

Other companies, including rivals of Maersk, are looking into similar end-to-end approaches. After having successfully completed a proof of concept in early 2018 to digitalize bills of lading in cooperation with APL Ltd. (which is owned by the world's third largest container line), logistics company Kuehne + Nagel, and Danish customs (The Maritime Executive, 2018), Accenture, for example, is looking at broadening the test to key players on both the importing and the exporting sides, including export customs authorities and banks (see Figure 3).

If these projects succeed, Blockchain could well become the future of trade infrastructure and the biggest disruptor to the shipping industry and to international trade since the invention of the container. However, several remaining challenges must be overcome.

First, global trade platforms can only work at their full potential once all the underlying trade has been digitalized, including trade finance and customs clearance processes, as well as key documents such as bills of lading (i.e. a detailed list of a ship's cargo given by the master of the ship to the person consigning the goods). As discussed in the preceding sections, full digitalization of trade finance and customs procedures is not yet a reality. As for key documents such as bills of lading, projects are underway that explore how Blockchain could be leveraged to digitalize them. Previous attempts to create electronic bills of lading systems, such as SEADOCS, failed and no longer exist, mainly due to the requirement to subscribe to the system. However, because Blockchain allows for transactions to take place on a peer-to-peer basis with no prior subscription required, it opens new perspectives in this area. According to Accenture, the use of Blockchain has led to an 80 per cent reduction in efforts associated with managing data related to the bill of lading.⁴⁰ Besides the Accenture proof of concept mentioned above, other projects aimed at digitalizing bills of lading include, for example, an initiative by the International Port Community Systems Association (IPCSEA). In addition, in November 2017, fintech startup Wave successfully completed a pilot with ZIM, an Israeli shipping company, and Sparx Logistics of Hong Kong, China to issue and transfer electronic bills of lading using blockchain technology (Logistics and Fintech News, 2017).

The need to digitalize the various operations along the transportation chain means that the development of global trade platforms requires complex and time-consuming integration work. Maersk and IBM acknowledge that the global trade platform they developed will only expand gradually, one trade line at a time.

The multiplicity of projects underway also raises issues of interoperability. Will the various platforms being developed set different standards, at the risk of creating a spaghetti bowl of standards? In the absence of standards that ensure that platforms