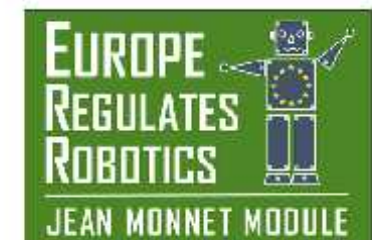




Liability and Risk Management in Robotics

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Outline

- 1. A functional approach to the regulation of robotics**
- 2. Robots are products. Are European product liability rules adequate?**
- 3. From liability assessment to risk management**



1. What robots are and how they shall be defined

- There is not one all-encompassing definition of «robot»
- There are instead different classes of applications



1. To regulate robotics we need a case-by-case approach

- Differences in classes of applications are more relevant than similarities**
- Focus on the problems that emerge when we apply existing rules**
- The same (legal) problem may require different technical solutions**



1. Liability Rules and the Development of a European Robotic Industry

- Who pays for damages when something goes wrong?
- Liability rules determine incentives to the development of new products
- Ex ante certainty is necessary



2. Robots are Products

When damage arises from the use of a robot a human being is going to be held liable:

- 1. The User/Owner, or**
- 2. The Producer**



2. Product Liability Rules

Directive 85/374/EEC

- **The producer is liable for all damages resulting from the use of his products**
 - 1. Production defect**
 - 2. Warning defect**
 - 3. Design defect**



2. The Purpose of Product Liability Rules

The purpose of the rules is twofold

- 1. Incentivize safe design**
- 2. Provide prompt compensation to the victim (no need to prove fault)**



2. The Application of the Dir. 85/374: is it Effective?

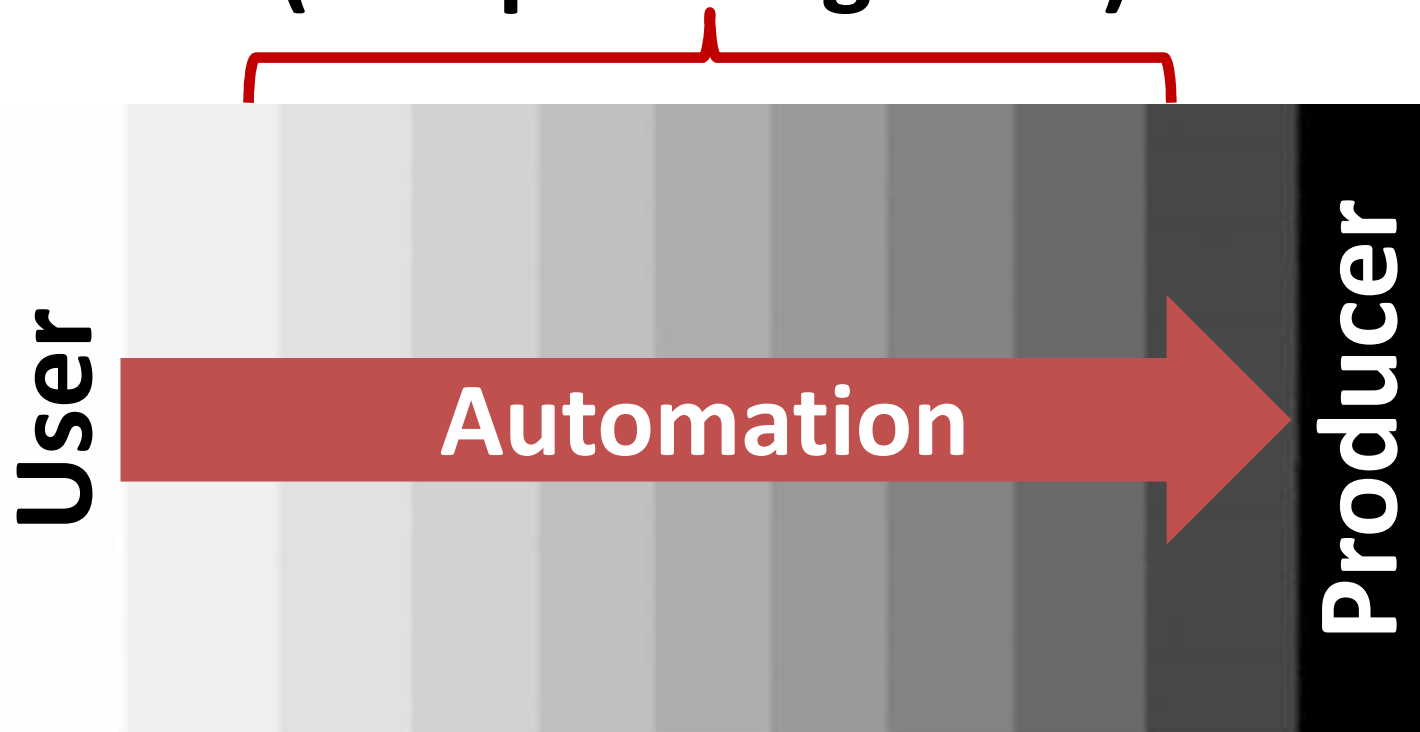
**There are preliminary grounds to doubt
the effectiveness of EU Product Liability
Rules:**

- 1. Very little litigation compared to USA**
- 2. Claimants are rarely successful**
- 3. Litigation is complex and expensive
(causal nexus)**



2. Is it a problem for robotics? Yes

**Uncertainty
(complex litigation)**



2. The Shift towards Product Liability Rules due to Robotics

Fields that are today regulated by other liability rules will shift towards product liability rules because of the diffusion of robotic devices

- 1. Medical malpractice (because of AI and expert systems)**
- 2. Traffic accidents (driverless vehicles)**



3. From Liability to Risk Management

Separate the issue of safety from that of compensation

- 1. Foster technological standardization**
- 2. Allocate liability to the party best placed to minimize costs**
- 3. Robot testing in real-life scenarios**



3. Technological Standardization

All major World economies will race to identify technical standards

- 1. Develop EU standards in robotics**
- 2. Narrow-tailored technological standards, frequently updated, for specific kinds of applications**
- 3. European Robotic Agency**



3. Allocate liability to the party best placed to minimize costs

Clear-cut liability rules make the «risk» foreseeable, manageable and insurable

- 1. Absolute liability either on the user or producer (no defence)**
- 2. Compulsory insurance schemes**
- 3. Price mechanisms to distribute cost**



3. Uniform Framework for Robot Testing in Real-Life Scenarios

Robot-testing in real life scenarios is key to define the material consequences of the use of a device

- 1. Japan is regulating it through Tokku Special Zones**
- 2. Uniform regulation at EU level with objective criteria for testing is needed**



Thank You!

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