



# ROBOTS IN HEALTHCARE



– AN ECONOMY PERSPECTIVE

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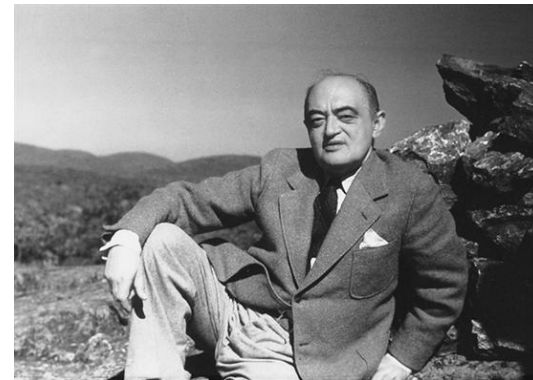
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# INNOVATIONS IN GENERAL ARE CONSIDERED TO CONTRIBUTE TO ECONOMIC GROWTH AND TO STRUCTURAL CHANGES

Schumpeter coined the notion of “**creative destruction**”, highlighting that there are winners and losers in innovation processes.

What matters for society is, whether there is more creation than destruction.

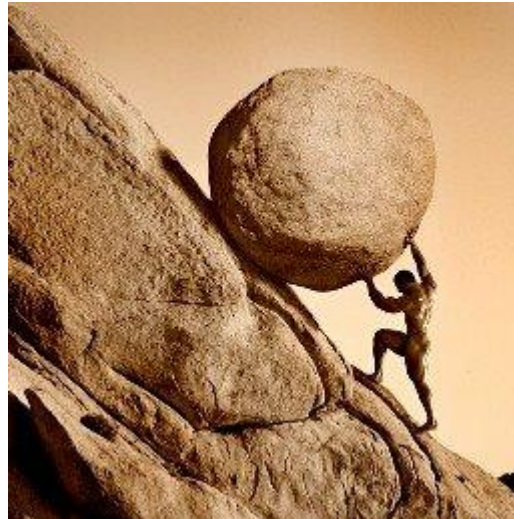
What can be said about the potential introduction of healthcare robots in this respect?



# INNOVATION IN MEDICINE AND IN HEALTHCARE

High (and perhaps still growing) life expectations are considered to be responsible for the so-called Sisyphos-Effect:

Every innovative success leads to growing health costs for the society.



# DEMOGRAPHIC CHANGES WILL ADDITIONALLY AGGRAVATE THE INCREASING COSTS

Are there positive effects to be expected from the application of healthcare robots?

Or is it just another driver of the cost explosion?

Several dynamics triggered by healthcare robots are to be considered:

Supply side and demand side effects

Quantitative vs. qualitative developments



# SUPPLY SIDE EFFECTS



Developing healthcare robots will support the emergence of a new, potentially very powerful sector, which will develop anyway (with and without an European participation).

Replacement of existing industries can almost be excluded – due the so far high service intensity the healthcare sector is not capital intensive.



# COST REDUCTION?

Cost reduction can be expected only if the people employed by the healthcare sector are replaced by the robots and the quantitative effect dominates (i.e. the robots are cheaper than the personnel in the health care sector).

# QUANTITATIVE VS. QUALITATIVE EFFECTS – DEMAND SIDE EFFECTS

Healthcare robots are likely to improve the quality of services if they are complemented by human services for the patient.

[If this is not considered, healthcare robots might lead to an intensification of the inequality problems in society.]

However, if the healthcare personnel (as well as family members) are relieved from heavy work, the time dedicated for healthcare can be used for more meaningful activities with the patient.

# SKILL SHORTAGES IN WESTERN SOCIETIES

Growing demand for healthcare services in aging societies meets an increasing shortage of skilled labor.

Innovative solutions are required to avoid undersupply.

