

around the world are fully integrated. Many are built on interfaces that allow the electronic exchange of information, but not the processing of data.³⁰ One of the reasons is the reticence of authorities to share data via electronic means with other authorities. Will the higher level of security that Blockchain offers be a game changer? Time will tell.

(v) Data simplification and standardization

In addition, Blockchain will only be able to work at its full potential if data is entered in a format that allows it to be understood in the same way by the various parties involved and easily processed as part of the system. Aligning the semantics (i.e. the meaning of the information exchanged) is crucial. Both UN/CEFACT and the WCO have developed libraries of semantics (see also Section 4.2(b)). Developing standard data sets that cover all data used for information exchange for import, export, transit – and, ideally, for modes of transport and finance – and aligning the processes is also critical.³¹ While the IPPC has published a standard format for ePhyto certificates, this is not the case for other documents required for cross-border trade transactions, such as veterinary certificates, for example, which remain bilateral. Blockchain can potentially enhance cross-border trade procedures, but it will not be able to address standardization issues. Implementing a blockchain platform without having rationalized processes and aligned the semantics beforehand would defeat the very purpose of a blockchain-based system. As far as veterinary certificates are concerned, work is underway at the Codex Alimentarius³² and the World Organisation for Animal Health (OIE) to develop a standard format for veterinary certificates, but it is likely to take time before such a standard is agreed.³³

Developing single standards is a slow and cumbersome process. A more flexible approach could be to map existing formats and ways of entering the data, and agree on a set of approaches that would allow advanced smart contracts to be codified in order to extract the required data and process it via a blockchain platform. Machine learning and artificial intelligence could be useful tools in this regard. Rather than harmonizing approaches beforehand, with the risk that single agreed standards may rapidly become obsolete, this approach would rely on the “standardization of diversity”: the diversity of approaches would be acknowledged and mapped, with the intention of providing a “menu of ‘standard’ ways” of entering the data. Smart trade requires standardization, but it needs smart and flexible standardization.

Last but not least, efficient cross-border procedures do not only depend on well-coordinated government agencies. They also require the efficient integration of the various aspects of a cross-border trade transaction, from trade finance, to customs formalities and logistics. On this front as well, things are moving rapidly.