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# Industry 4.0 and Labour Law: the new challenges

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5th June 2018

# Structure of the lecture

- How Industry 4.0
- affects Labour Law  
(Francesca Marinelli)

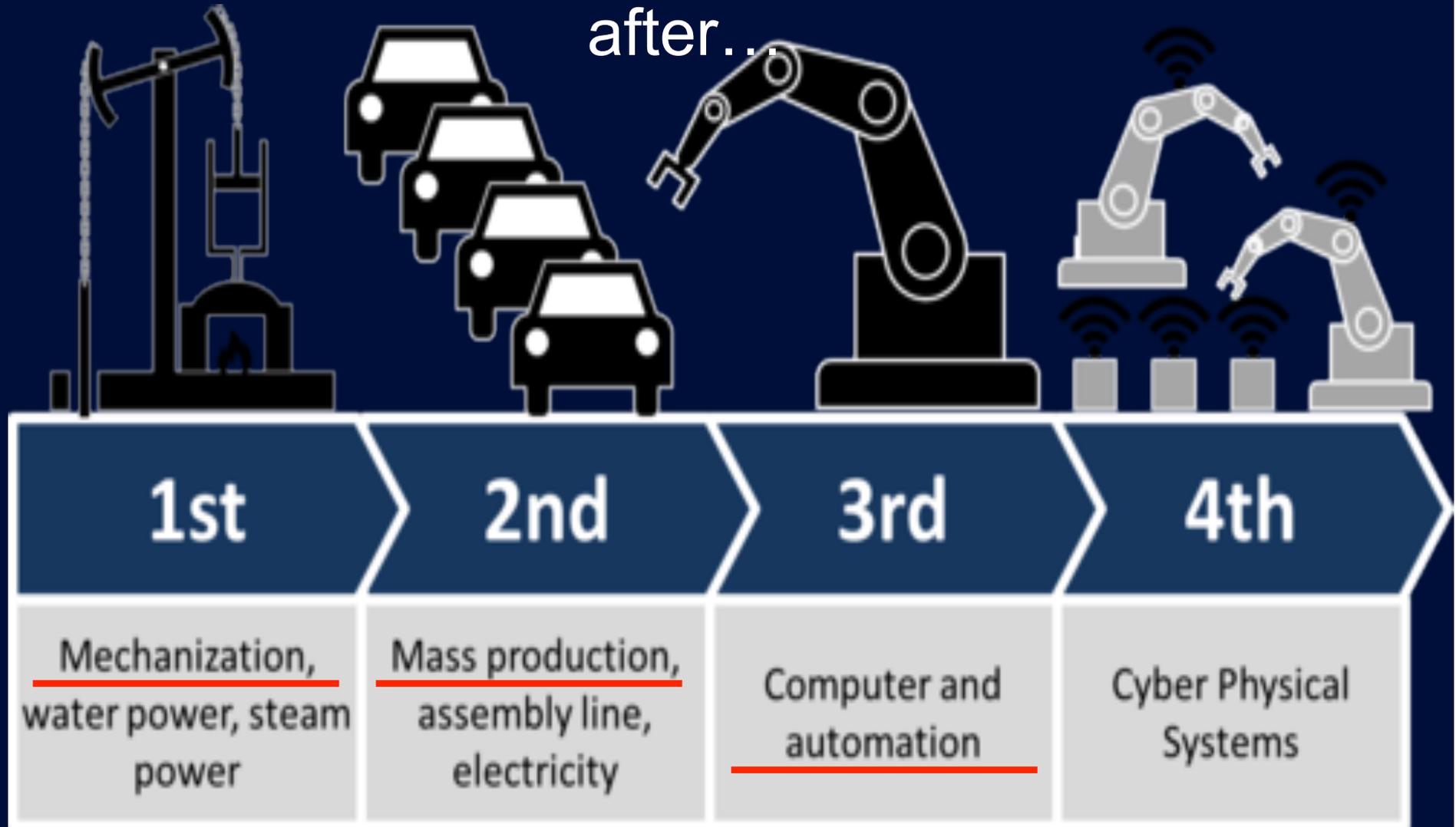
- Focus on the  
Italian Labour  
Law  
(Maria Teresa Carinci)



What is Industry 4.0?

# Industry 4.0

is commonly referred to  
as the fourth industrial revolution  
after...



**Industry 4.0**  
is the name for the current  
trend of



using  
communication technologies  
for production

What does it mean?

# Factories AFTER

Mechanization

&

Automation



## ■ Smart factory



use **cyber-physical systems**  
mechanisms that are controlled or  
monitored  
by computer-based algorithms,  
tightly integrated with the Internet and its  
users



This trend is affecting not only the **manufacturing** but also the **provision of services**



How is Industry 4.0  
affecting  
labour law?

## ■ Industry 4.0



- 1 Rethinking of professions
- 2 Rethinking of the independent contractors relationship
- 3 Rethinking of the employment relationship
- 4 Rethinking of the work-life balance

## ■ Industry 4.0



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# Rethinking of professions



Examples?



In 1998

Kodak had **170,000 employees** and sold 85% of all photo paper worldwide.

Within just a few years, their business model disappeared and they **went bankrupt**.

What happened to Kodak will happen in a lot of industries in the next 10 years



In the US young lawyers already don't get jobs  
because of IBM Watson  
which is a **computer system**  
**capable of answering questions posed**  
**in natural language**

That can get legal advice within seconds,  
with 90% accuracy compared with 70% accuracy  
when done by humans



What you're going to see for a lot of jobs is a churn of different tasks.

A lawyer today doesn't develop systems that offer advice, but the lawyer of 2025 will.

They'll still be called lawyers but they'll be doing different things.



## Rethinking of the skills

As Stanford University academic Jerry Kaplan writes:

today, **automation is blind to the color of your collar.** It doesn't matter whether you're a factory worker, a financial advisor or a professional flute-player: **automation is coming.**

What is the risk?

UNEEMPLOYMENT  
RATE

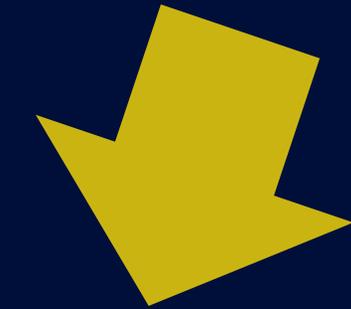


In fact if it is true that the jobs themselves won't  
entirely vanish  
rather, they will be redefined

from the perspective of the worker  
there is not much of a difference between  
work disappearing and being radically redefined.

It's likely they'll lack the new skillsets required for  
the role and be out of a job anyway.

# digitisation in the labour market could create a wall between



high-paying jobs  
for highly-skilled workers with  
high levels of autonomy  
and flexibility



precarious jobs  
for low-skilled workers  
with neither autonomy  
nor flexibility



# Gig economy



is a labour market that is distinguished by the prevalence of short-term contracts or freelance work rather than permanent jobs

How can we face the  
problem?

# lifelong learning



Europe 2020 strategy, devotes a section to lifelong learning, stating that access to this should be improved in order to help people to move to high value-added sectors.

It also states that learning pathways should be made more flexible to make transitions between phases of work and learning easier.

Specific focus should be placed on vulnerable groups, such as older and younger workers, returning parents, low-skilled workers, and blue-collar workers who are re-skilling, for example, to become green-collar workers employed in the environmental sector.

## ■ Industry 4.0



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# Rethinking of the independent contractors relationship



Examples?

## «DIGITAL WORK»

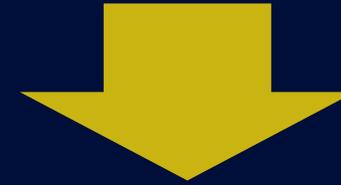


### WORK ON DEMAND VIA APP

*Mobile* workforce  
(tasks to be performed in the  
physical world)



It pairs consumers with  
workers to provide a  
service



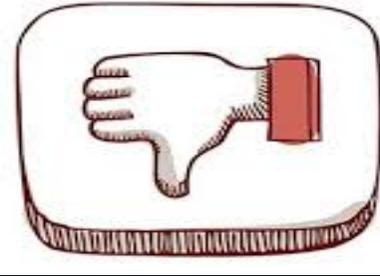
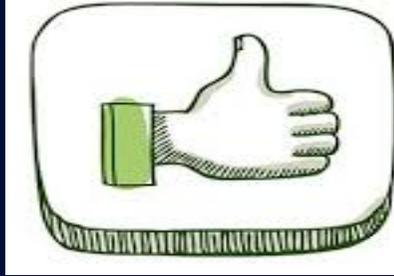
### CROWDWORK

*Virtual* workforce  
(tasks to be performed online)



Companies offer work via internet-based platforms (crowdsourcing). These jobs can be taken on by workers who are registered with the platforms (the crowdworkers). The work may be in the form of microtasks such as text production or data entry, but it could also be more demanding macrotasks, such as programming.

What are the risks?



- Flexibility

- Opportunity for non-skilled workers

- Homeworking

- *Gigs* for students

- Benefits for consumers

- Occupational instability

- Risk of self-exploitation

- Risk of child labour exploitation

- Commodification of labour

How can we face the  
problem?



the European Commission:

- has adopted a proposal for a Recommendation on access to social protection for workers and the self-employed to support people in non-standard forms of employment and self-employment who, due to their employment status, are not sufficiently covered by social security schemes and thus are exposed to higher economic uncertainty
- has adopted a proposal for a Directive on transparent and predictable working conditions in the European Union

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# Rethinking of the employment relationship



Examples?

# Rethinking of...



unionism



wage

■ Industry 4.0



Power of control



the workplace

# Rethinking of...



unionism



wage

■ Industry 4.0



Power of control



the workplace

How can  
industry 4.0  
affect  
unionism?



The Unions should struggle with:

- the expected reduction of the permanent workforce replaced by temporary workers
- the need of new model of organization (Unions may organise workers online and through networks using the same technology that capital has been using)

# Rethinking of...



Trade  
unionshp



wage



Power of control



the workplace

How can  
industry 4.0  
affect wage?



A lot of workers instead of regular salaries  
could be paid in return for the "gigs" they  
perform.

How can we protect them?

(Minimum salary)

# Rethinking of...



Trade  
unionshp



wage



Power of control



the workplace

How can  
industry 4.0  
affect the power  
of control?



**technologies in the  
workplace could  
imply a potential  
control of the  
employees 24/7**

# Rethinking of...



Trade  
unionshp



wage



Power of control



the workplace

How can  
industry 4.0  
affect  
the workplace?



# Smart working

is a natural evolution of teleworking, which has added, through the uses of technologies, greater mobility and versatility to the features of the “traditional” distance work.

If teleworking used to move the work from the office to the home, smart working takes it to almost any other place, from a park or a coffee shop to the waiting room of an airport

## ■ Industry 4.0



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# Rethinking of work life balance

WORK



LIFE

Examples?

The technology affects how the workers performe



What are the risks?

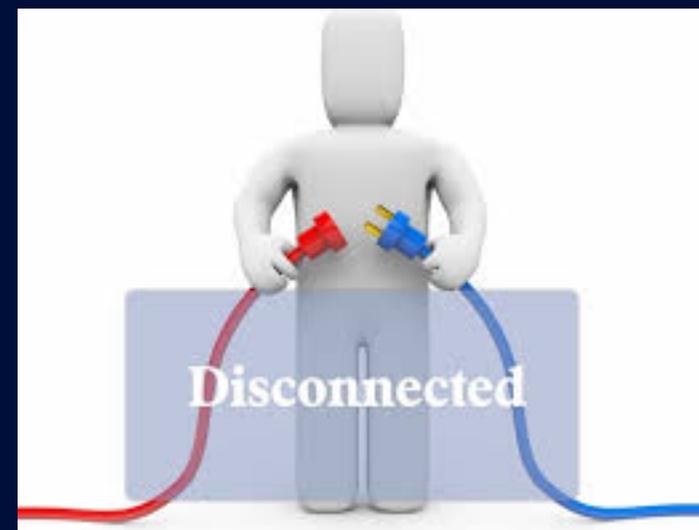


How can we face the  
problem?



## European Parliament resolution of 13 September 2016 on creating labour market conditions favourable for work-life balance

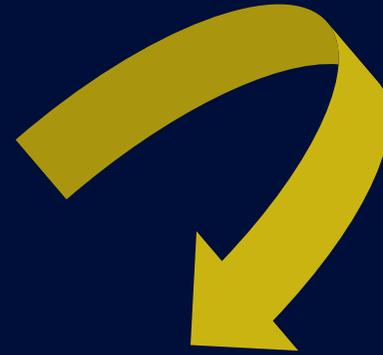
- reconciliation of professional, private and family life needs to be guaranteed as fundamental right for all people
- Rejection of the culture of permanent availability



TO SUM UP...



Every time the economic system changes



The law has to follow



Labour law is not an exception!





# Rethinking of labour law