



FONTYS · INTERNATIONAL STUDENT PROJECTS 2026

Innovate Resilient Supply Chains

Eight real design challenges for SMEs — around disruption, data, cybersecurity, circularity, smart production and sustainable logistics.

Choose your challenge. Build a prototype. Create measurable impact.

Ready to work on a real challenge?

First online session · Wednesday 1 October, 14:00 (Amsterdam time)

Join us here: <https://teams.microsoft.com/meet/364291234002583?p=VV4rCd0OCcuHs3893D>

Objective

1. Form the project teams
Create balanced project teams by bringing together students from different universities and nationalities wherever possible.
2. Share practical and organizational information
We will provide key practical and organizational announcements to help you prepare for the program.
3. Present the detailed BIP-week schedule
We will present the detailed planning for the BIP week, including the main activities, sessions, and milestones.

Team Setup and Formation

1. Select your preferred projects
Review the project descriptions below and choose your first and second preferred project. During the meeting, teams will be formed based on shared interests.
2. Matching and short online interview
You can assess how well your background, interests, and availability match the available projects. Where useful, a brief online conversation may be planned to discuss expectations and your preferred project area.
3. Introduce yourself to your team. Share a short profile with your team, including:
 - Your study programme and year of study
 - Relevant knowledge and skills
 - A brief motivation and/or your specific project interests
4. Plan further orientation sessions. Additional sessions will be scheduled to discuss:
 - Final team formation
 - Project topics and scope
 - Expected workload
 - Collaboration arrangements
 - Communication channels
 - Practical and household-related announcements
5. Start your project. Your team will develop a prototype and test it with practitioners.

Good to know

1. Teamwork with real SME stakeholders and expert feedback
2. Design-thinking approach: research, framing, prototyping, testing
3. Portfolio-ready deliverables: maps, prototypes, test results, roadmaps
4. Working language: English

Kind regards,



Richard van der Veen,
Lecturer Fontys University of Applied Sciences
September 2026
r.vanderveen@fontys.nl

OVERVIEW

Which challenge fits you?

Every project is a real problem of small and medium-sized companies. You work in a team, do your own user research, frame your own How Might We question, build a prototype and test it with practitioners. You choose the depth: data and AI, cybersecurity, process improvement, sustainability or service design.

1. Disruption Radar for SME Supply Chains SUPPLY CHAIN RISK · DATA · EARLY WARNING <i>Spot the disruption before the customer does.</i>	2. Affordable SME Supply-Chain Control Tower KPIS · DASHBOARDS · POWER BI <i>One shared screen that tells everyone what needs action today.</i>
3. Cyber-Resilient Supplier Network Onboarding CYBERSECURITY · PROCUREMENT · THIRD-PARTY RISK <i>Trust is good. Proportionate verification is better.</i>	4. Cyber Continuity for SME Supply Chains RANSOMWARE · BUSINESS CONTINUITY · CRISIS PLAYBOOKS <i>The systems are down. The orders still have to ship.</i>
5. Circular Spare Parts for Supply Security CIRCULAR ECONOMY · REVERSE LOGISTICS · BUSINESS CASE <i>Yesterday's used part is tomorrow's delivery guarantee.</i>	6. Secure Cold-Chain Continuity for SMEs IOT · QUALITY · FOOD & PHARMA <i>Two degrees too warm can cost a whole shipment.</i>
7. Smart Production Continuity for SME Supply Chains OEE · LEAN · SMART MANUFACTURING <i>Every micro-stop on the floor becomes a late delivery downstream.</i>	8. Resilient Last-Mile Delivery for SMEs URBAN LOGISTICS · SUSTAINABILITY · SERVICE DESIGN <i>The last kilometre decides cost, carbon and customer trust.</i>

All projects share the same rhythm: explore the current situation · frame the real problem · build a prototype · test with at least two stakeholders · deliver a one-page implementation roadmap.



PROJECT 1 • SUPPLY CHAIN RISK • DATA • EARLY WARNING

Disruption Radar for SME Supply Chains

Spot the disruption before the customer does.

The challenge

Smaller companies often discover supplier, transport, inventory or demand problems far too late, because planning lives in spreadsheets, e-mails and the heads of a few key people.

How might we...

How might we help supply-chain teams identify, understand and respond to emerging disruptions before customer delivery or business continuity is seriously affected?

What you will do

Map the supply chain: suppliers, material and information flows, stock, transport, customers
Find critical dependencies and single points of failure
Define the early-warning signals that really matter
Design a way to prioritise disruptions and realistic response options

Possible prototypes

Disruption-risk dashboard
Supplier dependency & risk map
Traffic-light alert system
Escalation workflow
Scenario-planning canvas

What you learn

Risk analysis, supply-chain mapping, data-driven decision support, stakeholder research.

Success looks like

Users can name the three most urgent risks within five minutes — and know who acts on each of them.



PROJECT 2 • KPIS • DASHBOARDS • POWER BI

Affordable SME Supply-Chain Control Tower

One shared screen that tells everyone what needs action today.

The challenge

The data is there — in the ERP system, spreadsheets, supplier mails and transport portals — but nobody has a shared view. Enterprise control towers are far too expensive and complex for an SME.

How might we...

How might we give an SME an affordable, easy-to-use overview of performance, exceptions and risks, so employees can act quickly and consistently?

What you will do

- Identify the decisions users make every day and every week
- Select a minimal set of useful indicators instead of a crowded dashboard
- Inventory data sources and their quality limits
- Design exception rules, ownership and follow-up

Possible prototypes

- Power BI, Excel or Figma control tower
- Daily exception list
- Supplier performance scorecard
- Stock-out risk warning
- KPI dictionary & weekly routine

What you learn

KPI design, business intelligence, data quality, operational routines, UX of dashboards.

Success looks like

Every KPI has one clear definition and one owner — and the tool runs on data the company already has.



PROJECT 3 • CYBERSECURITY • PROCUREMENT • THIRD-PARTY RISK

Cyber-Resilient Supplier Network Onboarding

Trust is good. Proportionate verification is better.

The challenge

Suppliers get access to ordering systems, planning data, engineering files, customer data and sometimes operational technology. An SME cannot audit everyone or demand heavy certification from every partner.

How might we...

How might we help an SME assess and improve supplier cyber resilience during onboarding — proportionate, understandable and practical for both sides?

What you will do

- Map the current supplier onboarding journey
- Identify the data, systems and processes suppliers can affect
- Segment suppliers by business and cyber criticality
- Define proportionate minimum security requirements and an escalation path

Possible prototypes

- Tiered cyber-risk questionnaire
- Supplier resilience scorecard
- Onboarding journey map
- Evidence checklist
- Third-party risk register
- Remediation plan template

What you learn

Third-party risk management, security controls, process design, contracting basics.

Success looks like

Low-risk suppliers get a light process, critical suppliers a deeper one — and every serious gap has an owner and a deadline.



PROJECT 4 • RANSOMWARE • BUSINESS CONTINUITY • CRISIS PLAYBOOKS

Cyber Continuity for SME Supply Chains

The systems are down. The orders still have to ship.

The challenge

A ransomware attack can block access to orders, stock records, planning, customer contacts, invoices and production systems. Unclear roles and communication often make the damage worse than the malware.

How might we...

How might we help an SME keep its most critical supply-chain activities running and recover safely when a serious cyber incident hits?

What you will do

Determine which business services must continue no matter what
Map dependencies on systems, data, suppliers, people and communication
Define containment and continuity actions for the first hours
Design fallback procedures and a recovery priority

Possible prototypes

First-24-hours response playbook
Critical-process continuity board
Cyber-incident decision tree
Manual fallback order workflow
Recovery priority matrix
Tabletop exercise

What you learn

Business impact analysis, incident response, crisis communication, resilience testing.

Success looks like

You run a tabletop exercise in which the team keeps critical orders and customer communication alive without its systems.



PROJECT 5 • CIRCULAR ECONOMY • REVERSE LOGISTICS • BUSINESS CASE

Circular Spare Parts for Supply Security

Yesterday's used part is tomorrow's delivery guarantee.

The challenge

Industrial companies scrap, hoard or overlook used spare parts that could be repaired, remanufactured or reused — while at the same time struggling with long lead times, high prices and supplier dependency.

How might we...

How might we help an SME build a trusted circular spare-parts flow that improves supply security, cuts waste and still makes economic sense?

What you will do

Choose a suitable family of spare parts and map the current linear flow
Find opportunities for return, inspection, grading, repair, reuse and recycling
Define quality, traceability, warranty and safety requirements
Design a workable reverse-logistics process

Possible prototypes

Returned-part intake form
Grading & inspection tool
Repair-or-replace decision aid
Circular service blueprint
Reverse-logistics process map
Marketplace mock-up

What you learn

Value-stream mapping, circular design, quality assurance, business-case thinking.

Success looks like

A simple business case shows the circular route beats the linear one on cost, lead time, availability or waste.



PROJECT 6 • IOT • QUALITY • FOOD & PHARMA

Secure Cold-Chain Continuity for SMEs

Two degrees too warm can cost a whole shipment.

The challenge

Companies shipping temperature-sensitive products face spoilage, quality loss and compliance failures, while visibility is scattered across carriers, warehouses, drivers and customers. Connected sensors add data-integrity and security questions of their own.

How might we...

How might we help an SME detect, understand and respond to cold-chain disruptions in time — while making sure the monitoring data can be trusted?

What you will do

- Map the cold chain from origin to final delivery
- Identify critical control points and handovers
- Define the measurements and alerts users actually need
- Design the response to a temperature excursion and secure the sensor data

Possible prototypes

- Shipment-condition dashboard
- Excursion alert interface
- Cold-chain journey map
- Alert & escalation workflow
- QR shipment-condition card
- Secure IoT data-flow diagram

What you learn

IoT data flows, quality management, HACCP-style control points, data integrity and security.

Success looks like

Every alert shows timing, duration and severity — and leads to one owner and one decision: release or quarantine.



PROJECT 7 • OEE • LEAN • SMART MANUFACTURING

Smart Production Continuity for SME Supply Chains

Every micro-stop on the floor becomes a late delivery downstream.

The challenge

Machine failures, micro-stops, quality losses, changeovers and late maintenance turn into missed delivery dates, rush orders, overtime and unhappy customers — and SMEs rarely have spare capacity or advanced analytics.

How might we...

How might we help an SME detect and reduce production losses that threaten delivery reliability and supply-chain continuity?

What you will do

Map how shop-floor disruptions hit customer delivery
 Identify the biggest losses and failure modes
 Define useful data: run/stop, cycle time, downtime reasons, output, rejects, maintenance
 Design a way to recognise and prioritise loss causes

Possible prototypes

OEE / continuity dashboard
 Downtime registration interface
 Machine-status visualisation
 Maintenance priority board
 Micro-stop alert concept
 Shift-handover board

What you learn

OEE, SPC, Lean and DMAIC, manufacturing data, improvement proposals with measurable effect.

Success looks like

The concept links machine performance to delivery performance — and works without a full industrial data platform.



PROJECT 8 · URBAN LOGISTICS · SUSTAINABILITY · SERVICE DESIGN

Resilient Last-Mile Delivery for SMEs

The last kilometre decides cost, carbon and customer trust.

The challenge

The last mile is the most expensive, uncertain and carbon-intensive part of the chain. Failed deliveries, weak routes, low vehicle utilisation, congestion and poor communication eat both service levels and margin.

How might we...

How might we help an SME improve last-mile reliability, flexibility and sustainability while keeping customers happy and costs under control?

What you will do

- Map the delivery journey and its pain points
- Analyse failed deliveries, excess kilometres, waiting time and low utilisation
- Distinguish customer types and delivery contexts
- Develop, test and assess an improved delivery concept

Possible prototypes

- Delivery-preference interface
- Route consolidation visualisation
- Failed-delivery prevention workflow
- Customer notification concept
- Parcel-locker service blueprint
- Last-mile performance dashboard

What you learn

Service design, route and capacity thinking, sustainability impact assessment, customer research.

Success looks like

Fewer failed first attempts or unnecessary kilometres — with cost, convenience and CO2 trade-offs made explicit.