RATP Case Study

How Automated Metros Are Transforming Jobs

The automation of metros and the evolution of professional qualifications in the passenger transport industry

Brussels, 5 March 2024

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Jean-François Révah

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An psychosociologist *from outside* but *no so stranger to* the professional world

A socio-technical support approach applied to transport companies

TRANS FORMATION

Jean-François Révah

Numerous projects for underground railways in France and abroad over many years

Lisbon

Stockholm

Porto

Paris

Toulouse

Genoa

Lille

Brussels

The 4 levels of railway automation: Grade of Automation (GoA)

- **GoA 1: Controlled Manual Driving**
  - The driver manages the train
  - Crossing signals and exceeding speed limits are monitored by the ATO system (Automatic Train Operation)
- **GoA 2: Semi-Automated Driving**
  - The train operates on automatic pilot
  - The driver opens and closes the doors, controls the start, keeps an eye on the lane, manages unforeseen events and can take control again...
- **GoA 3: Automated driving, driverless but with personnel on board**
  - A non-driver is present on board
  - It manages the opening and closing of doors as well as unforeseen events
- **GoA 4: Fully Automated Driving**
  - No on board staff
  - A single Control Centre (CC) supervises all operations remotely

RATP a pioneer in automated metro systems : 73 years of expertise

- **The RATP group, a global urban transport operator**
  - 71,000 employees, 6 billion in sales, 8 modes of transport
  - Underground/Railway, Bus/Tramway, New mobility, New Services
  - Paris, Ile-de-France, France, International (15 countries, 5 continents)
- **Key stages in the automation of RATP's rail network**
  - 1951, *world first*: MP51, GoA2 Semi-Automated Driving
  - 1967, *First* centralised CC; 1979, 90% of the metro fleet in GoA2
  - 1989, RER Line A, *world first*: high-capacity railway equipped with automated control on its central Parisian section
  - 1998, Line 14: *world first*: first high-capacity GoA4 line
  - 2012, Line 1: *world first*: century-old and first busiest Paris metro line transformed to GoA4 with no major service interruption
  - 2015, Lines 5: new-generation GoA2 with cab-signal
  - 2023, Line 4: century-old line and second busiest transformed into GoA4 without major service interruption

Why automate?
Benefits now clearly identified (1/2)

- **Improving the technical performance of a key mass transit mode**
  - **Regularity, availability, flexibility, capacity, safety, reliability**
    - ⇨ High frequencies with ever-shorter intervals between trains (85 seconds) - with a high level of safety
    - ⇨ Real-time adaptation of services to user needs
    - ⇨ Increased capacity on existing overloaded lines
- **Making mass transit a highquality passenger experience**
  - **Transforming the mobility experience with renovated, better-lit, cleaner and more reassuring transport areas**
    - ⇨ Reducing the risk of intruders and accidents on busy main lines by installing platform-edge doors that communicate information
    - ⇨ Improved real-time information (on-board information through new equipment; pilot project using AI to streamline traffic)
    - ⇨ Better accessibility for people with special needs

Why automate?
Benefits now clearly identified (2/2)

- **Encouraging the use of a low-carbon, efficient form of public transport**
  - **Improving the ecological footprint of public transport networks**
    - ⇨ Helping cities meet low-carbon goals (car congestion, factor in pollution)
    - ⇨ Faster journeys within the city, especially during rush hours
    - ⇨ Return and loyalty of users who made other choices during the health crisis
    - ⇨ More attractiveness to new travellers (thanks to use of the latest technologies)
  - **Cost savings**
    - ⇨ Saving energy (optimising electric braking,…)
    - ⇨ Reducing operating costs (by 15 to 30% despite the additional cost of maintaining landing doors)
    - ⇨ Optimising the renovation of obsolete equipment (rolling stock at the end of their life; renewal of signalling, etc.)
    - ⇨ Facilitating the extension of existing lines to adapt long-standing networks

Metro drivers on busy lines : what do they think of GoA2 automation?

- **GoA2: effective protection against unsafe actions but the ambiguities of the driver's role as automaton supervisor**
  - **GoA2 automation, a safety tool against incidents and accidents**
    - ⇨ Checks on the crossing of closed signals and non-compliance with procedures or traffic rules
  - **GoA2 drivers and the ambivalent sense of their professional identity**
    - ⇨ A rewarding job driving the rail mode with real responsibility for for safety and quality of service
    - ⇨ A monotonous, even boring reality of a solitary job. And the risk of professional deskilling
  - **Drivers faced with the contradictions and tensions of the workplace**
    - ⇨ Comply strictly with safety rules **or** speed up passenger boarding and alighting to optimise parking times in station
    - ⇨ The tension of rush hours and the stress of powerlessness in the face of the risks of suicide and passenger accidents
  - ***Increased automation*** **and** ***landing doors*** **make work easier and alliviate drudgery**

And what do *metro drivers* think of *GoA4 driverless metros*?

- **The advantages of automation outweigh when the company knows how to *use a technical project as a lever for social transformation***
  - **Drivers and their union representatives are the actors of a "company project" based on genuinely good reasons**
    - ⇨ *Benefits* for passengers and the Mobility Organising Authority
    - ⇨ But also for the staff concerned, *particularly on the main lines, with their high levels of traffic and stress*
  - **Drivers support the merits of automation decisions when they are not confronted with "bad reasons"**
    - ⇨ We don't automate to "*save on payroll*"
    - ⇨ We don't automate to "*put an end to driver strikes*"
    - ⇨ We don't automate "*because the robot is more reliable than the human*"
  - **Drivers are directly involved, over the long term, in the negotiations that affect them: HR solutions are designed to promote transition**
    - ⇨ Dealing with social issues takes a long time to prepare, co-construct, negotiate, implement and evaluate

What impact will automation have on the workforce and jobs (1/2)

- **Quantitative and qualitative performance: the example of the automation of century-old line N° 1 without major service interruption**
  - **RATP's workforce remains stable after automation**
    - ⇨ The 257 drivers and 27 shunters have been redeployed to the new organisation
  - **New organisation, new missions, new jobs**
    - ⇨ (1) Change of hierarchical category (for an occupation blocked in the career: flat pyramid) and team work: *operations supervisors in CCS* or *supervisors of field agents in contact with the public*
    - ⇨ (2) Redeployment of *metro drivers to less stressful lines in the network, equipped with high-performance GoA2 automated systems*
    - ⇨ (3) *Reconversions to other professions*: contact with the public in the field, etc.
  - **In total, the automation of line 1 has led to the creation of 21 in-house management positions**

What impact will automation have on the workforce and jobs (2/2)

- **Large number of new jobs among trusted partners: the "extended enterprise"**
  - ⇨ Modification of signalling systems
  - ⇨ Adaptation of the power supply
  - ⇨ Reconstruction of the platforms (to support the landing doors)
  - ⇨ Deployment of landing doors (to prevent falls and intrusions)
  - ⇨ Creation of new emergency exits and renovation of technical premises
- **The quantitative and qualitative positive conclusions are comparable for the automation of line 4, RATP's second main line for the last 100 years**

Automated public transport is popular with the public and accepted by the employees concerned

- **Disappearance of the driver at the head of the train and complete automating of century-old RATP metro lines do not worry the public**
  - **Technical expertise and public service values are recognised**
  - **The public believes that incidents involving the operation of the automated metro should be managed automatically, with the same apparent flexibility...**
- **Jobs move during the transition**
  - **Some jobs are disappearing**
    - ⇨ Manual driving, terminal shunting
  - **New roles emerge and critical skills develop**
    - ⇨ Remote control and supervision of systems
    - ⇨ Various types of engineering ("Formal methods", "Second look", etc.)
    - ⇨ Customer relations, passenger information, emergency response
    - ⇨ Predictive maintenance
    - ⇨ Training (technical skills, postures, scripting presence in the field according to circumstances, etc.)

Automation cannot do without the "human-in-the-loop ": the human element remains indispensable

- **Public transport remains a labour-intensive industry...**
  - **Operators will always need professionals, particularly metro drivers for intermediate levels of automation**
    - ⇨ Automation increases performance but does not aim to make up for weaknesses in the "human factor"
    - ⇨ Automation offers an opportunity to make the most of the key role played by human resources in decongesting megacities
- **The performance of public transport automation is useful to restore the attractiveness of the sector**
  - **Several factors are damaging the image of operators and exacerbating the shortage of driving and maintenance professionals**
    - ⇨ Frequent strikes penalise users who need it most
    - ⇨ Post Covid aspirations and rejection of the constraints of service professions
  - **The automation projects developed by RATP highlight the modernity of public transport professions**
    - ⇨ Operations, Maintenance, Technical and Social Engineering

Thank you for your attention

U.S. Market and Regulatory Perspectives on Automation and Labor in Transportation

We-Transform | Brussels

March 5, 2024 12:00 – 12:30 PM

Matthew W. Daus, Esq.

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- **Transportation Research Board**
  - *Former-Co-Chair*, Legal Committee for Shared AVs/CVs
  - *TRB/US DOT Delegate*, US-EU Symposium, Socio-Economic Impact of AVs
- **New York City Bar Association**
  - *Chair*, Transportation Law Committee
  - *Co-chair*, Task Force on Digital Technologies, Electronic Mobility Services subcommittee

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Socio-Economic Impacts of Automated and Connected Vehicles (2018)

National Academies of Sciences, Engineering, and Medicine. 2018. Socioeconomic Impacts of Automated and Connected Vehicles. Washington, DC: The National Academies Press. https://doi.org/10.17226/25359.

6th EU-US Transport Research Symposium on "Socio-Economic Impacts of Automated and Connected Vehicles"

- Organized by Transportation Research Board & European Commission
- 2018 symposium hosted by TRB and European Commission
  - Discussions on pace, scope, impacts of connected and automated vehicles and shared mobility (CAVSM)
  - In the U.S. vs. Europe
- **Key Take Aways on Economic and Workforce Issues**
  - Access to opportunities, underpinned by mobility, enables prosperity enhanced by new CAV services.
  - Driven by the potential for operational efficiency, organizations are exploring opportunities for CVs and AVs in long-haul trucking operations and urban deliveries.
  - A proliferation of connected, automated (as trials), and/or shared passenger transport services has emerged, particularly in cities in the US and EU.
  - Impacts include changes to mode choice, acceptability of trip length, land use values, access to employment, retail, and congestion.
  - CAV services deployment and operations may create new jobs, but there is a high likelihood of job losses from driving-focused roles.
  - Regulatory authorities must be aware of these impacts to maximize the benefits and minimize harm from the proliferation of CAV services.
- Available at https://nap.nationalacademies.org/read/25359/chapter/1

U.S. Driver-Related Labor Laws

Impacts on the marketplace

Independent Contractor Model in Transportation

- Model allows drivers to operate as small business owners who invest in and control their own work environment
- Common practice in the intermodal industry for decades
  - Used by taxi companies since the late 1970s, now used by TNCs
  - Over 80% of trucking companies use owner-operator drivers or independent contractors
- Federal law bars independent contractors from collective and sectoral bargaining, drivers may form industry groups (*e.g.*, NYTWA, IDG)

Worker Classification Laws

- Federal and state agencies and courts may apply different tests and standards, or weigh the factors differently, depending on the relevant laws and regulations
- Used to determine worker's tax obligations, rights, protections, etc.
  - IRS, DOL, and NLRB have different criteria for determining worker status for tax, wage and hour, and labor relations purposes

The ABC Test

- **ABC test** presumes worker is employee unless the worker:
  - A: Free from employer's control or direction in performance of service
  - B: Providing service outside the usual course of business of the employer
  - C: Customarily engaged in independently established trade, occupation, profession, or business
- **ABC test is extremely difficult for limousines services to pass**
- ABC in the US
  - California, New Jersey, Mass., and Vermont use it in wage & hour laws
  - 26 states use some version of the ABC test in unemployment law
  - 10 states apply it broadly to a sector, typically construction or landscaping

U.S. DOL Rule Change

- 6-factor “economic reality” test:
  - Opportunity for profit or loss depending on managerial skill
  - Investments by worker and employer
    - DOL: Use of personal vehicle owned or leased by worker is not an investment that is capital or entrepreneurial in nature”
  - Degree of permanence of work relationship
  - Nature and degree of control
  - Extent to which work performed is integral part of employer’s business
  - Skill and initiative
- Applies to FLSA *only* (federal wage & hour law)
- Effective March 11, 2024

California’s AB 5 & Prop 22

- September 2019: CA AB 5 reclassified many workers as employees using **ABC Test**
- TNCs and goods delivery companies used ballot initiative, **Prop 22**, to exempt app-based drivers from AB 5 classification
  - Defines app-based workers as independent contractors.
  - Provides "alternative benefits" for drivers, including health care subsidies, partial earnings guarantee, and insurance
- Litigation Update
  - March 10, 2023: CA State appeals court overturned court ruling that Prop 22 was unenforceable.
    - The court upheld the law, but severed a provision that requires a 7/8 majority vote to amend workers' rights to collective bargaining
    - Also ruled that drivers are independent contractors, not entitled to benefits
  - June 28, 2023: California Supreme Court granted SEIU's request to decide the constitutionality of Proposition 22. No decision yet.

TNC Driver Wages

- **NYC** was first to set **minimum wage for Uber & Lyft** (High-Volume For-Hire Services) drivers in 2019
  - Local Law 150 of 2018
  - Sets per minute and per mile rates that adjust annually with CPI-W
    - Non-WAV per mile: $1.360
    - Non-WAV per minute: $0.583
    - WAV per mile: $1.760
    - WAV per minute: $0.583
    - Out-of-town per mile (non-WAV): $1.576
    - Out-of-town per mile (WAV): $2.044
    - Out-of-town per minute: $0.675

- **Washington State** established **statewide requirements for TNCs**
  - House Bill 2076
  - TNCs must pay the greater of the minimum per mile amount of $1.38 and per minute amount of $0.59, or a minimum per-trip amount of $5.17 on all trips, including if the customer or TNC cancels the trip.
  - Started January 1, 2022
  - Replaced the Seattle TNC Minimum Compensation Ordinance

Labor Unions vs. AVs

- National Teamsters Union, Transport Workers Union of America, and other unions target AV legislation, arguing for strong regulation, human drivers
- Feb 2024, California legislators reintroduced a bill (AB 2286) requiring safety operators onboard autonomous heavy-duty trucks.
  - Gov. Gavin Newsom vetoed the original bill in September 2023
  - Cruise opposed, framed as hindering life-saving tech advancement & supply chain innovation
- Labor groups are pushing similar bills in Indiana (SB 57), New York (SB 7758), and Washington (SB 5872)
- Feb 2024, Transport Workers Union secured first-of-its kind contract language with a public transportation agency in Ohio giving the union veto power over AV deployment
  - Bus Operators and Mechanics cannot be laid off or have their wages reduced because of new or modified technology

US View on EU Policies

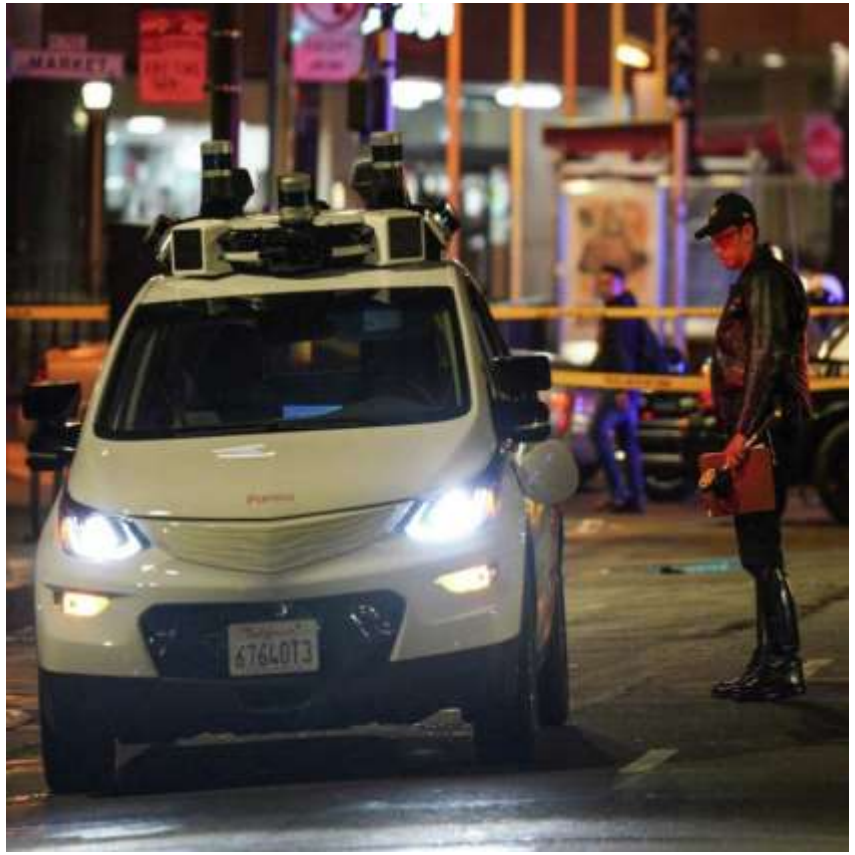
WE-TRANSFORM Policy Agenda Validation

US Approach to Automation and Labor

- Generally adopts **market driven approach** to automation
  - Minimal government intervention
- Focus on **innovation and economic growth**
  - Encouraging tech advancements & competitive business environment
- **Limited regulation**
  - Allowing flexibility to adapt to changing job markets
- Focus on **individual responsibility**
  - For upskilling and adapting to changing job markets

WE-TRANSFORM Policy Proposals

- Favors ***comprehensive & proactive approach*** to automation & labor
- Focus on ***social protection & worker rights***
  - Safeguarding workers' rights & ensuring fair treatment in the face of automation
- Investment in ***reskilling and upskilling***
  - Government-supported programs to equip workers with skills necessary to thrive in the automated future



Policy No. 1: EU Harmonization

- **US Approach**
  - **Prioritize market-driven solutions** over centralized regulation
  - **Preference for voluntary industry standards and self-regulation**
  - US Department of Labor and the National Labor Relations Board tend to focus on enforcing existing laws
  - **Decentralized approach**—states set their own labor and employment laws—can result in patchwork of regulations
- **Comparison**
  - WE-TRANSFORM emphasizes ***convergence and standardization*** contrasts with US preference for flexibility and market-driven solutions
  - May lead to varying levels of regulatory compliance and enforcement, as well as different outcomes for businesses and workers

Policy No. 2: Minimum Wage and Rethinking Working Hours & Conditions

- **US Approach**
  - **Minimum wage, working hours, and working conditions regulated by states,** limited federal oversight
  - **Flexible working hours reduction may resonate with some** policymakers and businesses to adapt to changing work environments and enhance work-life balance
- **Comparison**
  - WE-TRANSFORM approach emphasizes harmonization and standardization of working conditions across member states to ensure fair market competition and protect workers' rights
  - ***US favors decentralized approach, states set & enforce labor laws***
  - Both recognize the importance of flexibility in adapting to changing work environments

Policy No. 3: Maintaining Occupational Safety

- **US approach**
  - **Job safety typically regulated by federal and state laws**, industry-specific standards enforced by agencies such as OSHA
  - **Emphasis on risk assessments, safety equipment, and training programs to mitigate hazards** associated with automation
  - Worker reintegration programs in the event of job loss may receive support from various government agencies
  - Some support for **insurance for accidents related to new tech**
- **Comparison**
  - ***WE-TRANSFORM and the US both prioritize worker safety***—emphasizing regulations, guidelines, and accountability
  - WE-TRANSFORM has more centralized regulation and coordination among member states, with emphasis on mandatory social dialogue and collective bargaining
  - US approach typically involves industry-specific regulations and voluntary initiatives

Policy No 4: Co-managing Digitalization & Automation Processes / Collective Bargaining

- **US approach**
  - Collective bargaining for automation **may align with existing practices in some US industries**
  - Voluntary initiatives and industry-specific collaborations, not compulsory co-determination
  - **Some support for enhancing social dialogue and cooperation between management and workers**, concerns around interfering with company autonomy and flexibility
  - Debates about the extent of government involvement in regulating and financing such initiatives, market-driven approaches and private sector investment
- **Comparison**
  - WE-TRANSFORM approach is more centralized regulation and coordination among member states, with a focus on compulsory and structured collective bargaining
  - ***US relies more on voluntary initiatives and industry-led collaborations, less emphasis on compulsory collective bargaining***

Policy No. 5: Sustainability of Working Conditions

- **US approach**
  - **Varies by industry and region**, mix of federal and state-level regulations
  - **A joint committee on working conditions and prioritizing workers in tech evolution may resonate with some** US businesses and trade unions, aligning with existing efforts to promote worker safety and well-being
  - Concerns about interference with company autonomy, practicality of implementing joint committees
- **Comparison**
  - WE-TRANSFORM approach involves more centralized regulation and coordination, with a focus on establishing joint committees and licensing systems to address technological change in the workforce
  - ***The US tends to rely more on industry-specific regulations and voluntary initiatives, with less emphasis on compulsory joint committees and licensing***

Policy No. 6: Replacement Tables - Company Skills Plan & Strengthening Second-level Collective Bargaining

- **US approach**
  - **Varies by industries & companies**, mix of internal initiatives & external regulations
  - Larger companies with robust HR resources may be open to "Replacement Tables" – **may be infeasible and impractical for small companies with limited resources**
  - Most **collective bargaining takes place at the level of the individual firm**; unions usually bargain with management at the enterprise level
- **Comparison**
  - ***Unlike Europe, the US does not have sectoral bargaining between peak-level social partners (second-level)***
  - US tends to rely on industry-specific initiatives and voluntary actions, with less emphasis on compulsory Replacement Tables and joint committees
  - WE-TRANSFORM approach involves more centralized regulation and coordination, with focus on establishing comprehensive Replacement Tables, joint committees, and regulatory frameworks to address workforce adaptation and skills development

Policy No. 7:
Up-skilling, Reskilling and Lifelong Learning

- **US approach**
  - Upskilling and learning initiatives driven by individual companies or industry associations, not government mandates
  - Training plans tailored to specific needs of company/industry, with a **focus on enhancing workforce skills to remain competitive**
  - **Attracting talent and addressing turnover** prompts companies to invest in training and development programs
- **Comparison**
  - WE-TRANSFORM and the US recognize the importance of upskilling, reskilling, and lifelong learning in response to technological advancements
  - Differences in:
    - Government involvement in regulating training initiatives
    - Level of collaboration between companies and labor unions
  - ***US emphasizes industry-driven initiatives and decentralized training plans,***
  - ***EU's approach is more centralized coordination and regulation to ensure consistency and effectiveness.***

Policy No. 8: Implement Governments Awareness in the Work Nature Changes

- **US approach**
  - **Policies and laws often evolve in response** to technological advancements, shifts in employment patterns, and issues
  - Policies, but not laws, are implemented in advance to standardize working conditions and minimize unacceptable situations for gig workers
- **Comparison**
  - WE-TRANSFORM approach may involve more centralized coordination and standardization of working conditions and protections for workers
  - ***Whereas the US periodically updates regulations to address specific concerns after they arise***

Policy No. 9:
Fostering Female Representation in Transportation

- **US approach**
  - Initiatives—diversity programs, mentorship opportunities, and advocacy campaigns—aim to **address gender disparities and promote inclusivity in traditionally male-dominated sectors like transportation**
  - **Legislative measures**—anti-discrimination laws and affirmative action policies—help combat gender bias and promoting equal employment opportunities
- **Comparison**
  - **The EU and the US are very similar**
  - Both have laws to address gender discrimination and promote gender-neutral policies
  - Initiatives—remote working, flexible scheduling, family-friendly policies—are advocated in the US and the EU

Policy No. 10:
Protecting Older Workers from Reskilling

- **US approach**
  - Policies to protect older workers focus on age discrimination laws, retirement benefits, and workforce development
  - Federal and state **laws prohibit age discrimination against workers 40+**
  - Workforce development programs provide **job training and placement**
  - **Age-friendly practices**—flexible work arrangements, phased retirement options, and mentorship programs—are encouraged
- **Comparison**
  - **The EU and the US are very similar**
  - Both value protecting older workers from reskilling challenges and ensuring their continued participation in the workforce
  - Both have age discrimination laws
  - Both have workforce development programs to provide training and support for older workers transitioning to new roles or industries

Policy No. 11: Protecting Disabled Workers

- **US approach**
  - Federal and state laws **prohibit discrimination against individuals with disabilities in employment** and **require reasonable accommodations** to enable disabled individuals to perform their job duties
  - Federal and state **programs help disabled individuals find employment and access training opportunities**
  - Disability employment initiatives focus on promoting diversity, inclusion, and accessibility in the workplace
- **Comparison**
  - **The EU and the US are very similar**
  - Both have laws mandating reasonable accommodations and prohibiting discrimination
  - Both have government-funded programs provide support services, training, and job placement assistance

IATR Model Regulations & Guiding Principles for Robotaxis

www.iatr.global

IATR Robotaxi Deployment Guiding Principles

- **Safety:** S-CAEVs must attempt level of safety exceeding current taxi, TNC, & FHV services – Vision Zero goals and principles
- **Sustainability:** Improve environmental outcomes through zero-emission fleets, increasing vehicle efficiency, mitigating congestion, shared ride use
- **Accessibility:** Ensure WAVs are available & incorporated into testing & implementation phases
- **Equity:** Provide access to all communities, ensure affordability
- **Multimodal Connectivity:** Integrate with existing transit systems to provide seamless connection for travelers
- **Workforce Development & Labor Displacement:** Ensure employment opportunities and retraining for taxi & FHV drivers

- Available at https://bit.ly/3zkdqiR & www.iatr.global

IATR INTERNATIONAL ASSOCIATION OF TRANSPORTATION REGULATORS

IATR's Best Practices, Guiding Principles & Model Regulations

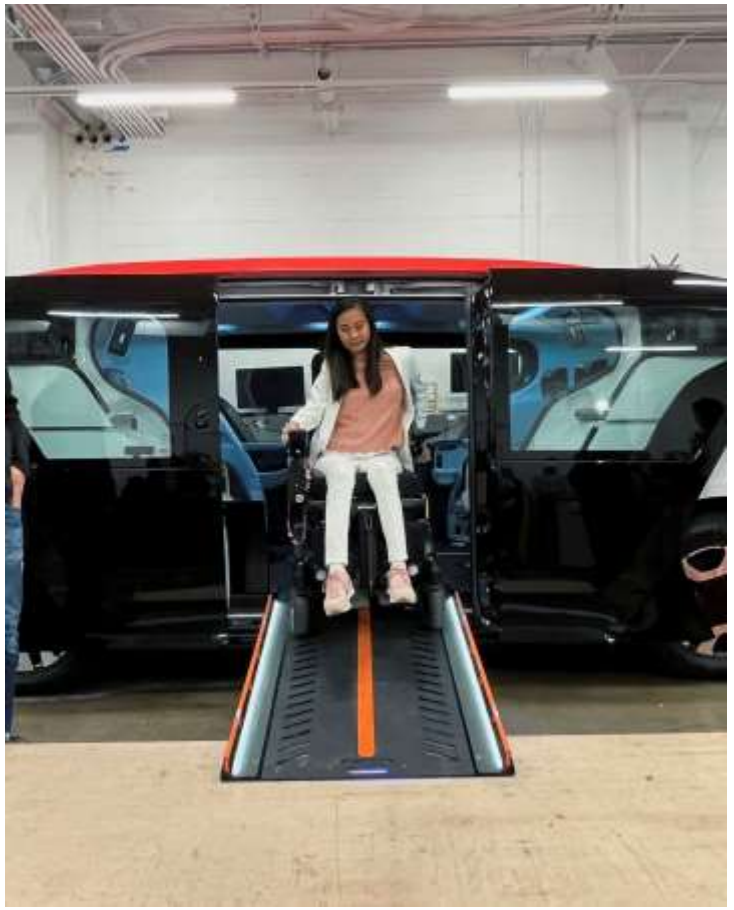
"Robotaxis:" Testing & Implementation of Shared-Connected-Automated-Electric For-Hire Vehicles (S-CAEVs)

Guiding Principle: Preserve Worker Rights

- AVs in the taxi, for-hire vehicle, and TNC sectors should ensure:
  - **Employment and retraining opportunities are available** for drivers to assume other roles
  - **Removal of the driver from the vehicle is a phased process** that ensures that loss of property, earnings, and/or retirement benefits are minimized
  - **For taxi medallion systems,** medallions are purchased or operated as an integral part of the system to lead to increased revenue for owners and drivers
- U.S. Taxi, Ridehail, Shuttle & Limo Drivers stats (2022)
  - Number of jobs: 395,700
  - Average earnings: $32,440/yr; $15.59/hr
- Labor and financing costs are among the largest expenses for taxi operators.
- So, the taxi fleet owners may view the robotaxi as a means to immediately reduce expenses...

Guiding Principle: Guarantee Accessibility

- **Accessibility:** S-CAEVs must have wheelchair accessible vehicles in testing and deployment
  - Accessibility must not be an afterthought
  - Requires trained personnel to secure wheelchairs & accompany riders as needed
  - Prioritize public subsidies for AVs in paratransit & Non-Emergency Medical Transport
- **Labor impact?** Few drivers want to perform WAV work due to deadheading and high costs of vehicles
- **AV WAV Services**
  - May Mobility launched WAV AVs in Minnesota in 2022; also in Arizona, Michigan, and Texas
  - Cruise unveiled a wheelchair-accessible robotaxi in 2023, with plans to launch in 2024
  - Riders can access WAVs (driven manually) using the Waymo One app



Governance –
Retain Local Control with Uniform Standards

- **Government must take a leadership role** determining framework and business service models for implementation, in conjunction with guiding principles and consultation with private stakeholders
  - Consolidate and streamline decision-making among multiple government agencies
- **Government and private sector should work together** to ensure that an S-CAEV paradigm is harmonized wherever possible, including a common lexicon with definitions and industry standards
- **Opposition to CPUC AV Vote**
  - San Francisco Municipal Transportation Authority (SFMTA):
    - The tech is not ready
    - We rely on reports by the public and emergency services because operators will not share critical data – still seeing too many collisions
  - LA Department of Transportation (LADOT):
    - Concerns around blocking traffic and first responders
    - Concerns around technical failures leading to collisions or unexpected behavior
    - Cybersecurity threats

Thank you! Questions?

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RÉPUBLIQUE FRANÇAISE
Liberté
Égalité
Fraternité

Céreq

Upskillig/Reskilling policies in France. Results from a national thematic review

CEDEFOP TCR France outline

- **Objective**: to shed light on the transposition in France of the European Recommendation (2016/C484/01) on "Skills development pathways: new opportunities for low-skilled adults".

- Analysis priorities:
  - **Reach out and (re)mobilising low-skilled adults**, their access to and use of support services and schemes
  - support for low-skilled adults, particularly in its **individualised and formative dimensions.**

- TCR results available here : https://www.cedefop.europa.eu/en/publications/5594

A look to research protocol implemented

Surveys Calendar:

November 2023

January – April 2023

January – April 2022

MACRO PHASE
National Stakeholders
1 workshop
Unions, employers org., professional org.
Government agencies

MESO PHASE – Providers' managing bodies and other stakeholders of the regional ecosystem (authorities, joint bodies, PES, and more)

41 interviews (individual or collective) with 70 key persons having steering and management responsibilities

MICRO PHASE – Services and schemes providers
3 regions ;
4 Schemes observed ;
78 interviews with field guidance advisors and counsellors
225 questionnaires collected among beneficiaries

How UP is implemented in France

- EU UP recommendation echoes the following French legal framework:
  - **Law 2018-771, 5 September 2018,**
    “Freedom to choose one’s own professional future”
  - **Main financial instrument : Skills Investment Plan 2018-2022**
    (*Plan d’Investissement dans les Compétences* – PIC)
  - Complemented by the Post-Covid **Recovery measures for the French economy (Plan Relance)** through its component dedicated to training and employment.

Upskilling and reskilling the less qualified adult workers at risks of expulsion of the labour market

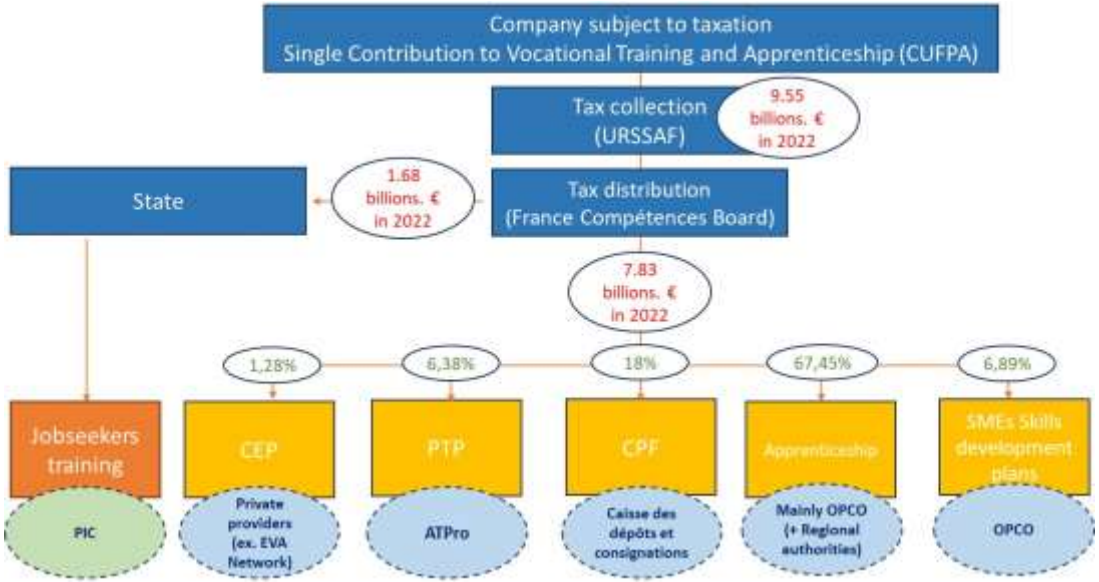
Identifying and encouraging the less qualified workers

- **How to reach out to the less qualified adult workers ?**
  - Worker's outreach is intermediated by companies
  - Information on upskilling instruments **not enough promoted** internally in companies
  - **No specific upskilling policy** dedicated to low skilled workers
  - **Weak involvement** of low skilled workers in upskilling activities

Funding issues

Trends observed for adult workers:

- **New top-down mechanisms** for distributing resources affecting joint organisations capacities
- Difficulties in **scaling up**
- **No interoperability** among different instruments
- **Little or no incentives** to train the **less qualified workers** (i.e. RPL, Basic skills certifications, fight against illiteracy)
- Starting in 2024 – **budget cuts announced …**



Career developement counseling service (CEP)

Conseil en évolution professionnelle

"to guarantee access to a universal, neutral, personalised and free support services to any person who expresses the need to take stock of their professional situation and, if necessary, to develop and formalise a professional development project".

- **“Individual right”** securing career paths, developing people's autonomy and their ability to choose their professional future.
- Since 2020, the service has been **delivered by regional private consortia of stakeholders**, selected by France Compétences State Agency as part of a 5-year public contract.
- The CEP is a service **open to all** employees and self-employed. **It does not specifically target the less qualified**.

Professional Transitions Projects (PTP)

Projet de transition professionnelle

- The PTP is a **funding scheme** for vocational training.
- Under certain conditions, it can be used by **employees wishing to take a training course leading to a qualification, in order to change profession or occupation**.
- The CEP guidance provision can lead to PTP funds bidding.
- Bidding for funds requires to submit a professional project to a joint-commission deciding on training costs and work vacancy support.

Individual training account (CPF)

Compte personnel de formation

- From 2014 onwards, all economically active citizen (workers, young and adult job-seekers) residing in France enjoy the **“right to training” extended to all**.
- With 2018 reform, autonomy of people is even more emphasised by making **financial resources directly available** on an individual training account which can be **used without intermediaries**.
- Training choices are done through the dedicated website or smartphone application (moncompteformation.fr).

Who supports companies to develop upskilling strategies ?

- Raise companies awareness and funding upskilling are tasks assigned to **Skills developement facilitators (OPCOs)**.
- OPCOs implement branches' **skills developement policies** and support companies for the set up of **skill developement plans (PDC)**.
- four separate funds :
  - PDC < 50 (State Funded)
  - FNE Formation (State funded)
  - Joint agreement funds (Private)
  - Company contributions on top of taxes (Private)
- 2,6 billions € spent in 2022 (36 % public resources)
- 1 French worker trained out of 5, in 2022

Companies' contribution to upskilling, some challenges

- Institutional and financial context **not conducive to company-based upskilling**
  - **short-term** HR concerns
  - Upskilling strategies to be **financed on top of compulsory tax contributions** (except for SME's)
  - Huge **emphasis on youth apprenticeship** rather than adult upskilling

- **Recruitment shortage issues** make companies more incline to open up to the less qualified adults
  - **pressure vs. opportunity** (ambivalent opinions)
  - **What form of cooperation** with PES and guidance providers ?

- Growing communication efforts on **CEP** but **still biased in company perception**
  - **CEP is not just for professional transition outside the belonging company**, but it also supports individuals career progress and skills development within their company
  - Possible synergies to be established between "**CEP as individual right"** and **Company upskilling strategies**

Digitalisation of companies and AI systems: what effects on work and skills?

Céreq expertise in the social construction of dynamics linked to major digital transitions

- How are companies (outside the digital sector) affected by the dynamics of digitisation (dematerialisation, robotisation, automation, AI)?
- What are the effects of digital technology on skills and competences (from jobs of the digital transition to the **digital transition of jobs**)?
- What are the effects of digital dynamics on skills in major **labour-intensive industries with a majority of low-skilled jobs**?
  - **Qualitative analysis (field research)** in two sector (potentially promising):
    - ✓ **Industrial Digitalisation** and Artificial Intelligence (DIIA)
    - ✓ **Mobility and Intelligent Transport networks**

Céreq expertise on the conditions of company-based acquisition and development of skills

- Focus on **companies' training practices** (training methods and objectives, etc.) as a function of the level of integration of digital technologies (Internet of Things, Big Data, AI, etc.).
- **How companies are adapting to new skills requirements** (their training policy, the choice of recruitment or in-house training, etc.) in relation to the types of skills likely to become increasingly important in the future and the technologies used.
  - **Quantitative survey, datasets matching (INSEE ICT survey (INSEE) / Céreq's in-company training Survey)**