UNTANGLED

Complementarities of digital and workplace innovation in manufacturing and services – beyond stating the obvious

ESSI webinar „Harnessing the benefits of AI, Industry 5.0 and other digital innovations — more opportunities but also more challenges for social innovations?", October 19th, 2023
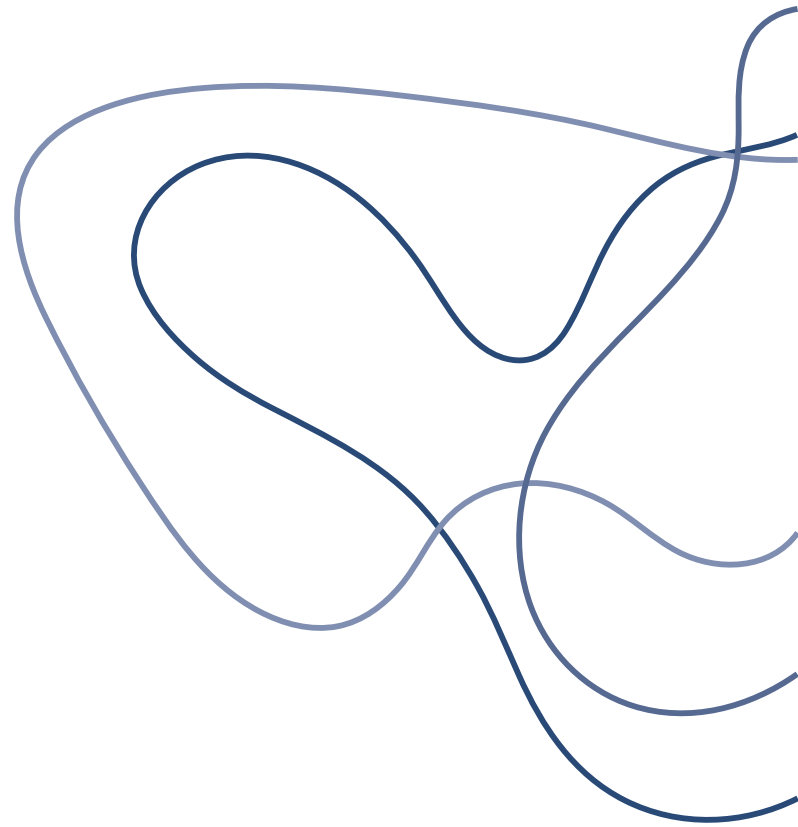
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Overview

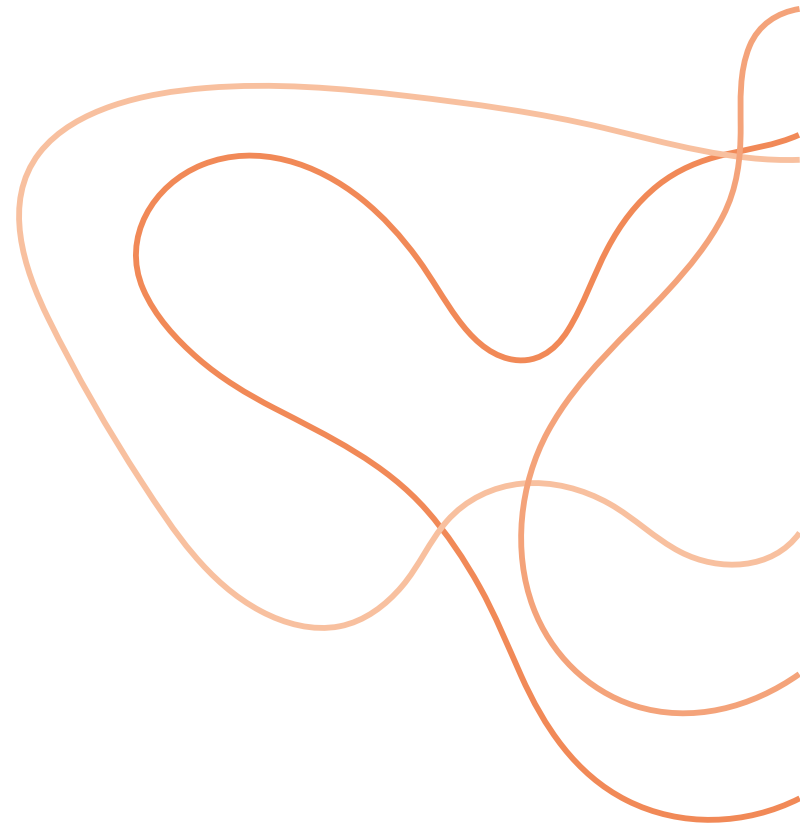# Overview

- Workplace innovation – 2-3 theory angles
- Two cases from the UNTANGLED project:
  - Workplace innovation *ex negativo* (disrupting TIC services and picking up the pieces)
  - An aspirational "new work" company (and its limitations)
- Conclusions

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Workplace innovation – 2-3 theory angles

Workplace innovation: the neo-institutionalist and normative

- Workplace innovation is a **normative** concept that does **not only** rely on normative reasoning:

- „Workplace innovation is connected to the 'advancement' of jobs, people in jobs, organisations, the performance of organisations, and support [of] renewal and innovation."(Oeij, Dhondt, & McMurray, 2021, 2)

- A promise of **win – win:** better jobs – better economic performance, more innovation, more inclusiveness, fairer sharing of revenues

- **Complementary** workplace innovation: necessary to reap the benefits of technology (Edwards-Schachtner)

- Provides models, best practices, encourages imitation (but mostly „normal" skilled, unionised work in manufacturing)

# Workplace innovation: agency and labour process

- A normatively agnostic perspective on **social innovation** allowing for unequal power relations, politics:
  „"a process of collective creation, in the course of which the members of a particular total population learn, i.e., invent and establish, new ways of playing the social game of collaboration and conflict, […] and in the course of which they acquire the necessary ... abilities to do this." (Crozier & Friedberg, 1993, 19, translation by Jürgen Howaldt)

- A **labour process perspective** that sees two contradictory needs of capitalism (Huws, 2019) :
  - harnessing human creativity for innovation
  - fragmentation and regimentation of work for exploitation and control

The UNTANGLED case studies: From trends and impacts to dynamics and processes
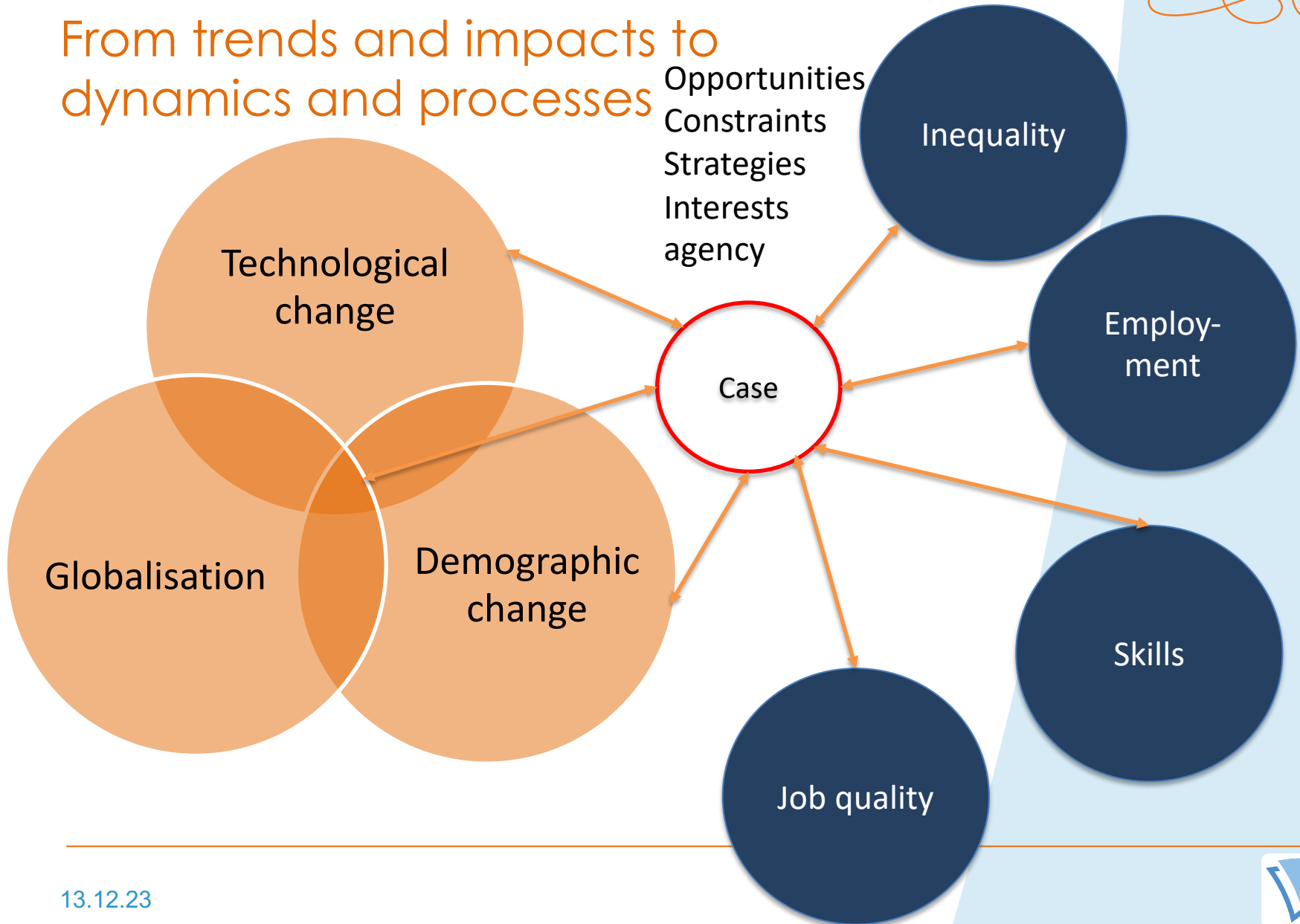
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Two cases
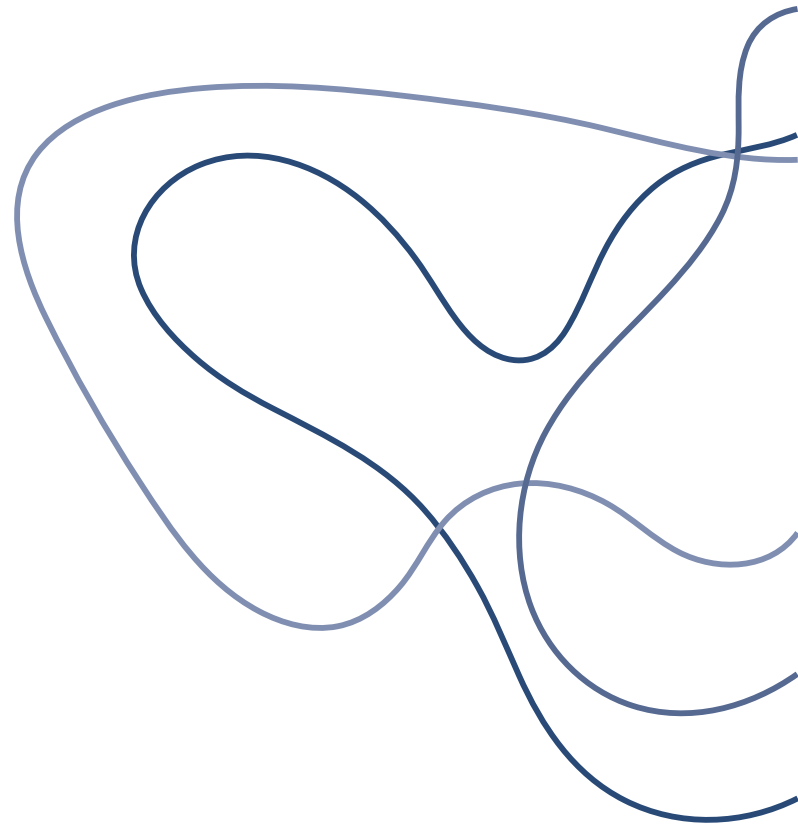
TRONIC: the company

- Austrian electronics equipment manufacturer with 90 employees, technologically "conservative" products,

- local manufacturing, long-term collaboration with clients (world market, OEM for large automation companies, but also some "manufacturing as a service")

- family-owned, from the 2010s transforming into a "new work" company with roughly sociocratic mode of self-governance

- embracing automation and digitalization with focus on efficiency and competitiveness

- increasingly pursuing IoT (sensors and data transmission) to add services to its products, building a hardware and "new work" ecosystem

TRONIC: the work

- Dual labour market,
  - Production 95% female, semi-skilled, diverse ages and origins, hired first through staffing agency, shift work,
  - R&D, IT, quality management, logistics mostly male
- Production alternating 4-day week (every other Friday off), introduced for sustainability reasons
- White-collar flexible contracts and working from home for years
- No works council (uncommon in AT), applies collective agreement of electronics sector, raises and bonuses through own negotiation system
- Unequal involvement in participation but initiative is appreciated on the shopfloor as well
- very entrepreneurial, aspirational culture of self-initiated training – that not everybody buys into
- Awareness of "burden" of participation.

Workers' views

"Then I quickly realised that ... the R&D department isn't the point, but it needs thinking in terms of networks. That means, I have quite a decent network with marketing and production, where the subject [of IoT] got more support. Also from other sides, and it slowly diffused into R&D. And that, the subject of networks, that really makes [the company] a bit different" (Engineer2)

"I was more or less thrown in at the deep end. [...] I knew the processes, how the whole thing is connected with other processes. And of course, many things I had to find out for myself, so all in all, there was no training as had been planned" (Production planner 1, now studying for the mechatronics technician exam)

„Suddenly you realised more and more: Hey, I don't need him [my supervisor] as a support! I can decide for myself anyway. Because we often stood together and said: So it would be better if we did it that way. But wait, who do we have to ask now? Well, nobody. ... Well, do we just decide like that? Yes, let's just do it like this!" (Prodiction planner 2).

The TIC company

- The testing, inspection and certification (TIC) sector is at the intersection of several megatrends and heavily affected by international standards and legislation

- The **company** in focus in the case study:
  - Major player in the sector, active in several countries
  - Internal restructuring, which raised internal and external complexity and need for coordination and communication (***organisational change***)
    - Service provision no longer organised by region but by service type
    - Planning of servicing appointments now handled by one central department
    - Break up longstanding relationships between client and inspector
  - Introduction of new 'technology', with major impact on workers' autonomy (***technological change***)
    - Improve front- and back-office processes and standardise the service provision
    - Significant technical issues with rollout; issues are poorly tackled at slow pace
    - Digitalisation → Apps based on checklists

The TIC company

- The **digital transformation process**:
  - Company is very focused on technological advancements in its service provision and internal processes
  - Decision and implementation top-down with a strong focus on achieving a fast and radical break from the past ways of working
  - No involvement of key departments until very late stage (e.g., HR)
  - No involvement of workers and trade unions

- **Consequences** of organisational and technological change:
  - Complex jobs; simple organisation → Simple jobs; complex organisation
  - Clash with core values of company and its workers: professional identify, use of skills, less engagement, lower job satisfaction; physical health risks
  - 8% of those using technology reported increased productivity; 11% better performance; 16% higher work pace; 70% negative perception clients
  - 62% only wants to use technology in the future if changes are introduced
  - Yet, vast majority is positive towards working with new technologies

The TIC company

- **Consequences** of organisational and technological change:
  - Breakdown of trust between workers and management
  - Major 'social conflict': involvement of mediator, strikes
  - Work-life balance: better or worse?
  - Role of team leaders

- **How these consequences were handled**:
  - New management, higher focus on worker involvement, training, task forces on specific challenges, improved communication, improved technology, …
  - Key lesson: technological innovation can only work in the right context – organisational and social practices matter

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Conclusions
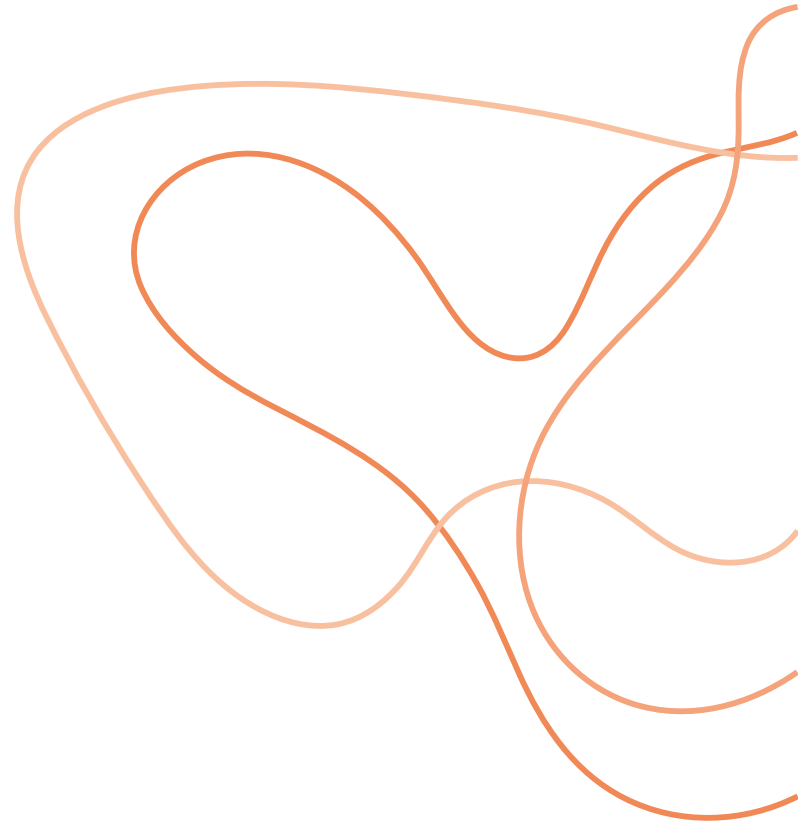
Conclusions

- Two cases from extreme ends:
- TRONIC very aspirational but somehow selective
- TIC driven to workplace innovation in a "repair" mode

- Each with their ambiguities
- TRONIC: Work intensification – also through participation!
- TIC: Better work-life balance – but job loss and less discretion

- Both: major changes with no union involvement

- Either way, interplay of technology, markets, restructuring, management and worker strategies, and history – view technology in context!
- Even the highly-skilled are not immune to regimentation, standardization, or surveillance
- Embracing change: requires some slack (patient capital) and (perceived) opportunities, a culture of (some) flexicurity and confidence

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