

# *Robotics, Artificial Intelligence, and Machine to Machine (M2M) Contracts*

**with a particular focus on consumer contracts**

### Scenario No 1:

Carol browses the pages of Bill's online shop. When she notices that her favourite champagne is offered at a very good price she **fills in the electronic form and places an order** (12 bottles) by electronic means. Her order is received by Bill's **automated order processing system**, which checks whether the bottles are still on stock, sends a confirmation to Carol's email address, and takes care of picking, sorting and labelling.



This is not an M2M contract because the crucial step (= placing of the order) is triggered by direct human intervention (= Carol clicking on the order button)

## Scenario No 2:

Carol is a nerd. She programmes her computer so as to monitor prices in Bill's online shop. Once the price for her favourite champagne falls below a specified limit her **computer automatically dispatches the order** (12 bottles) by electronic means. Her order is received by Bill's **automated order processing system** (see scenario no. 1).



This is a very simple M2M contract because the crucial step is not directly triggered by human intervention, but only indirectly through the programming of an algorithm. The impulse to place an order was given by a machine after carrying through a very simple 'sense—plan—act' (SPA) exercise.

### Scenario No 3:

Carol has bought a smart fridge, sold by Sally and produced by Paul, which automatically tracks the inventory and does online grocery shopping according to **specifications which Carol has been prompted to define**. When Carol's stock of champagne falls below a specified minimum the inbuilt **shopping software agent** automatically searches for offers on the Internet, compares prices, and orders 12 new bottles. An order is thus received by Bill's **order processing system**.

This is a standard case of an M2M contract.



It involves at least three parties: the owner of the machine (C), the producer/programmer of the machine (P), and the contracting third party (B) (plus any seller S, intermediary, producer of further machines, etc.).

There may be a framework contract between C and B, or framework contracts between each C and B and an intermediary (e.g. platform operator)

# Is this dealt with by existing EU law?

- **E-Commerce Directive (ECD)**
  - Pre-contractual information would have to be given to a machine
  - The same holds true for other protection (e.g. correction of input errors)
- **Consumer Rights Directive (CRD)**
  - Pre-contractual information would have to be given to a machine
  - The same holds true for other interactions foreseen by the CRD (e.g. request for immediate performance, confirmations, button labelling, possibly even the decision about whether to withdraw)
- **Unfair Contract Terms Directive (UCTD)**
  - Does not contain rules about how terms become part of the contract
  - Whether or not agreement is reached is a matter of Member States' law

# Is this dealt with by existing EU law?

- **Product Liability Directive (PLD)**
  - Does not cover pure economic loss (e.g. machine places unnecessary orders)
- **Consumer Sales Directive (CSD)**
  - Remedies dependent on various factors, e.g. whether it was the user who made a mistake in programming the device, guarantee/prescription periods, burden of proof
  - Leaves a right to damages to the law of the Member States (may require, e.g., fault)
- **Draft Directive on contracts for the supply of digital content (DCD)**
  - Does not cover most software that is embedded in tangible goods
  - Covers supply of isolated software agents, but conformity test fixated on the supplier's terms and conditions, therefore usually no liability



In M2M contracts, the usual safeguards to ensure autonomous decision making (such as pre-contractual information, means to correct input errors, or advance disclosure of terms) may have limited or no effect.



The owner makes autonomous contractual decisions only at earlier points in time, e.g. when entering into a framework contract, either directly with the contracting party or with an intermediary.



There is often no liability of sellers or producers if something goes wrong, e.g. a smart fridge orders too much food, or a smartphone solicits particular online services while the owner is abroad.

#### Scenario No 4:

Carol has bought a very advanced smart fridge, sold by Sally and produced by Paul. Sensors are scanning the environment; the machine learns from experience. It communicates with, and learns from, other devices, such as the smart larder, the smart bathroom scales, and Carol's electronic diary. After six months, the fridge **knows everything about Carol's habits and preferences** and **autonomously takes over grocery shopping**, taking into account a broad variety of factors, including pre-contractual information and standard terms of suppliers. For New Year's Eve, it automatically orders 12 bottles of champagne at Bill's online shop.



This is an M2M contract involving advanced artificial intelligence.

The persons involved are the same as in scenario no. 3, but they have even less control over what the fridge eventually does.





Advanced artificial intelligence may mean that M2M contracting can take place on a larger scale and be no longer restricted mainly to transactions within framework contracts or systems managed by intermediaries.



However, existing problems of liability and risk management are still aggravated, and new regulatory models (e.g. strict liability, compulsory insurance) will have to be discussed.

- The significance of M2M contracting is growing fast. There are various models:
  - Transactions within a framework contract (e.g. between the owner of a smart fridge and a particular grocery chain)
  - Transactions within schemes set up by intermediaries/platform operators (e.g. the smart fridge compares offers from various grocery chains that are participating in a particular platform scheme)
  - Stand-alone transactions (e.g. the very smart fridge shops online just as if it were a human agent)
- There may be a need for further regulation ensuring fair distribution of risks, adequate information, protection in cases of dynamic pricing etc for M2M transactions within framework contracts and intermediary/platform schemes
- Existing rules of liability for damage caused to the owner of the machine or to third parties in the context of M2M contracting may have to be reconsidered.