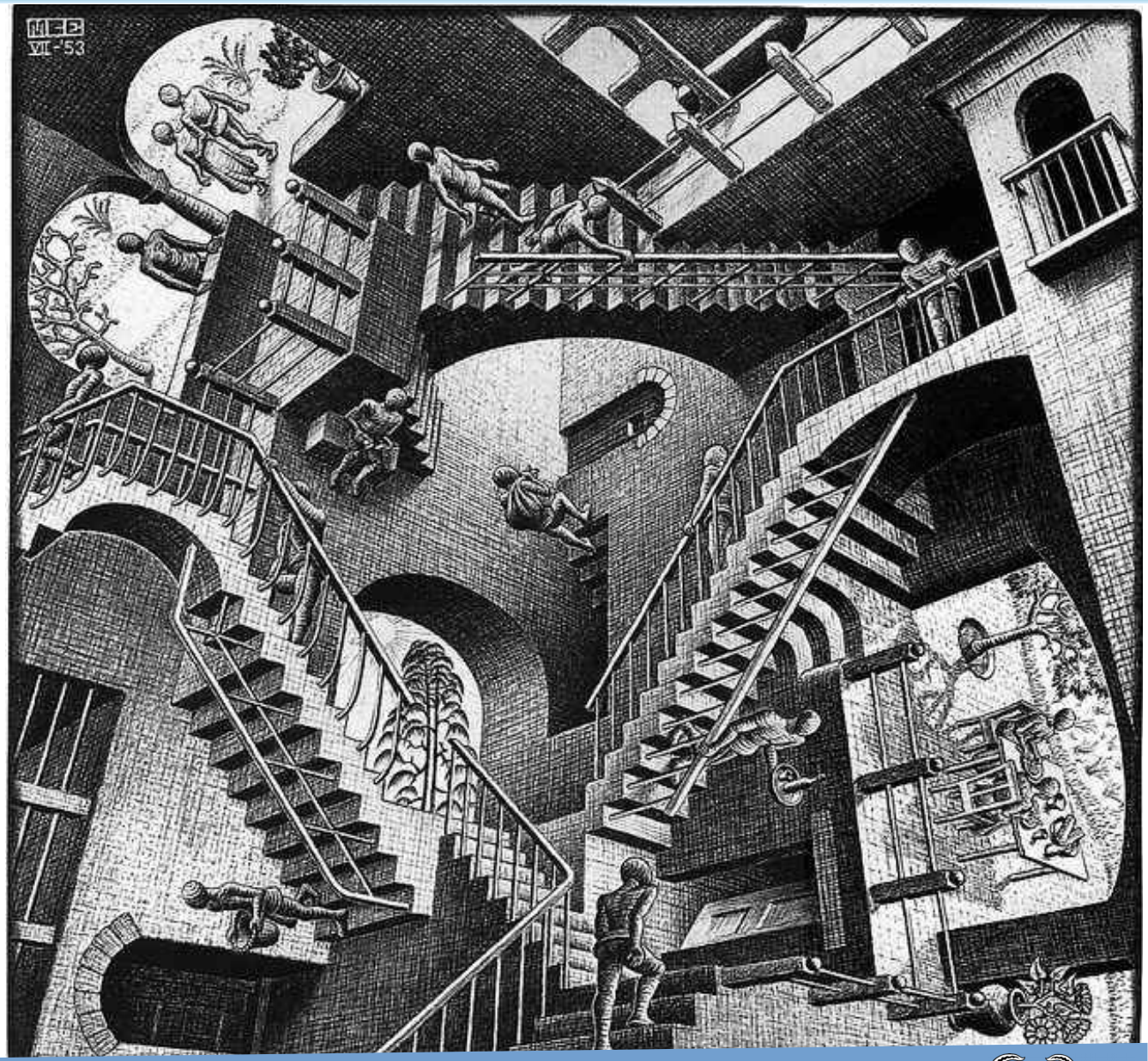
Sociologia dell' Organizzazione

2021–22 II Semestre



L12 - Opzione 4 - IV Rivoluzione industriale e processi organizzativi: le implicazioni politiche, socio-economiche e ambientali della seconda era delle macchine

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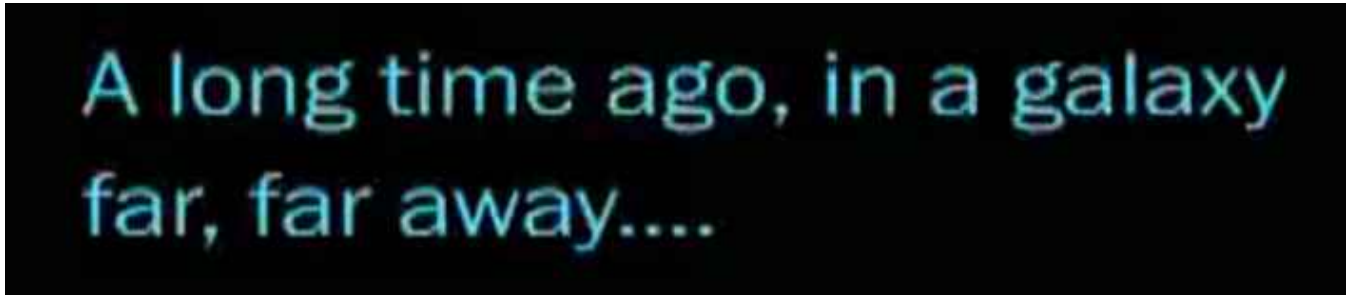
Programma opzione 4

Opzione 4. PERCORSO TEMATICO: *IV Rivoluzione industriale e processi organizzativi: le implicazioni politiche, socio-economiche e ambientali della seconda era delle macchine*

- P. Rossi, *L'innovazione organizzativa. Forme, contesti e implicazioni sociali*, Roma, Carocci, 2018. Solo Cap V: "L'innovazione dei processi di lavoro"
- A. Foryciarz, D. Leufer, K. Szymielewicz, *Black-Boxed Politics: Opacity is a Choice in AI Systems*, Medium, 2019. https://medium.com/@szymielewicz/black-boxed-politics-cebc0d5a54ad
- P. Fleming, *Robots and Organization Studies: Why Robots Might Not Want to Steal Your Job*, Organization Studies, 2019, Vol. 40(1), pp. 23–37. https://journals.sagepub.com/doi/10.1177/0170840618765568
- F. Butera, *Lavoro e organizzazione nella quarta rivoluzione industriale: la nuova progettazione socio-tecnica*, L'industria / n.s., a. XXXVIII, n. 3, luglio-settembre 2017, pp. 291-316. https://www.rivisteweb.it/doi/10.1430/88846
- A.M. Braccini, E.G. Margherita, *Exploring Organizational Sustainability of Industry 4.0 under the Triple Bottom Line: The Case of a Manufacturing Company*, Sustainability 2019, 11, 36, pp. 1-17. https://doi.org/10.3390/su11010036
- S. Pollard, A. Turney, F. Charnley, K. Webster, *The circular economy – a reappraisal of the 'stuff' we love*, Geography, Vol 101, Part 1, Spring 2016, https://doi.org/10.1080/00167487.2016.12093979

A technological revolution?

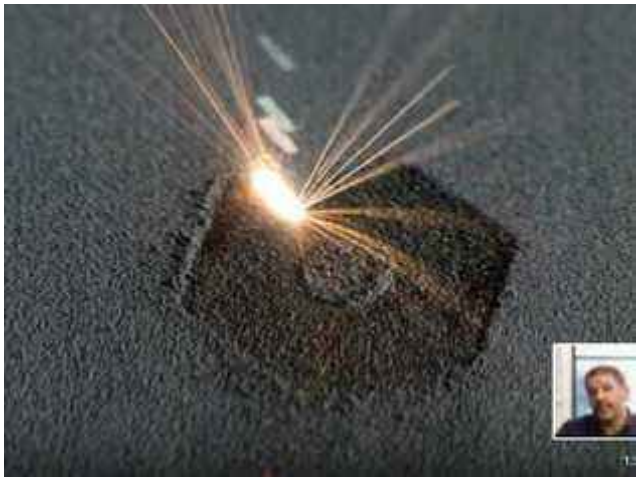


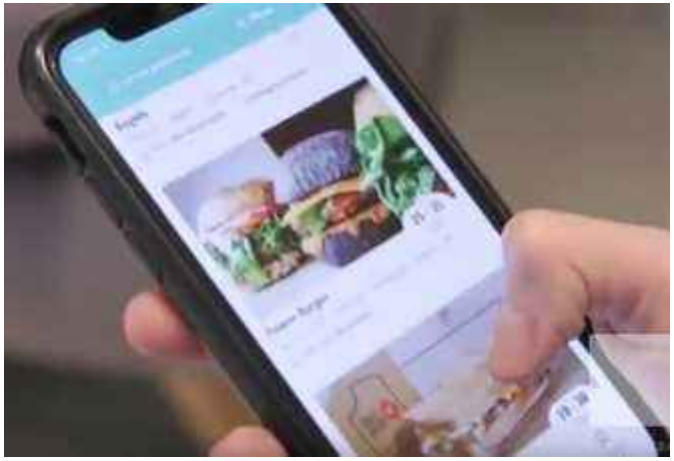
Ma questo è davvero tanto lontano?

Just few years ago ….

We were discussing the end of work and many other dreams / nightmares …

Work places … with / without / with less / with different workers





Self-driving trains, cars, aeroplanes and amenities ...

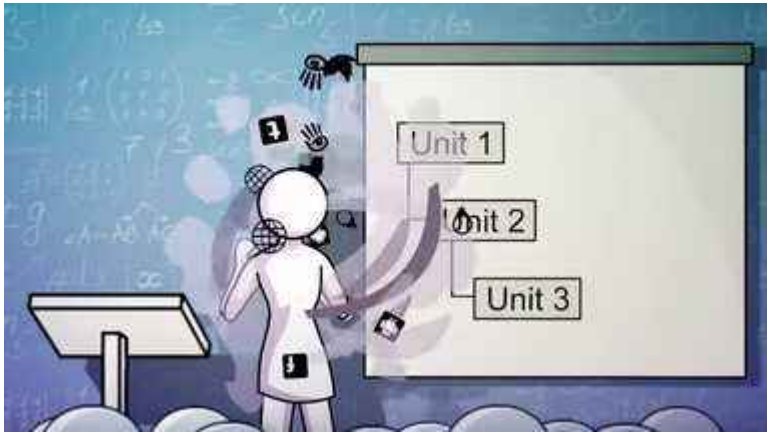
Retirement homes

Health care, smart home and other issues

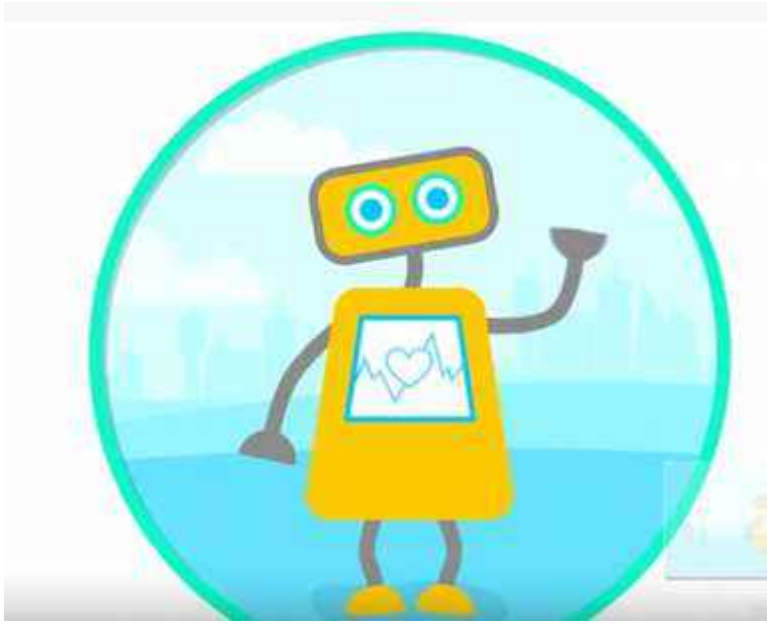
Legal, financial , computer services and management …

And .. MOOC

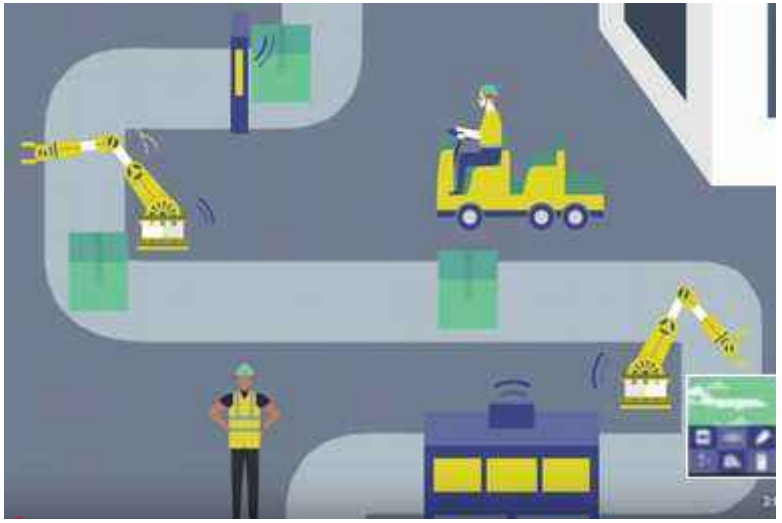
“Massive, open online courses”



Virtual psychiatrist, psychologist and doctors?



Internet of things



Social and political issues …

E-commerce, control and privacy, killer-robots, …

So,

What kind of revolution is this????

And which social, economic, political and environmental-ecological impact?

P. Rossi, L’innovazione organizzativa. Forme, contesti e implicazioni sociali, Roma, Carocci, 2018. Solo Cap V: “L’innovazione dei processi di lavoro”

Tema: innovazione organizzativa, lavoro e innovazione tecnologica

Il testo introduce questa opzione, collegandosi al nostro programma

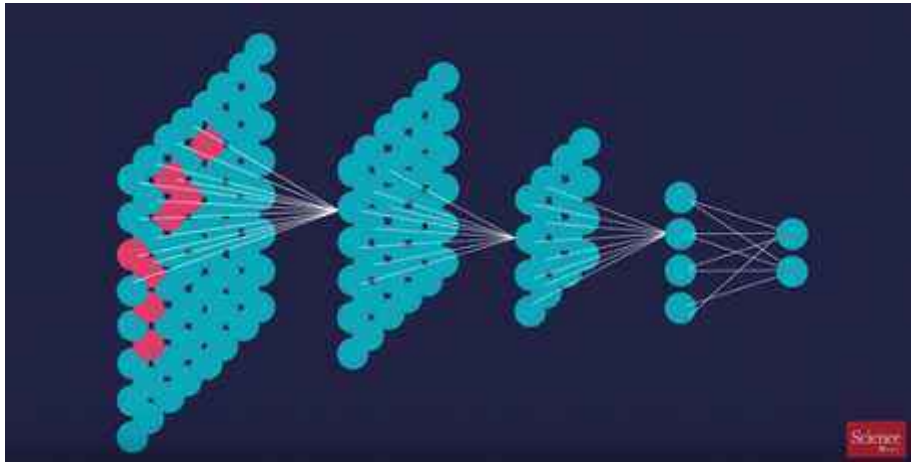
- Innovazione di processo e di prodotto
- Le innovazioni proprie del taylorismo, fordismo e post-fordismo
- Automazione dei processi: smart e mass automation, flessibilità e efficienza, produzione e servizi
- Digitalizzazione dei processi di lavoro: industria 4.0, produzione e servizi

A. Foryciarz, D. Leufer, K. Szymielewicz, Black-Boxed Politics: Opacity is a Choice in AI Systems, Medium, 2019. https://medium.com/@szymielewicz/black-boxed-politics-cebc0d5a54ad

Tema: black-boxes nei sistemi di AI sono necessari/ineluttabili?

No, l'idea che i sistemi di intelligenza artificiale siano troppo complessi per esserne spiegata la logica interna è falsa.

- In primo luogo chiarire di cosa si sta parlando
- Esempi di opacità che sono … scelte politiche
- Necessità e possibilità della spiegazione oltre il presunto limite della competenza delle persone
- Fare chiarezza su obiettivi, valori, metodi, risultati, monitoraggio e valutazione delle conseguenze
- Processi decisionali: tecnico è politico



Robots and Organization Studies: Why Robots Might Not Want to Steal Your Job

P. Fleming, Robots and Organization Studies: Why Robots Might Not Want to Steal Your Job, Organization Studies, 2019, Vol. 40(1), pp. 23–37. https://journals.sagepub.com/doi/10.1177/0170840618765568

Topic: studies about Robotics and artificial intelligence and the loss of many jobs due to automation... with few new ones replacing them.

But, moving over the polarization optimistic/pessimistic:

- Despite waves of computerization (including advanced machine learning), jobs have not disappeared…. And probably won't in the near future.
- Insights from organization studies can make a contribution
- Concept of 'bounded automation' to show how organizational forces mould the application of technology in the employment sector
- Need to put attention on
  - Socio-cultural-political reasons and implication of IT and AI applications and lack of
  - socio-economic dynamics (capitalism, noliberalism),
  - poorly paid jobs which will most certainly proliferate
  - wider social justice issues

Lavoro e organizzazione nella quarta rivoluzione industriale: la nuova progettazione socio-tecnica

F. Butera, Lavoro e organizzazione nella quarta rivoluzione industriale: la nuova progettazione socio-tecnica, L'industria / n.s., a. XXXVIII, n. 3, luglio-settembre 2017, pp. 291-316.
https://www.rivisteweb.it/doi/10.1430/88846

Tema: il ruolo dei processi organizzativi nella IV rivoluzione industriale

Il testo supera la dicotomia pessimismo/ottimismo mettendo in discussione – come altri testi di questa opzione – il determinismo tecnologico di tali letture:

- Discute la nuova progettazione integrata di tecnologia, organizzazione, lavoro e sviluppo di persone
- Se le nuove tecnologie possono sconvolgere le situazioni attuali, solo la progettazione configurerà città, aziende, organizzazioni, e qualità e quantità di lavoro.
- Inoltre discute il ruolo e le potenzialità di:
  - Politiche industriali pubbliche e private
  - Progetti esemplari: nuovi sistemi socio-tecnici che ottimizzano dimensioni economiche, sostenibilità e qualità della vita lavorativa;
  - Metodologie partecipative di progettazione e realizzazione di sistemi complessi.

A.M. Braccini, E.G. Margherita, Exploring Organizational Sustainability of Industry 4.0 under the Triple Bottom Line: The Case of a Manufacturing Company, Sustainability 2019, 11, 36, pp. 1-17. https://doi.org/10.3390/su11010036

Topic: Industry 4.0 (I40) promises to afford organizations to act sustainably...

However, few empirical research targeted the impact of I40 on the *social*, *economic*, *and environmental dimensions of sustainability*.

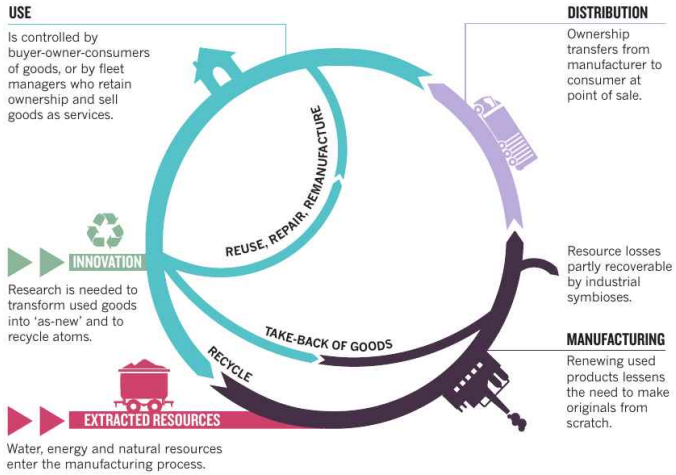
This investigation:

- analyzes the adoption of I40 in a manufacturing company
- discusses concepts and aspects of Sustainability, I40, their combination
- State of the art and gap in this research
- The impact of I40 innovations on the *triple bottom line* in the analyzed company
- The need for more research

Topic: the potential role of Circular Economy (CE) in the transition towards a really strongly reduced carbon- and material-footprint?

The principle (Korhonen *et al.* 2018): a kind of functional and **adaptive reciprocity** between economic and natural cycles:

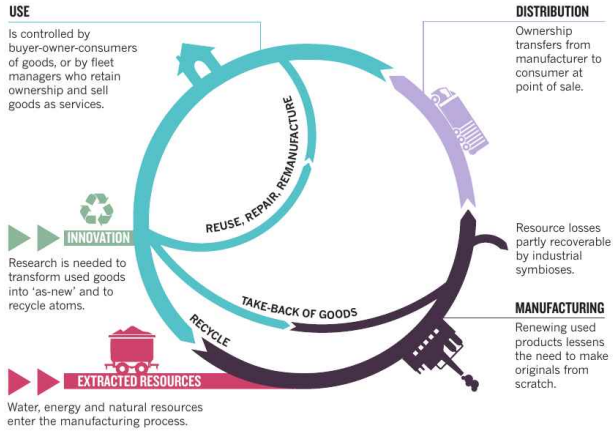
- **CE should utilize nature's cycles** for preserving materials, energy and nutrients for economic use
- **The material flows** released from economy to nature should be in a form in which nature can utilize them in its own functions.
- **CE should not be a process peculiar to some productive sectors** but should take the form of a kind of inter-organizational and network environmental and sustainability management, involving a cultural change in the way corporations act, are organized and interact with the organizational environment, as well as in the way consumption occurs, in an attempt "to reduce the nature-society-nature linear throughput flow of materials and energy".



How circular may be the circular economy?

6 main limits to the application of CE principles in production-consumption processes:

1. **Principles of thermodynamics** (second law): complete recycling, reuse, remanufacturing and refurbishment is impossible due to unsustainable levels of resource depletion, energy in particular
2. **Spatial and temporal dimensions** of any recycling, reuse, remanufacturing and refurbishment processes, considering the global-complex production, trade, waste chains powered by fossil fuels.
3. **Limits posed by physical economic growth**. Eg.: Rebound Effect (greater productive efficiency easily leads to increase in productivity > physical growth of economy); E.g. better environmental laws risk displacing impactful production in poorer countries. A problem: economy measured in abstract exchange value does not account for its physical size (difficult decoupling)
4. **Path dependency and technological lock-in**: in many cases to survive are not necessarily the fittest but the first (Granovetter 2017).
5. **Relationships between intra- and inter-organizational dimensions**, involve skills, competencies and cultures of workers, managers and technicians (HR), and networks.
6. **Categories** (recycling, reuse, remanufacturing, refurbishment, waste, side-product) not necessarily found/used in administrative systems globally and differently interpreted based on cultures, societies, communities, histories, types of economies (e.g. waste, Eriksen 2016).



How circular may be the circular economy?

S. Pollard, A. Turney, F. Charnley, K. Webster, The circular economy – a reappraisal of the 'stuff' we love, Geography, Vol 101, Part 1, Spring 2016, https://doi.org/10.1080/00167487.2016.12093979

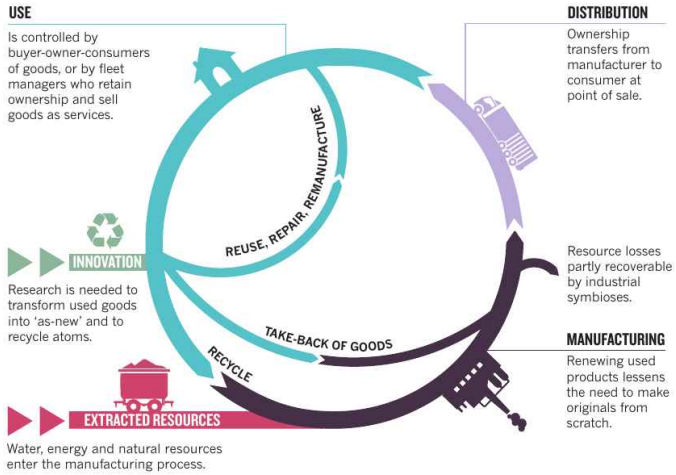
Topic: does the 4th industrial revolution may help the transition towards a strongly reduced carbon- and material foot-print?

The essay sounds **a cautious note** about the many challenges ahead of making economy circular

"What is missing": ability to include CE processes in the geographies and operating principles of the system-earth and social systems: concepts of feedback, synergy, complexity and system metabolism

These are indispensable for analyzing "the interconnectedness of what is being termed the energy-water-food nexus", the manufacturing systems, beyond mechanistic reductive models.

Following this systemic approach, fragility of these global-local chains can be better understood and differently organized on the basis of the combined principles of **scarcity, security and efficiency,** instead of pursuing the latter as the only guiding criterion



Utopie e/o realtà, ma quali?

Comunque vada... non sarà la tecnologia a deciderlo...