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Dromedaries of the future

by Ing. Roberto E. Nenzi

Centuries ago, transport of goods was based on animals (dromedaries, camels, donkeys, at al.), on ships (sailing ships, rowing ships, et al.) and through economic transactions (on many itineraries there were letters of credit, not coins), but it had one peculiar aspect: each transport was performed on short distances (a few hundred kilometres).

After that a change in means of transport/caravan/ship (maybe also merchant) was made. It has also been easily forgotten that goods had to pass through custom officers at every new of kingdom/province/state.

Today we have a rail service carrying goods from Chongqing (China) to Duisburg (Germany) in 7 days. The railway system has to face two different rail gauges – this is a well-known problem and technical solutions were found at least a century ago. In the case mentioned above the train has to cross 7 different countries, each one with different customs regulations. The solutions require long diplomatic state transactions, legislations and agreements (the same applies to sea and air transport).

As evidence shows, in the transport world, there are dramatic technical changes. What is more difficult, organisational changes that follow are more difficult and longer to reach (if ever). Systems have to be adapted to absorb the technological changes (what was once called “system engineering”) and create interfaces between transport-related systems. Transport solutions based on technology, like electric cars, widebody aircrafts, on-board telecommunication, GPS navigation, high-speed trains and so on are now of common use. But a new transport aspect is coming under the light: the “-less” factor, that is:

- driver-less cars

- pilot-less aircrafts
- crew-less ships

These aspects require a whole transport system change, not only technological changes. As an example, think of a driverless metro systems (there are many already in operation): the metro trains are under the supervision of a control system, that assigns schedules, checks performance, assures safety and in essence makes the metro system run correctly. Passengers don't perceive anything: they just only think that the metro train has no driver. The metro system has to make deep changes to accommodate a driverless line, but it is a closed system, under the control of one authority.

A totally different problem is presented by driverless cars. In case of accidents, who is responsible for what: the car manufacturer? the software company providing the on-board computers to perform all necessary controls? the navigation system company? Furthermore, in case of traffic congestion, who takes control of the situation? And who/what is going to sort out the congestion problem? Insurance companies, legislators, manufacturers, drivers' associations and others need to reconsider their role.

Crewless ships have different problems. It is said the cost of ship transport will decrease in future, but how are hundreds of ships along sea routes going to be properly managed and, once arrived in ports, how are the unloading cargoes (ready to be loaded on other transport modes in order to dispatch them to their final destination) going to be performed?

Pilotless aircrafts have problems of another nature. Drones are now rather common for surveillance, spying and even delivery of

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goods. But, who will be ready to board a pilotless aircraft for going on a business or a tourist trip?

It looks as in the “-less” world, telecommunication companies will be the “big brothers” of the transport world, no matter if

there are electric cars, magnetic trains, nuclear ships: transport has one definite principle: move goods/persons from A to B and how to do it requires dealing with a number of interfaces among many (maybe too many?) systems.



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