

WORK & TRANSFORMATION

The industrial robot arrived with a capital expenditure request. AI arrives through the browser.

What the automation wave of the 1970s and 80s taught us about managing workplace change – and why those very lessons are harder to apply today.

A contribution to shaping Human Friendly Automation (HFA) by business and HR leadership, and by change management for AI & automation – a pre-read for the [Executive Retreat](#) certificate course and for the [Certified AI Adoption & Human Friendly Automation Professional](#) certification at The School of Change.

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When people talk about AI and work today, much of it sounds like uncharted territory. It isn't. Between 1968 and 1989, the Federal Republic of Germany built a remarkably dense set of instruments to socially organize technological change in production. What follows from that for AI is less a blueprint than an uncomfortable diagnosis.

How Change Was Organized Back Then

The robotization of the factory was addressed in Germany on three levels simultaneously.

At the state level. The research and action program 'Humanization of Working Life' (HdA) ran from 1974 to 1989, backed by the Federal Ministry of Research and the Federal Ministry of Labor. More than 1,600 projects were funded with around 1.4 billion deutschmarks – at Ruhrkohle, VW, Bosch, Hoesch, Krupp, AEG-Telefunken, but also in public administration. Its priorities read like a modern change manifesto: strengthening the participation of

employees and their worker representatives, new forms of work organization, the introduction of new technologies, and expanded training programs. The starting point was criticism of Taylorist-Fordist work organization; the symbol of that criticism was the assembly line.

At the collective-bargaining level. IG Metall had been concluding rationalization protection agreements since the 1950s, reaching the metal and electrical industry in 1968. Their purpose: to protect employees from the consequences of technical and organizational innovation – in particular from downgrading and loss of earnings upon internal redeployment. The crucial point is the sequence: the social framework was negotiated before the technology was deployed, not afterward.

At the workplace level. The 1972 Works Constitution Act (Betriebsverfassungsgesetz) requires the employer, under Section 90, to inform the works council of the planning of technical facilities and of work processes and procedures in good time – and to consult early enough that suggestions and concerns can still be taken into account during planning. The legislature thus tied participation to the planning stage, not to the rollout.

What HR Did — And Where It Fell Short

On the question of what HR departments actually did, the solid evidence is thinner than the program rhetoric. The most telling individual study comes from Linda Argote, Paul Goodman, and David Schkade (Carnegie Mellon, 1983). They followed a US plant with roughly 1,000 mostly blue-collar employees through the installation of its first robot – with interviews conducted roughly two and a half months before and after startup, supplemented by conversations in engineering, maintenance, quality assurance, and HR.

On paper, the company did a lot right: announcing the change about a year in advance, an open house with a robot demonstration, remarks from the plant manager, posted notices, conversations with foremen. The results were nonetheless sobering:

- Communication ≠ understanding. 89% of employees received information through weekly shop-floor meetings – but those meetings' contribution to actual understanding was rated as low. The most effective channels were written information and the demonstration; only 16% received anything in writing, and fewer than half attended the open house.
- Zero involvement. Asked whether the robot was coming, where it would be placed, and who would operate it, employees consistently reported: no influence. On two of the three questions, they said they would have liked to have influence.
- Optimism turns. Before implementation, respondents expected higher productivity, lower costs, and better quality. After implementation, their assessments became more complex and more pessimistic – significantly so on accident risk, costs, and quality.

- The work shifted from hand to head. Lifting and loading became monitoring and programming. The heavy, exhausting labor disappeared – but responsibility, tension, and isolation increased. One operator described feeling effectively cut off from coworkers because of having to concentrate on the robot.
- Job classification became a point of conflict. Management rated the role higher. The workforce considered the new grade too low.

The recommendations the authors drew from this are 43 years old and read like a current playbook: settle questions of job security and pay before implementation; diagnose the organization beforehand; define an explicit participation strategy; set up a feedback mechanism that checks whether communication is actually getting through; equip first-line supervisors with information and backing, because employees turn to them first during change; check the new role for fit with employees' skills and preferences; train backup operators.

The theoretical anchor behind this is older: in the 1948 Harwood study, Coch and French showed that participation in shaping change was associated with higher productivity and lower turnover. In fairness, Bartlem and Locke critically re-examined that interpretation in 1981 and argued that perceived pay equity may have been the actually effective factor. That, too, is a lesson – participation without material clarity doesn't carry far.

Did HR Carry Blue-Collar Employees Through It? Yes, Partly.

An honest answer has two sides.

In favor: pay protection and safeguards against downgrading were enshrined in collective agreements. Training was a declared HdA goal. And in 1984, in „Das Ende der Arbeitsteilung?“ („The End of the Division of Labor?“), Horst Kern and Michael Schumann actually described an upgrading: at the jobs that remained, organizational patterns emerged in which previously separated tasks – machine operation, maintenance, quality control – were reunited with qualified skilled workers. They called this 'new production concepts' and emphasized that industrial restructuring could be shaped.

Against it: the same authors found that many skilled-worker positions had already fallen victim to automation and the rationalization measures that followed. As early as their 1970 study, they had described a polarization of skill levels among industrial workers as a central finding. And they explicitly warned against a distribution of life chances along the lines of segmentation and polarization. The HdA program itself was replaced in 1989 by „Arbeit und Technik“ („Work and Technology“) – with a shift toward the economy's innovative capacity that weakened its social- and labor-policy funding goals. Historian Gina Fuhrich titled her dissertation on the HdA projects at VW – on group work and the introduction of industrial robots – not without reason, under the question: „Humanisierung oder Rationalisierung?“ („Humanization or Rationalization?“)

In short: the change was negotiated, funded, and legally anchored. Even so, it was only partly cushioned.

Four Reasons AI Is a Different Kind of Management Problem

1. There's No Longer a Capital-Investment Gate

An industrial robot was a visible, expensive, permit-requiring installation. That is precisely why Section 90 of the Works Constitution Act worked: there was a defined planning moment. Generative AI has largely dissolved that moment. According to the IAB Establishment Panel, the share of German establishments using generative AI rose from 5% (2023) to roughly 25% (2025) – a fivefold increase in two years. 90% of these establishments rely on freely accessible applications; only 16% use purchased models trained on their own data.

2. Adoption Runs Bottom-Up, Not Top-Down

A representative survey of nearly 10,000 employees in Germany (ifo/ZEW 2025/26) shows broad reach but shallow depth: 64% use AI tools, but only 20% do so frequently. Formal, employer-driven rollout is associated with more frequent use, more training, and higher perceived productivity gains – but it does not expand access. Informal use, initiated by employees themselves, is the norm.

3. The Impact Falls at the Task Level, Not the Occupation Level

In the field experiment with 758 BCG consultants (Dell'Acqua et al. 2023), users working inside the AI's performance frontier completed 12.2% more tasks, were 25.1% faster, and delivered quality scores over 40% higher. On a task outside that frontier, they found the correct solution 19% less often than the control group. This 'jagged frontier' cuts across job titles – and it is not visible from the outside. That makes classic job design and workforce planning blunt instruments.

4. The Skill Gradient Is Reversed

With industrial robots, value creation shifted upward, toward the skilled worker. With generative AI, the largest field study to date (Brynjolfsson, Li & Raymond, Quarterly Journal of Economics 2025, 5,172 customer-service employees) shows the opposite: +15% productivity on average, with the largest gains among less experienced and lower-skilled employees – while the most experienced workers saw only small speed gains and slight quality declines. That is something entirely different from an HR standpoint: it devalues experience advantages instead of reinforcing them.

And the governance gap has been measured. In the 2025 IAB Establishment Panel, only just over one in four AI-using establishments offered training on how to work with the technology. One in five has developed internal rules, and another one in five is planning to. By comparison:

in the 1980s, there were collective agreements, a federal program, and a codetermination law before the equipment was even installed.

How to Make This Change Human-Friendly Now

1. Security and trust first, technology second. Argote et al. were unambiguous: questions about job security and pay must be answered before implementation, or the effectiveness of the entire rollout declines. A job-security commitment for the transition period is not a feel-good gesture — it's the precondition for employees to disclose efficiency gains at all.

Rules are one thing. What has been missing in the past, however, is a cross-industry, people-centered set of values for the automation era. A stance held by business owners that is anchored and lived out within organizations and that gives employees trust. This foundation is now offered for the first time by the [Human Friendly Automation-Werte-Charta](#), which many organizations are already using as the basis for their AI transformation.

2. Involvement before rollout, not communication after. Measure whether communication is landing — not whether it took place. The 89% finding is the most expensive misunderstanding in change management.
3. Task maps, not job analyses. Map tasks along the AI's performance frontier — not occupations. The AI frontier itself must become explicit training content: the 19% effect among BCG consultants cited above occurs precisely where people don't know where the tool stops working.
4. Identity-impact analysis. AI often delivers high-quality results and, in many operational services, can already take over tasks completely. People then no longer perform these tasks themselves, but instead operate essentially in the "backend," checking the AI's output. This frequently leads to a significant, subjectively experienced devaluation of the work. It can likewise produce work intensification and psychological stress. Quiet quitting and rising sick leave are then the result. Identity analysis during AI projects, together with HR-provided support measures, is critical.
5. Equip first-line leadership. Team leads and shift supervisors are the first point of contact during change — and typically the group with the least information advantage.
6. People-Centered Change Management Model. Classic change management for technology rollouts has been limited, in line with Fred Davis's Technology Acceptance Model (TAM), to end users' adoption of the technology itself. For the AI era, a holistic framework must be applied that also captures the impact on work. This is delivered by the [Human Friendly Automation Adoption Model](#) developed by author Lars Schatilow.
7. 'Informate,' not just 'automate.' In 1988, Shoshana Zuboff described the dual nature of information technology: it can automate work — or make processes visible and distribute knowledge further down the organization. Her central thesis: that is a choice, not a property of the technology. It applies unchanged to large language models.

8. Fund training, don't just demand it. Since April 2024, Germany's Qualifizierungsgeld (training allowance, Section 82a SGB III) has provided wage replacement of 60% or 67% during structural-change-related training of more than 120 hours. Among the requirements is a works agreement or an establishment-level collective agreement – the training need must affect a relevant share of the workforce (benchmark: 20% at larger establishments, 10% at smaller ones). The instrument exists. It is rarely used.
9. Treat codetermination as an accelerator, not a brake. Since the Works Council Modernization Act of 2021, 'artificial intelligence' is named explicitly in the Works Constitution Act: in Section 90(1) No. 3 (notice when planning work processes), in Section 95(2a) (selection guidelines), and in Section 80(3), under which the need for an expert is presumed when assessing AI implementation. The law from the robot era has been updated for AI. So far, it is used only sparingly.
10. Make shadow use visible before you regulate it. If 64% are using AI but only a fifth of establishments have rules in place, the relevant question isn't 'Do we allow AI?' but 'Do we know where it's already changing the work?'

The real difference isn't the technology. It's organizational: robotization had a defined planning moment where participation, training, and safeguards could be anchored. AI diffusion has no such moment. Anyone in change management who waits for it will miss it.

And the second lesson is the more uncomfortable one: even with a federal program, a collective bargaining agreement, and the Works Constitution Act, the social management of automation succeeded only partially. This time, we're starting with far less infrastructure – and far greater speed.

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