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Jane Kaufman Winn

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ELECTRONIC CHATTEL PAPER UNDER REVISED ARTICLE 9: UPDATING THE CONCEPT OF EMBODIED RIGHTS FOR ELECTRONIC COMMERCE

JANE KAUFMAN WINN*

INTRODUCTION

Revised Uniform Commercial Code (“UCC”) Article 9 includes many provisions designed to remove obstacles to greater use of information technology in commerce. The idea of replacing the terms such as “writing” and “signature” with “record” and “authenticate” to eliminate statute of frauds problems are changes that have been widely noted and discussed for many years.¹ The inefficiencies of the operations of the UCC filing offices in some states today have been well documented and their causes debated for many years.² The provisions of Revised Article 9 governing the operation of filing offices have been dramatically revised to improve the efficiency of filing office operations, including the greater use of electronic filing and retrieval of information.³ The need for these revisions was clear to the Study Committee that recommended revisions to Article 9 in 1992.⁴ By contrast, the electronic chattel paper provisions of Revised Article 9 were a major innovation introduced late in the drafting process that were designed to remove an obstacle to electronic commerce that has not yet been widely recognized and debated.

The electronic chattel paper provisions of Revised Article 9

* Associate Professor, Southern Methodist University School of Law, Dallas, Texas; jwinn@mail.smu.edu; <http://www.smu.edu/~jwinn>. The author wishes to thank Steven Bisbee, Steven Harris, Candace Jones, Kenneth Kettering, Ronald Mann, Charles Mooney, Donald Rapson, and Jeff Ritter for their helpful comments on an earlier draft.

1. See, for example, ABA Electronic Messaging Services Task Force, *The Commercial Use of Electronic Data Interchange—A Report and Model Trading Partner Agreement*, 45 BUS. LAW. 1645, 1680-94 (1990), for a discussion of statute of frauds problems created by electronic contracting.

2. See, e.g., Symposium, “Managing the Paper Trail”: Evaluating and Reforming the Article 9 Filing System, 79 MINN. L. REV. 519 (1995).

3. See Harry C. Sigman, *Twenty Questions About Filing Under Revised Article 9: The Rules of the Game Under New Part 5*, 74 CHI.-KENT L. REV. 861 (1999).

4. See PEB STUDY GROUP, PERMANENT EDITORIAL BD. FOR THE UNIF. COMMERCIAL CODE, UNIFORM COMMERCIAL CODE ARTICLE 9 REPORT 88-90 (Dec. 1, 1992).

represent a major innovation in strategies to remove existing legal barriers to electronic commerce. These provisions are quite a radical departure from the standard menu of changes to existing law generally recognized as necessary to promote innovation in commercial practices, such as the switch to media neutral terminology such as record and authenticate. Because chattel paper is a "mercantile specialty,"⁵ it has many of the same characteristics as a negotiable instrument or document. The law of negotiability permits a piece of paper to embody rights in a separate commercial asset, such as a right to receive payment or ownership of goods in the possession of a bailee. Until recently, it was widely assumed that converting embodied rights systems from paper to electronic processes was not technologically feasible. This was because even very reliable, secure business information systems could not create the electronic equivalent of a unique paper document or instrument.⁶ Secure business information systems in use today maintain databases, and the security and reliability of the information they provide are based on the accuracy of the data in the database. As long as the information reported from the database is correct, there is no reason to worry how many times the data is copied within the system while it is being processed. Although such systems cannot create the electronic equivalent of a negotiable instrument or document, that does not mean that it is not feasible to create business information systems that could create electronic embodied rights systems. The electronic chattel paper provisions in Revised Article 9 are based on the premise that business information systems can in fact create the electronic equivalent of paper chattel paper and that the special priority rules that apply to chattel paper financiers will be available only to electronic chattel paper that is in significant respects the functional equivalent of paper chattel paper.

Industries, such as the chattel paper financing industry or the real estate mortgage industry, that today rely on the security of pieces of paper to perfect rights in physical assets today face significant legal obstacles in trying to automate their existing business processes.⁷ Merely revising commercial statutes to eliminate general statute of

5. A mercantile specialty is a piece of paper which is property of the holder. It embodies rights against other parties and as such is a thing of value. See *United States v. Kellerman*, 729 F.2d 281, 287 n.7 (4th Cir. 1984).

6. See Walter A. Effross, *Notes on PKI and Digital Negotiability: Would the Cybercourier Carry Luggage?*, 38 JURIMETRICS 385, 395 (1998).

7. See, e.g., James A. Newell & Michael R. Gordon, *Electronic Commerce and Negotiable Instruments (Electronic Promissory Notes)*, 31 IDAHO L. REV. 819, 833 (1995).

frauds concerns cannot authorize the creation of electronic embodied rights systems unless further concrete provisions are added aimed at accomplishing that specific result. On the other hand, a broadly drafted provision authorizing in general terms the creation of electronic embodied rights systems raises troubling questions about many existing bodies of commercial law that have not yet been carefully analyzed. Such questions include how or even whether the boundaries between UCC Article 3 governing negotiable instruments, UCC Article 4A governing electronic funds transfers, and federal law governing electronic funds transfers, should be maintained.⁸ The revisions to Article 9 were designed to facilitate innovation within a narrow segment of the financial services industry while still avoiding the risk of unleashing a flood of unintended consequences through hasty reforms of well-established bodies of law.

The provisions of Revised Article 9 governing electronic chattel paper seek a middle ground between an overly technologically-specific description of what is not yet an established commercial practice and a broadly permissive provision that could unsettle other bodies of law. The danger of making the kind of miscalculation about the relationship between law and innovation in commercial practice that was made in the 1977 revisions to Article 8 governing transactions in securities was clear.⁹ In the 1977 revisions to Article 8, the drafters attempted unsuccessfully to anticipate the future direction of automation in the securities industry by using the practices developed in the government securities market as a model without noting that market practices for other types of stocks and bonds differed markedly. The consequence of the unsuccessful 1977 revisions of Article 8 was at best a statute that was irrelevant to commercial practice and at worst the creation of a greater degree of uncertainty than had prevailed prior to the revisions.

The electronic chattel paper provisions of Article 9 create a minimum technological threshold that electronic chattel paper must meet in order to qualify for the special priority rules that apply to

8. See *infra* Part I. Analysis of existing statutory provisions that may serve as models for the Uniform Electronic Transactions Act ("UETA") may be found in the *Joint Report to the UETA Drafting Committee on the UETA Provisions Governing Transferrable Records* (Revised Draft, Jan. 25, 1999), available at <<http://www.webcom.com/legaled/ETAForum/docs/0199aba.html>>.

9. One of the reporters of Article 9 was one of the principal architects of the 1994 revisions to Article 8 designed to rectify the failures of the 1977 revisions of Article 8. See Charles W. Mooney, Jr., *Beyond Negotiability: A New Model for Transfer and Pledge of Interests in Securities Controlled by Intermediaries*, 12 CARDOZO L. REV. 305 (1990).

chattel paper financiers. Adding a new provision to Article 9 that conditions specific legal outcomes on the use of technologies with particular characteristics creates a risk that future innovations will not be covered, resulting in the creation of unintended obstacles to electronic commerce. Specific proposals regarding electronic chattel paper were made relatively late in the drafting process, however, with the language of section 9-105 being subjected to serious debate and scrutiny only during the final weeks of the drafting process. After the decision to include language in the form of Revised section 9-105 had been made, a specially convened Article 3/9 Task Force reviewed the question of whether security interests in notes should be treated the same way. In March 1998, the Task Force recommended extending the treatment of electronic chattel paper to electronic notes, but this proposal was not accepted by the Drafting Committee.¹⁰ While the business case for treating sales of electronic notes as a financing system based on embodied rights principles might have been very compelling, the Drafting Committee apparently concluded that substantial changes in the law governing security interests in notes should be limited given that revisions to Article 3 were not even under consideration at the time.

The risks of irrelevance or unintentionally creating impediments to innovation in financial markets had to be weighed against the risks of unsettling established bodies of law that are integral to the operation of modern financial services. Backdoor changes to the law of negotiability through Article 9 might have an impact on the safety and soundness of regulated financial intermediaries and could be expected to trigger opposition from bank regulators to the adoption of Revised Article 9.¹¹ This concern on the part of bank regulators is based in part on the fact that the full range of parties who would expect to be allowed to participate in any process aimed at revising the law of negotiability were not present for the Article 9 revision process. The electronic chattel paper provisions of Revised Article 9 do not require the services of a regulated financial intermediary,

10. See Memorandum from the Article 3/9 Task Force on the Inclusion of Sales of Instruments (Negotiable, Non-negotiable, and Intangible) in Article 9 to the Article 9 Drafting Committee (undated memo) (on file with author).

11. These concerns were expressed forcefully by representatives of the Federal Reserve Bank of New York during discussions of similar provisions proposed for inclusion in UETA the following year. See Letter from Stephanie Heller, Joseph H. Sommer, and Sophia R. Vicksman, Federal Reserve Bank of New York, to the Drafting Committee of the Uniform Electronic Transactions Act (Feb. 1, 1999), available at <<http://www.webcom.com/legaled/ETAForum/docs/frbny.pdf>>.

relying instead on the electronic equivalent of possession of the paper as a strategy for minimizing fraud and error risks.

Negotiable instruments law regulates financial transactions at the level of contracting parties. Most modern financial transactions now take place through regulated financial intermediaries and are regulated both at the level of the transaction, as a matter of contract or other law, and at the level of the intermediary, as a matter of banking or securities regulation. While a transaction-based model of risk management conforms to current industry practice for chattel paper financing, it is unclear whether it is a suitable model for broader revisions to the law of negotiability generally given the role played by negotiable instruments in payment systems and other financial transactions conducted through regulated financial intermediaries.¹² The Uniform Electronic Transactions Act (“UETA”) is expected to be finalized in July 1999 and is expected to include a section authorizing the creation of “transferable records,” which is a more general category of electronic embodied rights assets than electronic chattel paper. The provisions governing control of transferable records include language substantially similar to Revised section 9-105 together with further provisions to conform the treatment of transferable records to the treatment of negotiable instruments. The scope of the UETA transferable record section is limited by the requirement that the obligor expressly agree to the application of the UETA provisions.¹³ These provisions in the UETA are felt to be adequate to permit pilot projects involving electronic promissory notes to be undertaken pending the possible revision of Article 3 to more broadly authorize the creation of electronic promissory notes.

The electronic chattel paper provisions of Revised Article 9 are major innovations in the law of electronic commerce both because they condition a legal outcome on the use of technologies that are not yet widely in use in financial markets, and because they suggest that the restraints implicit in that technological approach might counterbalance the lack of oversight by a regulatory authority. The approach taken to drafting the electronic chattel paper provisions in Revised Article 9 is important for more than the new opportunities it offers chattel paper financiers. It foreshadows the larger debate now beginning over how traditional doctrines of negotiability should be

12. *See id.*

13. *See* UNIF. ELEC. TRANSACTIONS ACT § 115(a)(2) (Draft 1999).

revised to accommodate advances in electronic commerce.

I. CONTROL OF ELECTRONIC CHATTEL PAPER

Chattel paper is a type of commercial asset that includes both a monetary obligation and rights in personal property.¹⁴ Common forms of chattel paper include retail installment sales contracts, personal property leases, and promissory notes secured by personal property. Each year, tens of billions of dollars of transactions in equipment and similar assets are financed through the use of chattel paper. Participants in this financial services industry are trying to find ways to eliminate the paper and make these transactions wholly electronic but are currently discouraged from doing so by the lack of legal recognition of chattel paper created or preserved in an electronic form.¹⁵

Revised Article 9 recognizes electronic chattel paper¹⁶ as a new variation of an existing class of asset. It permits perfection of security interests in such assets through a sui generis form of "control,"¹⁷ that

14. In Revised section 9-102(a)(11) chattel paper is defined as:

a record or records that evidence both a monetary obligation and a security interest in specific goods, a security interest in specific goods and software used in the goods, or a lease of specific goods, or a lease of specific goods and license of software used in the goods. In this paragraph, "monetary obligation" means a monetary obligation secured by the goods or owed under a lease of the goods and includes a monetary obligation with respect to software used in the goods. The term does not include charters or other contracts involving the use or hire of a vessel. If a transaction is evidenced by records that include an instrument or series of instruments, the group of records taken together constitutes chattel paper.

15. See James M. Swartz, *Electronic Finance: Chattel Paper and Electronic Commerce—Selling Financial Services on the Internet*, Paper Presented at The Conference on Consumer Finance Law Electronic Commerce and Banking Program (Dec. 17, 1998).

16. In Revised section 9-102(a)(31), electronic chattel paper is defined as: "chattel paper evidenced by a record or records consisting of information stored in an electronic medium."

17. Revised section 9-105 provides:

A secured party has control of electronic chattel paper if the record or records comprising the chattel paper are created, stored, and assigned in such a manner that:

- (1) a single authoritative copy of the record or records exists which is unique, identifiable and, except as otherwise provided in paragraphs (4), (5), and (6), unalterable;
- (2) the authoritative copy identifies the secured party as the assignee of the record or records;
- (3) the authoritative copy is communicated to and maintained by the secured party or its designated custodian;
- (4) copies or revisions that add or change an identified assignee of the authoritative copy can be made only with the participation of the secured party;
- (5) each copy of the authoritative copy and any copy of a copy is readily identifiable as a copy that is not the authoritative copy; and
- (6) any revision of the authoritative copy is readily identifiable as an authorized or unauthorized revision.

is equivalent in legal effect to the possession of paper chattel paper. Revised section 9-105 provides that control can be achieved only when the record or records comprising the chattel paper is created, stored, and assigned in the manner set forth in paragraphs (1) through (6) of section 9-105. For a party to establish that it has control of the electronic chattel paper, it will be responsible for showing the conditions under which the chattel paper was maintained throughout the life cycle of the asset. There is no requirement that electronic chattel paper be created in electronic form, although a holder of electronic chattel paper would be expected to account for how paper chattel paper was converted to electronic chattel paper in order to demonstrate that the requisite degree of security had been maintained throughout the process of creation and conversion to electronic form.¹⁸

Revised section 9-105(1) provides that electronic chattel paper must consist of a single authoritative copy of the chattel paper record or records which is unique, identifiable, and generally unalterable. This provision refers to a single authoritative copy of the record because even the most secure computerized information system cannot function without making copies of records. For example, many transitory copies of a record may be made as it travels over a computer network before it is finally displayed on a computer screen. The issue is, therefore, not whether the electronic chattel paper record is absolutely unique in the sense that chattel paper represented by a piece of paper is a unique collection of atoms in the material world, because no electronic record used in an electronic business information system can be unique in that sense. Rather, the electronic chattel paper record must exist within a computer system which is designed to distinguish one special copy of the record as uniquely significant. Such a business information system could permit many additional copies of the electronic chattel paper record to be made. For example, copies identified as read-only copies might be made to permit clerical employees or account debtors to view the record for informational purposes. As long as the information system is capable of distinguishing the one single authoritative copy which is separately and more securely maintained, the existence of many read-only or informational copies within a business information system does not make it impossible to demonstrate control over the authoritative copy. The business information system must be capable of identifying

18. See R. § 9-105 cmt. 3.

the authoritative copy at all times and keeping it separate from the other copies and must be capable of preventing unauthorized alterations of that authoritative copy. The creation of such a single authoritative copy will depend on the security of the business information system as a whole.¹⁹

The authoritative copy must identify the secured party as the secured party or as the assignee of the electronic chattel paper.²⁰ This is the electronic equivalent of endorsing paper chattel paper over to the secured party or placing a legend on the face of paper chattel paper identifying the secured party as the owner of the paper if the secured party is not already identified as such. In electronic commerce, there may not always be a direct equivalent to the physical transfer of possession because ownership of the electronic chattel paper may be transferred even though the asset is not moved from one system to another. Interested parties will be able to obtain information about claims against the paper from the information system within which the electronic chattel paper is maintained, rather than from the inspection of the physical chattel paper itself. The business information system within which the single authoritative copy is maintained must be able to distinguish between the rights of a secured party as assignee of the electronic chattel paper and the more limited rights of any other party who, for example, may only have rights to view a read-only copy of the electronic chattel paper.

The authoritative copy must be communicated to and maintained by the secured party or its designated custodian.²¹ The secured party may be capable of maintaining its own secure business information system or may prefer to delegate that responsibly to a third party. In either case, control will exist only if the information system can be shown to maintain the level of security necessary to establish that a single authoritative copy exists and that only the secured party may effect changes in the ownership of the electronic chattel paper. Given that not many business information systems exist today that are capable of guaranteeing such a high degree of security, it is likely that specialized organizations will offer such services. Because a showing of control requires showing how the electronic chattel paper was created, maintained, and assigned, the manner in which electronic chattel paper is communicated will have to be as secure as the manner

19. *See id.* (recognizing that both authentication technologies and business practices may be used to create authoritative copies of electronic chattel paper).

20. *See id.* § 9-105(2).

21. *See id.* § 9-105(3).

in which it is stored once it has been transferred.

The secured party must be a necessary participant whenever changes that affect the ownership of the electronic chattel paper are made.²² Because Revised Article 9 permits the secured party to designate a custodian for the electronic chattel paper,²³ changes to the ownership of electronic chattel paper may require the participation of more than just the secured party. Precisely how that participation will take place or what would be required to prove that the secured party did in fact participate will depend on the way the secure business information system within which the electronic chattel paper is maintained has been set up. For example, the participation of the secured party may take place through the use of a digital signature or biometric identifier stored on a smart card that can be inserted in a smart card reader located in an enhanced computer keyboard.

As a corollary of the idea of an authoritative copy, Revised section 9-105(5) requires that any copy of the authoritative copy, and even any copy of such a copy, must be readily distinguishable from the authoritative copy itself. A secure information system cannot prevent the copying of the electronic record as such, but rather rigorously controls the conditions under which copying occurs. In a secure system, it is possible to monitor the conditions under which the authoritative copy of the record and all other copies of the record are maintained in order to guarantee as a practical matter the uniqueness of the authoritative copy. There is no simple, direct electronic equivalent to possession of unique piece of paper chattel paper for electronic chattel paper. For example, a secured party may be in physical possession of a copy of electronic chattel paper on a floppy disk. That act of possession reveals nothing about how many copies of the record were made before possession was taken or how many copies may be made after possession is verified. When the notion of paper as an embodiment of legal rights first evolved, there were considerable practical constraints on making flawless forgeries of negotiable instruments or documents. Even with the modern printing and photocopying technology available today, there remain at least some minimal physical constraints to the flawless reproduction of most forms of paper chattel paper. In the world of digital information, however, these constraints more or less disappear.²⁴ The virtually

22. *See id.* § 9-105(4).

23. *See id.* § 9-105(3).

24. In digital electronic computers, data is represented by 1s and 0s, which correspond to the two electrical states of off and on. While in digital form, data can be processed more reliably

perfect reproduction of electronic chattel paper in digital form is not difficult at all. If an electronic record in digital form exists outside a secure information system, it may not be possible to tell whether or how often or under what circumstances copies of that electronic record were made.

In a similar vein, the secure business information system within which electronic chattel paper is maintained must be able to distinguish between authorized revisions and unauthorized revisions. A revision to electronic chattel paper might occur when one secured party assigns the asset to another secured party. This revision might take the form of placing the secured party's digital signature on the electronic chattel paper. Because the digital signature adds data to the electronic chattel paper record, it could be thought of as a sort of electronic "allonge" affixed to the original record.²⁵ The secure system need not prevent any revision to the electronic chattel paper record from ever occurring but only guarantee that authorized revisions can be clearly distinguished from unauthorized ones. This is the electronic equivalent of distinguishing between a valid indorsement and a forged indorsement or a legend indicating a transfer of ownership to a third party stamped on the face of paper chattel paper that is duly authorized by the secured party and an unauthorized one.

These control provisions are intended to be medium neutral with regard to the technology to be used, provided that the new technology supports the functional equivalent of current paper processes. If market participants choose to replace paper documents with electronic documents but do so using technology that cannot produce an "authoritative copy," the rights of the parties to the transaction would have to be determined with reference to other law. For example, the concept of a securities entitlement under the 1994

than data in analog form because the binary representation of information is less susceptible to distortion or noise than the more subtle gradations of variables characteristic of data stored in analog form. Data stored in digital form can be converted to and from analog forms that can be more readily displayed or transmitted. When copies of data in analog form are made, the quality of the copy rapidly degrades. Consider, for example, the quality of a copy of a copy of a standard VHS format videotape. When copies of digital data are made, they are for all practical purposes perfect copies. Consider, by contrast, the fidelity with which images posted on the World Wide Web can be copied almost without limit without any visible deterioration in image quality. For an explanation of the operation and social significance of digital technology written for laypersons, see NICHOLAS NEGROPONTE, *BEING DIGITAL* (1995).

25. See U.C.C. § 3-204(a). See Jane Kaufman Winn, *Couriers Without Luggage: Negotiable Instruments and Digital Signatures*, 49 S.C. L. REV. 739 (1998), for a discussion of digital signature technology and its relationship to negotiable instrument law.

revised version of Article 8 has sufficient flexibility to cover new forms of commercial transactions beyond purchases and sales of stocks and bonds within organized securities markets.²⁶

It remains for market participants working with technology developers to determine just how much security will be required to establish beyond question that a system can meet the standards in Revised section 9-105 for control of an authoritative copy. It seems likely that such systems will include very sophisticated access controls and use encryption technology to associate individual identities with actions such as transfers of records.²⁷ Advances in the commercial application of these technologies is what makes the whole notion of an electronic embodied rights system feasible in the late 1990s, whereas it might not have been feasible a decade earlier. It has been suggested, however, that less sophisticated systems might also meet the standard of Revised section 9-105. For example, an electronic chattel paper record might be burned into a "write once, read many" CD-ROM that includes the legend "the authoritative copy of this record can be viewed only when this CD-ROM is viewed from Computer No. 1 in the head office of Designated Custodian, located at 101 Main Street, Wilmington, Delaware," and Designated Custodian might have in place business processes that prevent the unauthorized duplication of an authoritative copy CD-ROM. Whether such a simple solution would withstand the scrutiny of a court aided by a bankruptcy trustee's information system security experts analysis is unclear.

The comments to Revised section 9-105 make clear that the creation of an authoritative copy need not be fully automated or exclude any human participation, however.²⁸ The fact that highly automated processes incorporating very advanced technologies may be used to create authoritative copies does not imply that is the only solution that can be found to meet the requirements of Revised

26. UCC section 8-501(a) provides that a securities account may be created by agreement. Comment 1 to section 8-501 explains that this provision should be interpreted liberally in order to permit continued innovation of commercial practice in this area. If chattel paper were converted to a securities entitlement under Article 8, the chattel paper financier would have to determine if its priority under Article 8 was equivalent to the superpriority it would enjoy under Article 9. See *infra* text accompanying notes 32-44, for a discussion of superpriority granted chattel paper financiers.

27. See BENJAMIN WRIGHT & JANE K. WINN, *THE LAW OF ELECTRONIC COMMERCE* § 3.06 (3d ed. 1998 & Supp. 1999).

28. See R. § 9-105 cmt. 4 ("This Article leaves to the marketplace the development of systems and procedures, through a combination of suitable technologies and business practices, for dealing with electronic chattel paper in a commercial context.").

section 9-105. Some combination of human processes and information technology is required to make any information system secure.²⁹ The comments to Revised section 9-105 make clear that a mere agreement between interested persons that a secured party is in "control" of electronic chattel paper is not sufficient to make it so. Rather, the standard for control of electronic chattel paper should be equivalent in stringency to the standard for possession of tangible chattel paper.³⁰

If electronic chattel paper that meets the requirements of Revised section 9-105 gains acceptance in financial markets, much of the administration of electronic chattel paper would be automated and could be standardized to conform to industry best practices. This would be in marked contrast to the kind of practices that today give rise to litigation regarding tangible chattel paper, which may in turn reflect a general erosion in the soundness of current commercial practices for handling tangible chattel paper. For example, in *In re Funding Systems Asset Management Corp.*,³¹ the secured party made several mistakes in handling chattel paper that permitted the bankruptcy trustee to avoid the lender's security interest as unperfected. The secured party claimed an interest in financing equipment leases but failed to insure that schedules itemizing the equipment subject to the debtor's security interest were attached to the financing leases, as well as permitting the execution of multiple originals of the financing leases without taking the precaution of legending all but the one in the lender's possession as duplicates. If this kind of lack of attention to the procedures for taking possession of tangible chattel paper is widespread, then the introduction of electronic chattel paper into chattel paper financing practices may result in more regular adherence to sound commercial practices among the transacting parties.

II. SUPERPRIORITY FOR CHATTEL PAPER FINANCIERS

Original Article 9 created special rules to govern the perfection of chattel paper. Based on the experience with negotiable instruments and documents as collateral under the uniform acts that preceded

29. See RITA C. SUMMERS, *SECURE COMPUTING: THREATS AND SAFEGUARDS* 4-5 (1997) (noting that managers, employees, security professionals, computing professionals, product technologies, research, and larger social processes all affect the security of business information systems).

30. See R. § 9-105 cmt. 4.

31. *Funding Sys. Asset Management Corp. v. Chemical Bus. Credit Corp.* (*In re Funding Sys. Asset Management Corp.*), 111 B.R. 500 (Bankr. W.D. Pa. 1990).

Article 9, original Article 9 provided that a nonpossessory security interest in chattel paper perfected by filing would be subordinate under certain circumstances to a security interest perfected by possession.³² The first chattel mortgage acts were construed as applying to only chattels and excluded transfers of negotiable instruments and documents for security from their scope. This left security interests in negotiable instruments and documents governed by pledge law alone until trust receipts law was applied to negotiable collateral. Under both common law trust receipts doctrine and trust receipts acts, the notion that the entruster retained full title and that the trustee had none might have created problems in the case of negotiable collateral transferred to a good faith purchaser. Courts followed the rules of negotiability, however, and held that the rights of the subsequent good faith purchaser trumped those of the defrauded entruster.³³ The Uniform Trust Receipts Act and original Article 9 carried forward this pattern, by permitting a good faith purchaser of a negotiable instrument to take free of a security interest perfected by filing.³⁴

While the rules regarding possessory security interests in chattel paper may have developed out of experience with negotiable collateral, chattel paper lies somewhere between a negotiable instrument on the one hand and an account on the other.³⁵ Rights in a negotiable instrument are determined by possession, whereas possession cannot determine ownership of an intangible asset such as accounts.³⁶ Old Article 9, therefore, permitted security interests in chattel paper to be perfected by either filing or possession, while

32. UCC section 9-308 (Purchase of Chattel Paper and Instruments) provides:

A purchaser of chattel paper or an instrument who gives new value and takes possession of it in the ordinary course of his business has priority over a security interest in the chattel paper or instrument

- (a) which is perfected under Section 9-304 (permissive filing and temporary perfection) or under Section 9-206 (perfection as to proceeds) if he acts without knowledge that the specific paper or instrument is subject to a security interest; or
- (b) which is claimed merely as proceeds of inventory subject to a security interest (Section 9-306) even though he knows that the specific paper or instrument is subject to the security interest.

33. See 2 GRANT GILMORE, SECURITY INTERESTS IN PERSONAL PROPERTY § 25.2, at 659 (1965).

34. See UNIF. TRUST RECEIPTS ACT § 9(1), 9C U.L.A. 255 (1957); U.C.C. § 9-308.

35. UCC section 9-105(1)(b) provides that when a transaction is evidenced by both a security agreement or a lease and by an instrument or a series of instruments, the group of writings taken together constitutes chattel paper; Revised section 9-102(a)(11) has a similar provision.

36. See 2 GILMORE, *supra* note 33, § 25.5, at 666; JAMES J. WHITE & ROBERT S. SUMMERS, UNIFORM COMMERCIAL CODE § 24-17, at 890 (4th ed. 1995).

generally limiting security interests in negotiable instruments to possessory interests.³⁷ When old Article 9 was drafted, commercial practice with regard to chattel paper, such as conditional sale contracts or leases, had developed two distinct ways of handling security interests in such paper. The direct collection method involved assigning the chattel paper to a third party financing agency, which took possession of the paper, notified the account debtor of the assignment, and received the installment payments directly. The indirect collection system involved permitting the seller-assignor to retain possession of the paper and to collect payments from the account debtor which were then remitted to the financier. Old section 9-308 recognized both practices, while also recognizing the fact that chattel paper was thought of as a sort of commercial specialty possessing some of the attributes of negotiability. As a result, a lender who chose the indirect collection route had the option of filing to perfect but was at risk of having its security interest subordinated to a subsequent purchaser who gives value and takes possession in the ordinary course of business without notice that the specific paper is subject to a security interest or, if the purchaser knows of the interest, was a security interest which is merely claimed as proceeds of inventory.³⁸

Whether this superpriority rule for secured parties taking possession for chattel paper made sense in the 1950s when it was first established or today has been debated at length.³⁹ It was nevertheless the decision of the Revised Article 9 Drafting Committee not only to leave the superpriority rule in place, but to update its provisions so that the superpriority rule might apply to electronic chattel paper as well.⁴⁰ This decision was taken in response to comments received by

37. See U.C.C. § 9-304(1). A security interest in negotiable documents could be perfected by either possession or filing.

38. See *id.* § 9-308.

39. See, e.g., Thomas H. Jackson, *Embodiment of Rights in Goods and the Concept of Chattel Paper*, 50 U. CHI. L. REV. 1051, 1086 (1983) (chattel paper is an embodiment of rights in goods, and embodied rights systems may have advantages over other systems for controlling ownership in commercial assets); Joseph H. Levie, *Security Interests in Chattel Paper*, 78 YALE L.J. 935, 936 (1969) (chattel paper financing facilitates purchase money financing in particular); Donald J. Rapson, "Receivables" Financing Under Revised Article 9, 73 AM. BANKR. L.J. 133, 156-57 (1999) (chattel paper promotes the financing of sales and leases of goods and services; superpriority for chattel paper and not accounts reflects different functions of distinct segments of financing industry); Julianna J. Zekan, *Chattel Paper Financing: Metaphysical Property and Real Money*, 29 IDAHO L. REV. 723, 744-46 (1992-1993) (the superpriority rule rewards calculated ignorance on the part of chattel paper financiers and undermines the more general policy of Article 9 to promote the use of the filing system; chattel paper financing is now a big business and no longer requires special treatment if it ever did).

40. Revised section 9-330 provides:

the Drafting Committee from representatives of chattel paper financiers indicating a strong interest among industry participants in moving to electronic processes. Asking industry participants to sacrifice superpriority status in order to obtain the benefits of automation of business processes would, however, inhibit innovation in this field.

In the absence of any special provisions in Revised Article 9 to accommodate electronic chattel paper, the conversion of chattel paper to an electronic form would have removed the asset from the category of chattel paper while making its correct classification as an asset stored in an electronic format unclear under the new asset classification system of Revised Article 9.⁴¹ The use of an electronic

- (a) A purchaser of chattel paper has priority over a security interest in the chattel paper which is claimed merely as proceeds of inventory subject to a security interest if:
 - (1) in good faith and in the ordinary course of the purchaser's business, the purchaser gives new value and takes possession of the chattel paper or obtains control of the chattel paper under Section 9-105; and
 - (2) the chattel paper does not indicate that it has been assigned to an identified assignee other than the purchaser.
- (b) A purchaser of chattel paper has priority over a security interest in the chattel paper which is claimed other than merely as proceeds of inventory subject to a security interest if the purchaser gives new value and takes possession of the chattel paper or obtains control of the chattel paper under Section 9-105 in good faith, in the ordinary course of the purchaser's business, and without knowledge that the purchase violates the rights of the secured party.
- (c) Except as otherwise provided in Section 9-327, a purchaser having priority in chattel paper under subsection (a) or (b) also has priority in proceeds of the chattel paper to the extent that:
 - (1) Section 9-322 provides for priority in the proceeds; or
 - (2) the proceeds consist of the specific goods covered by the chattel paper or cash proceeds of the specific goods, even if the purchaser's security interest in the proceeds is unperfected.
- (d) Except as otherwise provided in Section 9-331(a), a purchaser of an instrument has priority over a security interest in the instrument perfected by a method other than possession if the purchaser gives value and takes possession of the instrument in good faith and without knowledge that the purchase violates the rights of the secured party.
- (e) For purposes of subsections (a) and (b), the holder of a purchase-money security interest in inventory gives new value for chattel paper constituting proceeds of the inventory.
- (f) For purposes of subsections (b) and (d), if chattel paper or an instrument indicates that it has been assigned to an identified secured party other than the purchaser, a purchaser of the chattel paper or instrument has knowledge that the purchase violates the rights of the secured party.

41. See American Bar Association Section of Business Law, Committee on Law of Commerce in Cyberspace, Subcommittee on Electronic Commerce, Working Group on Secured Transactions, Presentation to Article 9 Drafting Committee on the Treatment of Electronic "Chattel Paper" Under Revised Article 9 (Mar. 1997), available at <<http://www.abanet.org/buslaw/cyber/archive/secured.html>>. This paper is also available as Ron Gross & Candace Jones, *The Treatment of Electronic "Chattel Paper" Under Revised Article 9*, 31 UCC L.J. 47 (1998).

storage medium might arguably have converted the chattel paper into an account,⁴² although this classification does not generally recognize the property right that is part of definition of traditional chattel paper. This asset might better fit the definition of payment intangible,⁴³ but this result would also be far from certain. This uncertainty about asset classification would produce uncertainty about how to perfect a security interest in electronic chattel paper, as a sale of payment intangibles is automatically perfected, whereas a sale or security transfer of accounts may only be perfected by filing.⁴⁴ By recognizing electronic chattel paper as a class of assets under Revised Article 9, this potential uncertainty about what perfection regime would apply to chattel paper created or stored in an electronic form was eliminated.

III. EMBODIED RIGHTS SYSTEMS VERSUS ACCOUNT-BASED SYSTEMS FOR ELECTRONIC COMMERCE

The concept of control of electronic chattel paper under Revised Article 9 is clearly distinguishable from the concept of control as applied to investment property,⁴⁵ bank accounts,⁴⁶ or letter-of-credit

42. Revised section 9-102(a)(2) defines an account as:

a right to payment of a monetary obligation, whether or not earned by performance, (i) for property that has been or is to be sold, leased, licensed, assigned, or otherwise disposed of, (ii) for services rendered or to be rendered, (iii) for a policy of insurance issued or to be issued, (iv) for a secondary obligation incurred or to be incurred, (v) for energy provided or to be provided, (vi) for the use or hire of a vessel under a charter or other contract, (vii) arising out of the use of a credit or charge card or information contained on or for use with the card, or (viii) as winnings in a lottery or other game of chance operated or sponsored by a State, governmental unit of a State, or person licensed or authorized to operate the game by a State or governmental unit of a State. The term includes health-care-insurance receivables. The term does not include (i) rights to payment evidenced by chattel paper or an instrument, (ii) commercial tort claims, (iii) deposit accounts, (iv) investment property, (v) letter-of-credit rights or letters of credit, or (vi) rights to payment for money or funds advanced or sold, other than rights arising out of the use of a credit or charge card or information contained on or for use with the card.

43. Revised section 9-102(a)(61) defines a payment intangible as "a general intangible under which the account debtor's principal obligation is a monetary obligation."

44. Revised section 9-309(3) provides that security interests resulting from a sale of a payment intangible are automatically perfected upon attachment. Except for a limited class of assignments of accounts which do not transfer a significant part of the assignor's outstanding accounts, *see* R. § 9-309(2), perfection of accounts is governed by the filing requirement in Revised section 9-308.

45. Revised section 9-106 governs control of investment property and provides:

- (a) A person has control of a certificated security, uncertificated security, or security entitlement as provided in Section 8-106.
- (b) A secured party has control of a commodity contract if:
 - (1) the secured party is the commodity intermediary with which the commodity contract is carried; or

rights.⁴⁷ Those control provisions are representative of one of the primary achievements of the 1999 revisions to Article 9: bringing the provisions of Article 9 into line with important financing practices that have emerged since the 1950s when the first official version of the UCC was promulgated. Investment property, deposit accounts, and letter-of-credit rights are commercial assets normally held by regulated financial intermediaries. Those intermediaries generally track ownership of assets within computer systems organized around customer accounts.⁴⁸ The reliability of account-based commercial transaction systems is guaranteed not merely by the intermediary's own interest in the accuracy and integrity of its accounting system, but by oversight provided by governmental agencies such as the Securities and Exchange Commission or the Office of the Comptroller of the Currency. Those intermediaries also rely on an older generation of information technology based on mainframe legacy computer systems to process those accounting records.⁴⁹ The practice of using control over an intangible asset held in the form of an account with a regulated financial intermediary as a substitute for physical possession of a paper that embodies rights in commercial

(2) the commodity customer, secured party, and commodity intermediary have agreed that the commodity intermediary will apply any value distributed on account of the commodity contract as directed by the secured party without further consent by the commodity customer.

(c) A secured party having control of all security entitlements or commodity contracts carried in a securities account or commodity account has control over the securities account or commodity account.

46. Revised section 9-104 governs control of deposit accounts and provides:

(a) A secured party has control of a deposit account if:

- (1) the secured party is the bank with which the deposit account is maintained;
- (2) the debtor, secured party, and bank have agreed in an authenticated record that the bank will comply with instructions originated by the secured party directing disposition of the funds in the account without further consent by the debtor; or
- (3) the secured party becomes the bank's customer with respect to the deposit account.

(b) A secured party that has satisfied subsection (a) has control, even if the debtor retains the right to direct the disposition of funds from the deposit account.

47. Revised section 9-107 governs control of letter-of-credit rights and provides:

A secured party has control of a letter-of-credit right to the extent of any right to payment or performance by the issuer or any nominated person if the issuer or nominated person has consented to an assignment of proceeds of the letter of credit under Section 5-114(c) or otherwise applicable law or practice.

48. For an analysis of what he suggests should be thought of as "the law of financial accounts," see Joseph H. Sommer, *A Law of Financial Accounts: Modern Payment and Securities Transfer Law*, 53 BUS. LAW. 1181, 1182 (1998).

49. For a discussion of how closed network electronic commerce based on mainframe computers differs from open network electronic commerce based on distributed networks, see Jane Kaufman Winn, *Open Systems, Free Markets, and Regulation of Internet Commerce*, 72 TUL. L. REV. 1177, 1184-90 (1998).

property may have been a novelty in the 1950s but is now well established.

The most widely used and best understood models for automating financial market transactions in use today are based on the use of registries or the use of accounting records to track ownership. Examples of electronic registries include certificateless securities, such as book entry treasury obligations or mutual fund shares. Money balances in electronic payment systems are tracked through the use of accounting records maintained by trustworthy intermediaries such as regulated financial institutions. The filing office provisions of Revised Article 9 establish a model for a central, public registry that will support electronic filing and searches.⁵⁰ Should participants in markets for chattel paper choose to use any of these models in automating the processing of chattel paper, the technological requirements of Revised section 9-105 would not be met. As a business decision, it remains possible that chattel paper financiers may nevertheless choose an account-based model to convert paper chattel paper to electronic form if they determine that the cost advantages of automation outweigh the legal advantages of superpriority, although such a decision seems unlikely given the reliance of the current structure of the chattel paper financing industry on the superpriority it currently enjoys.⁵¹

The decline in importance of paper-based embodied rights systems, such as those governing negotiable instruments, and the rise of account-based systems has been widely noted and often interpreted to mean that embodied-rights systems are simply anachronistic.⁵² Furthermore, there has been considerable uncertainty about whether an electronic embodied rights system is even feasible from a technological point of view.⁵³ In fact, with adequate security measures, an electronic equivalent to a negotiable instrument or chattel paper can be created, although it does require a higher level of

50. See Sigman, *supra* note 3, at 861.

51. This was suggested to the author in an April 1999 conversation with Donald Rapson, Senior Vice President and retired Assistant General Counsel of The CIT Group, Inc. The CIT Group is a major financier of accounts and other receivables and provides chattel paper financing services. Mr. Rapson has also dealt with developments in the law governing receivables financing in his capacity as an adjunct professor of law at New York University Law School and Columbia Law School, and as a member of the Article 9 drafting committee and the Permanent Editorial Board of the UCC.

52. See, e.g., Ronald J. Mann, *Searching for Negotiability in Payment and Credit Systems*, 44 UCLA L. REV. 951, 953 (1997); James Steven Rogers, *The Irrelevance of Negotiable Instruments Concepts in the Law of the Check-Based Payment System*, 65 TEX. L. REV. 929, 930 (1987).

53. See Effross, *supra* note 6, at 395.

security than most business information systems provide today.⁵⁴ While the scope of the electronic chattel paper provisions are narrowly constrained by the terms of Revised Article 9, these provisions are nonetheless a significant innovation in commercial law because they recognize for the first time the possibility of electronic embodied rights systems.

The electronic chattel paper provisions in Revised section 9-105, therefore, may provide a model for revisions of other statutes that apply to paper embodied rights systems, such as UCC Articles 3 and 7, if electronic embodied rights systems gain acceptance in the marketplace. While it is difficult to predict whether electronic embodied rights systems will be used to automate business practices that today still rely on paper embodied rights systems, there are plausible economic justifications that may lead businesses to choose such a route. These economic justifications would result from lower costs associated with reengineering current paper processes to adapt them to electronic formats and lower costs associated with maintaining those electronic processes once they are in place. Businesses may be able to lower the costs of reengineering their current systems to take advantage of new, more efficient electronic processes if fewer changes are required to get from here to there. In other words, reengineering well established, reliable business processes based on embodied rights principles might be less costly if the objective is an electronic embodied rights system. Converting business processes organized to accommodate negotiability into business processes based on accounting records might result in substantially higher reengineering costs to make the switch from paper documents to electronic records. If once established, electronic embodied rights systems can be operated on a fully or nearly fully automated basis, but account-based commercial transaction systems retain high overheads due to the dependence of account-based systems on processes which cannot be automated, then the ongoing maintenance of embodied rights systems would be lower than that of account-based systems. If the technology of account-based systems itself is substantially improved, however, then electronic embodied

54. See E-mail from Doug Tygar to Jane Kaufman Winn (June 20, 1999) on electronic embodied rights systems (on file with author). For a description of a proprietary system that would provide an electronic equivalent of a piece of paper that could be possessed, see the website of eOriginal at <http://www.eoriginal.com>. In 1999, eOriginal, Inc. tested its technology in a pilot with G.E. Capital. See Shu Shin Luh, *Cutting Through the Paper Chase: A Baltimore Company's Software Creates Electronic Original Documents*, WASH. POST, June 28, 1999, at F5. For a more complete description of the "e-original" concept, see the company's website.

rights systems and account-based systems might involve equivalent costs.

Participants in financial markets in which embodied rights assets are traded have made little or no progress in converting the pieces of paper that embody rights to electronic form. Major financial services companies that handle mortgage notes or chattel paper are experiencing tremendous problems in storing and locating individual notes or paper. The lack of progress to date in converting negotiable instruments and documents into electronic formats is probably due in part to the lack of formal legal recognition of electronic negotiable instruments and documents. Given that some of the legal uncertainty could be resolved by converting paper embodied rights systems to account-based systems for tracking ownership by using the provisions of Revised Article 8, it is interesting to note that no chattel paper financiers have yet adopted this solution.⁵⁵ Financial accounting systems perform well when tracking ownership of a fractional share of a fungible mass of assets, such as the number of shares of an outstanding issue of common stock, but are not generally set up to track reliably ownership of both a financial claim and a specific piece of personal or real property, such as chattel paper or negotiable real property mortgage notes. Those accounting systems could be upgraded to provide reliable answers to questions of ownership of specific pieces of personal or real property as well as of fractional shares of fungible assets, but in general that has not yet happened.⁵⁶

The provisions of Revised Article 9 governing electronic chattel paper are narrowly drawn and exclude from their scope other types of assets, such as instruments or documents, where the same legal roadblocks preventing technological innovation exist. The decision was taken in the process of revising Article 9 to avoid backdoor piecemeal reforms of the law of negotiability. Those reforms may take place outside the context of the Article 9 revisions. The recognition of electronic chattel paper in Article 9 has encouraged the

55. UCC section 8-501(a) provides a legal basis for immobilizing negotiable instruments or documents in the hands of a securities intermediary and converting the asset to a securities entitlement.

56. BOLERO (Bill of Lading Electronic Registry Organization) is apparently an example of a system based on the technology for financial accounts that has been adapted to provide answers to questions of ownership of specific pieces of personal property traditionally answered by electronic embodied rights systems. BOLERO is designed to provide electronic documents of title in international trade transactions and receives information about bills of lading through SWIFT, an electronic network for the communication of funds transfer instructions. Information about BOLERO is available at <http://www.bolerold.com>.

Drafting Committee convened by the National Conference of Commissioners on Uniform State Laws to draw up a Uniform Electronic Transactions Act to consider including a similar provision creating an electronic equivalent of a negotiable instrument or document, which may in turn one day influence revisions to the provisions of Uniform Commercial Code Articles 3, 4, or 7 governing negotiable instruments or documents.⁵⁷

CONCLUSION

Although the electronic chattel paper provisions of Revised Article 9 are narrowly drawn and affect only one category of financial transactions, they represent a substantial innovation in the law of electronic commerce. The concept of control of an authoritative copy sets up a framework from which the idea of electronic embodied rights systems may develop in other bodies of law such as negotiable instruments and negotiable documents. The provisions were intended to be technology neutral and to remove existing impediments to innovation in financial markets. It will not be apparent for some time whether chattel paper financiers will take advantage of the option provided by the electronic chattel paper provisions in Article 9 or will choose some other route in making chattel paper financing more efficient.

57. Drafts of UETA are available at <http://www.law.upenn.edu/library/ulc/ulc.htm>. Information about the Uniform Electronic Transaction Act drafting process is posted at the ETA Forum website at <http://www.webcom.com/legaled/ETAForum>.

