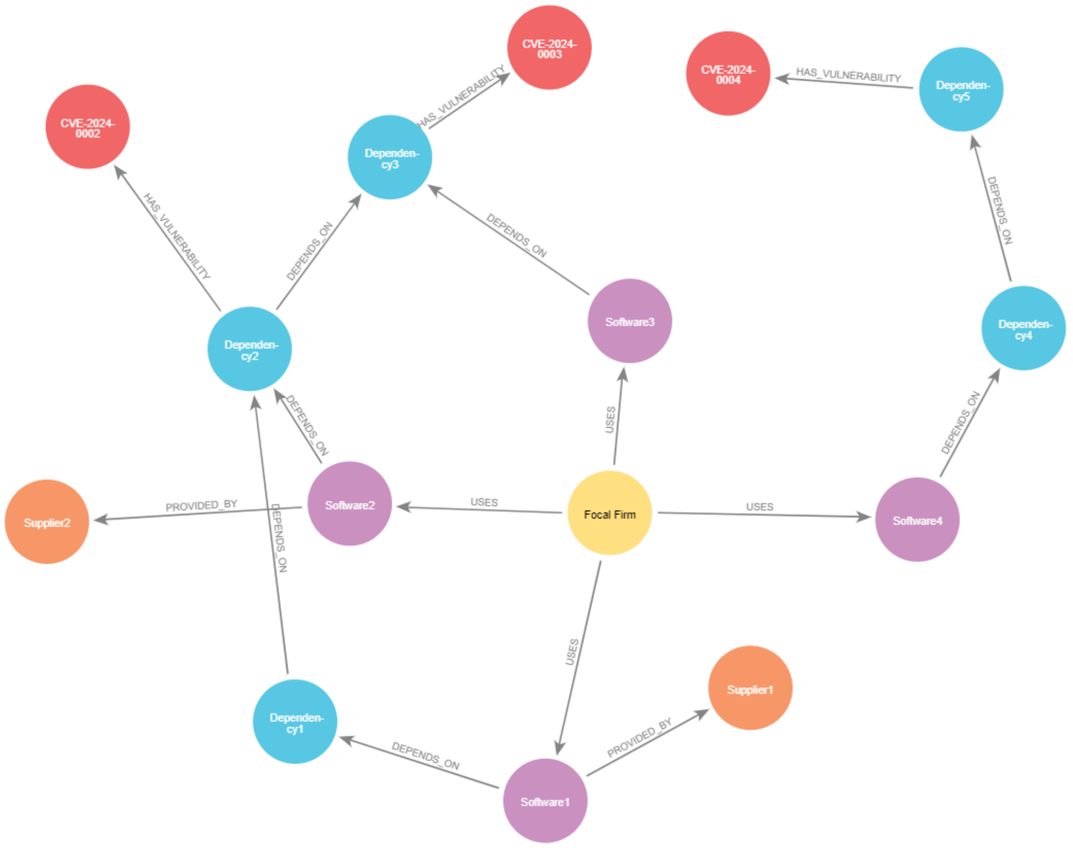
Physical Flow

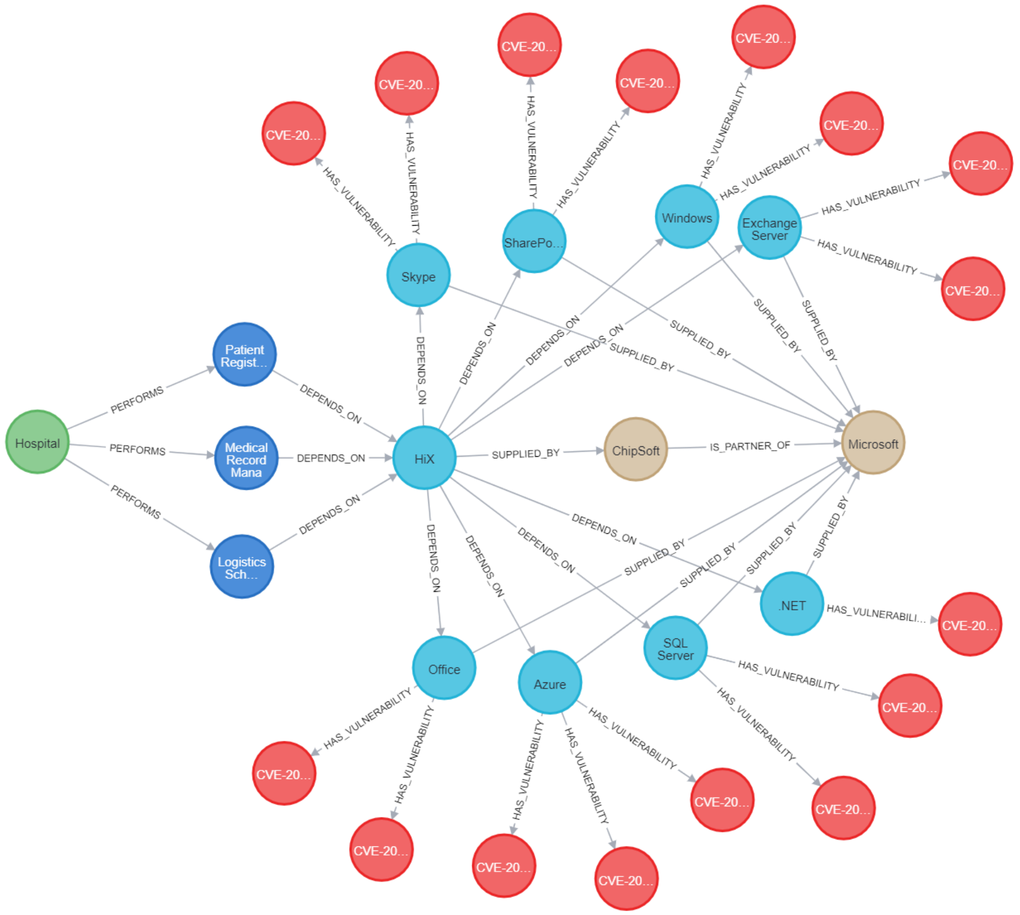
Our approach


WP0: Project Management
WP1: Identify risks and mitigation controls
A1.1: Map cyber-risks in the supply chain.
Informs
A1.2: Model effectiveness of security interventions.
A1.3: Roadmap for long-term cyber-security compliance.
Dissemination and feedback
Informs
WP2: Design and validate mitigation strategies.
Economic
A2.1: Model incentives for resilient supply chains.
Socio-technical
A2.2: Design tailor-made security interventions for SCs.
A2.3: Measure and validate interventions.
Valorisation and measurements
WP3: Valorisation and dissemination
A3.1: Workshops
A3.2: Professional and academic publications

- Address both **technical and non-technical** cybersecurity risks.
- Align **actions to strategy**, and embed both into organizational **culture**.
- Use **continuous feedback loops** from real-world practice to improve.
- Prioritize by resolving **known dependencies** and **existing risks** first.

Dependency to vulnerability mapping





Using Knowledge Graphs for Role-Based Cybersecurity Training

Building tailored training for real-world security challenges

System Mapping Process

We identify critical business processes and map software dependencies to create a comprehensive view of the digital ecosystem.

- Map critical workflows
- Document dependencies
- Identify vulnerabilities

Role-Based Security Training

Our approach links vulnerabilities to specific roles and creates training content tailored to each department's needs.

- Connect systems to roles
- Build knowledge graph
- Create targeted training

Behavioral Economics Integration

Security decisions are affected by cognitive biases and real-world pressures, like staff delaying updates due to time constraints.

- Change behavior patterns
- Reduce security fatigue
- Address decay over time

Any Questions

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https://abhishta.org