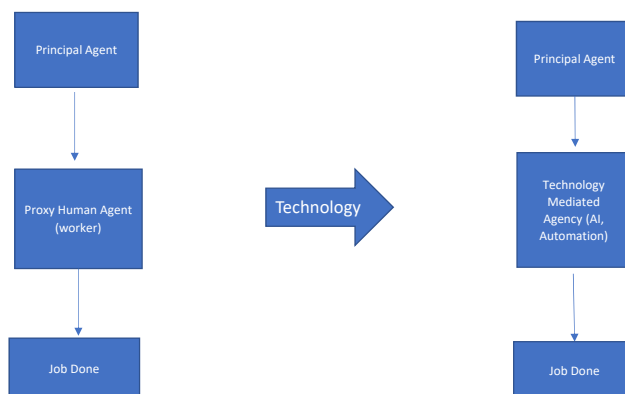


By Sami Mahroum, Solvay Brussels  
School of Economics and Management

# Principal- Agents Frameworks

Future Scenarios

**What happens when we introduce a new technology into a productive activity?**



### **What happens when a taxi driver's job is automated?**

- Driver loses his job but not his agency.
- The principal agent here is the passenger, not the driver and not Uber.
- The driver is what we would call 'proxy agent' executing the wish and desire of the principal agent- the passenger.
- The interest of the principal agent and the proxy agent are not aligned.

### **What happens when a farmer is replaced by a robot?**

- The farmer does not lose his job but rather enhances his agency.
- The principal agent here is the farmer and the robot extends and enlarges his agency.
- What about seasonal workers on the farm?
- They tend to be hard to recruit and train every year as they view work on farm as a necessary evil.
- In the long run the interests of the principal farmer and the temporary farmer are aligned.

### **What happens when a robot is introduced into an assembly line?**

- It depends on the socio-political context?
  - When the Employer's interest is to be aligned with the political order (e.g., receiving subsidy or bailout), robots are introduced to assist workers.
  - When the Employer's interest is not aligned with the political order, robots are introduced to replace workers.

### **What happens when robots are introduced in surgery theaters or in personal services?**

- It depends on cultural preferences.
  - When principal's interest are aligned with cultural (consumer) preferences, robots are introduced to enhance the quality of service, reduce the cost of service.
  - When principal's interest are NOT aligned with cultural (consumer) preferences, robots are not introduced to enhance the quality nor reduce the cost of service.

## Scenarios of Principal-Agent Dynamics

Principal's Interests	Economic Agency (profits, revenues, etc)	Non-Economic Agency (social, political, environmental)
Aligned with Agents	Technology Assists Human	Technology Assists Human
Not Aligned with Agents	Technology Replaces Human	Technology Replaces Human

## Technology & Human Agency: Four Main Roles

Eliminates Human Agency



Expands Human Agency



Enlarges Human Agency



Sustains Human Agency



Why		What	How
Principal-Agent Context		Automation Role	Enhancement Mode
Economic (profits, revenues)	Aligned		
	Not Aligned		
Non-Economic (e.g. political, social, common good)	Aligned		
	Not Aligned		

These are unvetted scenarios which can be tested by further research allowing us to make powerful predictions on mode and scale of automation in society.

---

Thank you

Sami.mahroum@solvay.edu

