I focus on two items within the scope of our Colloquium: Defining and developing consistency in underlying principles on the one hand; and minimizing unnecessary duplication of effort on the other hand.

First, I would like to raise the question of when a transferable paper is ready to be replaced by an electronic record. This implies the question of whether we have to regard all paper-based documents in the same manner, and identify a general pattern to be complied with. Or do we have to confine the range of documents that are fit for e-commerce?

Second, I would like to invite you to identify the underlying principles that make transferable documents ready for e-transcribing.

The first question seems to offer a simple answer: As electronification comes along with a shift from analogue to digital information, paper as a medium needs to be replaced by electronic means. In an e-world of dematerialization, this is provided by distilling and substituting the functions of physical pieces of paper. This “functional-equivalent approach” was already discussed by the Working Group on Electronic Data Interchange\(^1\) in the 1990s. It was based on an analysis of the purposes and functions of the traditional paper-based requirements.\(^2\)

With regard to these functions, it is on the one hand rarely doubted that electronic records can provide the same level of security as paper and, in most cases, a much higher degree of reliability and speed – provided that a number of technical and also legal requirements are met. On the other hand, an electronic record cannot be

\(^{1}\) A/CN.9/WG.IV/WP69.

\(^{2}\) For instance, the following functions of a bill of lading are affected by its use in an e-environment:

- serving as a receipt for the cargo by the carrier;
- serving as evidence of the contract of carriage with regard to its general terms and the particular details;\(^3\)
- serving as a document giving the holder certain rights (including the right to claim and receive delivery of the goods at the port of discharge and the right to dispose of the goods in transit).

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regarded as the equivalent of a paper document in that it is of a different nature and does not in every case achieve all conceivable functions of a paper document. This is why recent regulations do not attempt to define an e-equivalent to paper-based documents. Rather, a flexible standard is adopted transferring basic functions of paper-based form requirements into an e-environment.

Assuming this “functional-equivalent approach” every transferable paper seems to be ready for its dematerialization as long as all of its functions are assured by electronic means. Within the last decade we have seen several budding approaches to face the challenges in reproducing the functions of transferable documents like Bills of Lading. The SeaDocs experiment, the CMI Rules for Electronic Bills of Lading, or the Bolero Project bear testimony to that direct approach for imitation. Another, more indirect approach encourages the use of substitutes to paper documents. For example, already in 1990, ICC’s INCOTERMs dropped the requirement that maritime transport documents must be transferable Bills of Lading. Instead, Bills of Lading are frequently replaced by non-negotiable documents similar to those which are used for modes of transport other than carriage by sea. Only when the buyer wishes to sell goods in transit by surrendering the paper document to the new buyer is the obligation to provide a bill of lading sustained.

With regard to these examples we must state: Yes, the “functional-equivalent approach” enables e-copying of almost all transferable papers. For b2b purposes it is “just” a question of regulative and technical effort that needs to be accomplished. But, moreover, we have to keep in mind that transport documents do not only serve mercantile purposes. They endorse regulative policies, too. Further, if dematerialization comes along with the attempt to define a direct or even indirect equivalent for paper-based documents, shouldn’t we then also dare to ask for a necessity of electronic replacements?

In the 20th century, for example, the paper-based check became a highly popular non-cash method for making payments and the usage of checks peaked. There were several attempts to make the paper check an electronic check by reproducing the functions of the physical check in an electronic environment. Nevertheless, the e-check did not succeed. Other means of payment prevailed. E-banking, debit and credit cards as well as wire transfers replaced the actual needs of commerce for payment that were once covered by checks. Furthermore, other regulations on Know-Your-Customer, Anti-money laundering, etc. made the identification of transferor and transferee mandatory, so that an e-check became unnecessary in commercial transactions. It was not a new technique but a declining demand for its underlying principle that replaced the check.

This leads to my second topic: the foundation for having electronic transferable records prosper. As we have seen a mere electronic blueprint of the equivalent

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3 Documents like „sea waybills“, „liner waybills“, freight receipts or variants of such expressions.
functions of transferable papers is a kind of “essentialia negotii” although it is not sufficient for e-transposition. Consequently, and in order to minimize unnecessary duplication of effort, we should not only focus on the legal and technical issue of how to replace paper-based documents in the most appropriate way by direct or indirect equivalents. Prudent regulation can also include questioning the actual requirements and demands for electronic equivalents. If the purpose of the transferable paper could also be achieved by other documents (be they analogue or digital), this might not be a prosperous matrix for an electronic transferable record. Like constitutional legislation calls for actual necessity of regulation before initiating a bill the development of various electronic transferable records should consider this matter as well.

Thus, the challenges of electronification and dematerialization of transferable documents need to take into account a further principle. I call this the additional benefit of e-papers. An e-document should create such a value or synergy. Then it becomes not just something similar to but a real “aliud” to the paper-version. For refining this added value of the “aliud” the actual purpose of the underlying transaction, business, or commerce need to be scrutinized with due care. Such purposes could be payment, disposal of goods in transit etc. If other means or other functions of the record (like customs or tax documents) already serve these purposes, the electronic transferable record will remain nothing but a mere e-copy of the paper. On the other hand, as more and more authorities and enterprises are linked to an electronic trade process, the purposes of transferable documents could be more and more transferred to these developments. Indeed, such a matrix calls for a complete e-infrastructure - as it might be offered by the single window approach - in which paperless documents are best incorporated. Since not all functions of the transferable paper are yet that clear-cut and met by the e-infrastructure, there will still remain a period of “functional equivalents” in electronic transferable records. This comes along with several interfaces between e-records and paper documents that slow down the dematerialization of transferable documents.

In conclusion, I would like to summarize that readiness of transferable documents for the e-world does not necessarily imply a demand for their dematerialization. Beyond functional equivalents, successful electronic transferable records require a matrix of e-infrastructure which assures creating added value and synergy of the e-paper. The concept of “single window”, for example, seems to afford an auspicious basis of this development.

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