decision was recently made to double the size of the blocks on the Bitcoin blockchain from 1 MB to 2 MB and to implement a new technology – known as a segregated witness (SegWit) – to make the amount of data that needs to be verified in each block smaller, thereby accelerating the validation of the blocks (Marshall, 2017). Other proposed solutions, applicable to other blockchains like Ethereum, include, for example, the possibility to conduct some interactions off the blockchain (via the creation of so-called "state channels"), partition the blockchain data into various "shards"* (i.e. over several network segments), and make off-chain computations.[15] Other projects compromise by limiting the number of nodes* needed to validate a transaction at the cost of introducing some centralization. However, none of these solutions on their own can solve the scalability issue of public blockchains, and a combination of approaches will probably be required.

An important point to note, however, is that consortium permissioned blockchains, which are widely used in applications related to international trade, do not face the same limitations. They can use computationally less expensive protocols to verify transactions and are, therefore, more easily scalable. The Hyperledger Fabric, for example, which is a distributed operation system for permissioned blockchains, can process 3,500 transactions per second for certain workloads (Androulaki *et al.,* 2018). Because permissioned blockchains have control over every node in the network, they can ensure that every node is a computer with high bandwidth internet access and high compute power, and that additional compute power is added when needed to ensure that the network does not get congested. It is critical, however, that agencies or businesses turning to Blockchain keep these scalability needs in mind to ensure that their blockchain systems retain their original efficiency and relevance over time.

Finally, it is worth noting that the scalability challenges apply to some distributed ledgers technologies more than others. The vast majority of news articles and studies focus on the Bitcoin blockchain. However, other distributed ledger technologies that do not process transactions in blocks can process a much higher number of transactions (see Table 2). The technology is still maturing and new variants are being developed that provide for greater scalability. Hashgraph, for example, which was launched in 2017, uses a new consensus* algorithm that arguably allows it to process transactions 50,000 times faster than Bitcoin, limited only by bandwidth – i.e. more than 250,000 transactions per second – leading some observers to note that Blockchain has already become obsolete and that the future of distributed ledgers is Hashgraph.[16] It remains to be seen, however, whether Hashgraph or another DLT variant succeed in quickly processing a high level of transactions on a large scale.