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REVISED ARTICLE 2 AND MIXED GOODS/INFORMATION TRANSACTIONS: IMPLICATIONS FOR COURTS

Lee Kissman*

I. INTRODUCTION

For the first time since its widespread enactment by almost every state in the early 1960s,1 and after more than a decade of drafting and debates,2 Uniform Commercial Code Revised Article 2 ("Revised Article 2") has been approved by both the National Conference of Commissioners on Uniform State Laws ("NCCUSL") and the American Law Institute ("ALI").3 The scope provision created significant difficulties for the drafters with respect to whether and to what extent Revised Article 2 should apply to computer information transactions.4 While the scope provision remains unchanged,5

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4. See Ann Lousin, Proposed UCC 2-103 of the 2000 Version of the Revision of Article 2, 54 SMU L. REV. 913, 913 (2001) (indicating that the overriding scope issue of revised Article 2 is the role of computers and computer information).

the Article's definition of "goods" has been revised to exclude "information." Because Article 2 applies to transactions in goods, this revised definition potentially alters the scope of the Article. This change may affect the source of law that will be applied to mixed goods/information transactions, and thus the rights and obligations of parties involved in these transactions.

Part II of this comment will review the background of Revised Article 2 and case law surrounding mixed goods/information transactions. Within the context of modern information technologies, Part II will discuss the revision process and recent changes to the scope of Revised Article 2. Further, Part II will review the two tests that courts currently apply to determine source of law for mixed transactions. Finally, Part II will discuss how courts have thus far addressed source of law and implied warranties in mixed goods/information transactions.

Part IV will analyze the potential effects of excluding information from the scope of Revised Article 2. It will explore the possible ramifications of a court's definition of "information," as well as the application of a source of law test. Part IV will also explore different sources of law that courts may apply to mixed goods/information transactions when Revised Article 2 does not apply. Finally, Part V will recommend an approach that courts should take when applying Revised Article 2 to certain mixed transaction

that organization did not approve it, and thus it was not submitted to ALI for approval. See 2002 Proposed Amendments to U.C.C. Art. 2 § 2-102, supra.

6. Approved Draft Amendments to U.C.C. Art. 2 § 2-103(k) (2003), copyright 2003 by the American Law Institute and the National Conference of Commissioners on Uniform State Laws. Reproduced with permission of the permanent editorial board for the Uniform Commercial Code. All rights reserved [hereinafter 2003 Approved Draft Amendments].

7. See Lousin, supra note 4, at 925 (indicating that the change to the definition of "goods" in the 2000 draft altered the scope of the article). See 2003 Approved Draft Amendments, supra note 6, §§ 2-102, 2-103(k).


9. See infra Part II.
10. See infra Part II.A-C.
11. See infra Part II.D.
12. See infra Part II.E.
13. See infra Part IV.
14. See infra Part IV.A.
15. See infra Part IV.B.
II. BACKGROUND

The drafting, revision, and promulgation of the U.C.C. is a unique process because two organizations, ALI and NCCUSL, share in its management. This partnership has been successful in revising other U.C.C. articles in the past decade. The project to revise Article 2 began in the late 1980s, with the purpose of addressing a number of issues, including the "status of software." Since then, more than seven drafts have been developed, and few other U.C.C. revisions have received as much attention and controversy. To a large extent, one of the main hurdles for the Article 2

16. See infra Part V.
17. See William J. Woodward, Private Legislation in the United States—How the Uniform Commercial Code Becomes Law, 72 TEMP. L. REV. 451, 453 (1999). To date, although approved by ALI at its annual meeting in May 2003, Revised Article 2 is subject to further editing before it is published in its final form. See 2003 Approved Draft Amendments, supra note 6, at "Note." ALI membership approved a tentative draft of Revised Article 2 in 2001 with the understanding that any fundamental changes would require further approval by the membership. See Council Approves Article 2 Amendments, 24 A.L.I. Rptr 5, 1, 3 (2002). At its annual meeting, the ALI membership approved fundamental changes to that amendment, including the new definition of "goods" and the commentary on scope, which will soon be proposed for enactment by the states. See id.; see also National Conference of Commissioners on Uniform State Laws, supra note 3. This approval was foreshadowed by an announcement that the ALI Council, a group of members elected by the ALI to manage the institute's affairs, endorsed Revised Article 2 in December 2002. See February 4 Letter to ALI Members on UCITA, 25 A.L.I. Rptr 2, 3 (2003).
18. See Richard E. Speidel, Revising UCC Article 2: A View From the Trenches, 52 HASTINGS L.J. 607, 610-11 (2001) (indicating that Article 9 was revised and approved by ALI and NCCUSL and enacted by several states with virtually no opposition). Revised Articles 3 and 4 were approved by both organizations in 2002 "without controversy." See Institute Approves Restatement Drafts and Revisions to UCC Articles 3 and 4, 24 A.L.I. Rptr 4, 1 (2002). However, there is a considerable amount of scholarly criticism of the U.C.C. revision process, particularly with respect to Article 2. See Bruce H. Kobayashi & Larry E. Ribstein, Uniformity, Choice of Law and Software Sales, 8 GEO. MASON L. REV. 261, 276-83 (2000); Rusch, supra note 2, at 1688-93 (discussing the influence of interest groups and the problems associated with non-uniform enactment).
21. See Speidel, supra note 19, at 789-90.
22. See Speidel, supra note 18, at 607-11.
revision has been the scope provision. The scope provision debate centers on the questions of how and whether Article 2 should address both "pure" computer information transactions and transactions that involve both goods and information. Stated simply, the question is whether computer information can or should be considered a "good" with respect to the application of Article 2.

A. History of the Revised Article 2 Scope Provision

An early approach adopted to address the issue of the scope of Article 2 and information transactions was a "hub and spoke" configuration. Here, general contract law principles common to both the sale of goods and the licensing of software were to be consolidated in the "hub," while separate "spokes," or chapters, would be devoted to issues unique to each type of transaction. For example, one chapter would include provisions that would apply only to intangible information transactions, while a separate chapter would contain the provisions unique to the sale of goods. However, some argued that this approach was unworkable and could not adequately address the issues unique to each type of transaction. NCCUSL abandoned the "hub and spoke" approach and a committee was appointed to draft a separate U.C.C. Article 2B that would govern information transactions.

While the drafting of Article 2B continued and the Article was later withdrawn from the U.C.C. and promulgated by NCCUSL as the Uniform Computer Information Transaction Act ("UCITA"), the Article 2 drafting process failed to result in an approved draft. Revised Article 2 scope provisions

23. See Lousin, supra note 4, at 913. In addition, the Preface to the July 2000 draft indicates that scope has been a controversial issue facing the drafting committee. See id.
24. See Speidel, supra note 18, at 613-14.
25. See Lousin, supra note 4, at 913 (indicating that the overriding scope issue is the role of computers and computer information).
26. See Rusch, supra note 2, at 1686.
27. See Kinstlick, supra note 20, at 66.
28. See id.; Rusch, supra note 2, at 1686-87 (indicating planned spokes for goods, leases, and possibly software licenses).
29. See Rusch, supra note 2, at 1686; Kinstlick, supra note 20, at 66.
30. See Rusch, supra note 2, at 1686; Kinstlick, supra note 20, at 66.
31. See Article 2B Is Withdrawn from UCC and Will Be Promulgated by NCCUSL as Separate Act, 21 A.L.I. Rpt'R 3, 1, 7 (1999). In 1999, NCCUSL and
went through significant changes and multiple drafts, each draft attempting to formulate a rule that would help determine whether a given information transaction fell under the purview of Revised Article 2.32 Concerns continued over the boundaries of each project, specifically, the delineation between the categories of transactions that involved goods and those that involved computer information.33

ALI announced that Article 2B would not be adopted as part of the U.C.C.; rather, it would be promulgated as UCITA by NCCUSL alone. ALI’s Council of the Institute indicated that it continued to have significant reservations about key substantive provisions and the overall clarity and coherence of Article 2B. See id.

32. See 2001 Annual Meeting Draft of U.C.C. Art. 2 § 2-103 (2001), available at http://www.law.upenn.edu/bl/ulc/ulc_frame.htm; 1999 Annual Meeting Draft of U.C.C. Art. 2 § 2-103 (1999), available at http://www.law.upenn.edu/bl/ulc/ulc_frame.htm; 1997 Annual Meeting Draft of U.C.C. Art. 2 § 2-103 (1997), available at http://www.law.upenn.edu/bl/ulc/ulc_frame.htm; 1996 Annual Meeting Draft of U.C.C. Art. 2 § 2-103 (1996), available at http://www.law.upenn.edu/bl/ulc/ulc_frame.htm. The scope provision of the 1996 draft indicated that Article 2 applied to a transaction in which goods predominate, a claim that goods failed to conform to terms of the contract even if goods did not predominate, and agreements to install or repair goods. See 1996 Annual Meeting Draft of U.C.C. Art. 2 § 2-103, supra. In a mixed transaction, Revised Article 2 applied to the goods portion and Article 2B to the information portion. See id. The scope provision in the 1997 draft indicated that Article 2 applied to the goods aspect of a mixed transaction, as well as the sale of a computer program not specifically developed for a particular transaction if it was embedded in goods other than a computer. See 1997 Annual Meeting Draft of U.C.C. Art. 2 § 2-103, supra. This version appeared to adopt a gravaman approach for mixed transactions, but applied Article 2 to an entire transaction if it involved certain types of embedded goods. See id. The 1999 revision also applied the gravaman approach, and applied Article 2 to the whole transaction if it involved certain embedded goods, but excepted transactions where access to the use of information was the material purpose. See 1999 Annual Meeting Draft of U.C.C. Art. 2 § 2-103, supra. The 2001 revision indicated that Article 2 applied to the goods portion in a mixed transaction, and included a list of factors to weigh when considering the application of the article to a computer program in a mixed or embedded goods transaction. See 2001 Annual Meeting Draft of U.C.C. Art. 2 § 2-103, supra.

33. See Speidel, supra note 19, at 792 (indicating that tension exists as to the line beyond which sale of goods stops and the consumer information transaction begins); Rusch, supra note 2, at 1687 (indicating that disagreements arose about related provisions in UCITA and Article 2 drafts). In addition, some of the drafting committee’s decisions with regard to consumer issues were controversial. See Michael M. Greenfield, The Role of Assent in Article 2 and Article 9, 75 WASH. U. L.Q. 289, 295-96 (1997). Finally, “[t]he differences between UCITA and Revised Article 2 should be understood as having more to do with the differences in views of the members of the two drafting committees than with differences in the character of the goods covered by each statute.” Jean Braucher, When Your Refrigerator Orders Groceries Online and Your Car
In the approved Revised Article 2, NCCUSL and ALI abandoned a decade-long attempt to revise the scope provision. Instead, Revised Article 2 simply redefines the term “goods” by injecting the following statement: “The term does not include information . . . .” The term “information” itself remains undefined, although NCCUSL had proposed but later failed to approve a definition. Now that Revised Article 2 has been approved by both organizations, it will be presented to state legislatures for enactment. A recent ALI article discussed the Revised Article 2 draft prior to ALI’s approval and indicated, “[w]hether and to what extent Article 2 applies to a transaction that includes both goods and information is to be determined from all the facts and circumstances.

B. Emerging Transactions and Scope of Law

The “facts and circumstances” that affect the scope of Revised Article 2 consist of continuously emerging technology
transactions that seem to defy classification in terms of the Article 2 definition of "moveable goods." To a certain extent, our economy has shifted from goods-based transactions to those involving digital information and services. Today, transactions commonly involve the sale or licensing of intangible products, for example, downloadable virus protection software or access to information databases like Westlaw. Transactions also take the form of mixed transactions, which can involve both the sale of goods and the licensing of information, as well as some services. For example, system integration contracts involve software, hardware, documentation, and the services of computer programmers. In addition, embedded goods, a subset of the mixed transaction, are becoming more prevalent. Embedded goods consist of computer hardware or software designed for and embedded in particular devices, such as automobiles, cameras, toys, vending machines, washers and dryers, medical devices, and smoke detectors.

Although the first category of transactions consists of the sale or licensing of only intangible information, many of today's contracts consist of mixed goods/information transactions, including embedded goods transactions, which

40. See Nimmer, supra note 39, at 3.
43. See id.
contain both tangible and intangible components. The Article 2 drafting committee has attempted to resolve the issue of whether and to what extent the article should apply to these types of emerging technologies that do not fit neatly into the categories of “moveable good” or service.

The source of law that applies to any transaction has many important implications for the enforceability of rights under a contract, including warranties and remedies. If state legislatures approve Revised Article 2 without changing the scope provision or goods definition, courts dealing with these emerging technologies will face conflicting legislation with regard to source of law. Even though courts are directed not to apply Revised Article 2 to a transaction that involves information, they are directed to apply it to a transaction that involves moveable goods. Although it is not necessarily clear what law should apply to transactions that consist solely of information, the law to apply becomes even less clear when the transaction is mixed or involves embedded goods. The Article 2 drafting committee has struggled with this source of law issue, and has attempted to formulate a rule that categorizes these emerging technologies. Revised Article 2 indicates that the rule will essentially be: exclude information.

47. See Anecki, supra note 44, at 397.
48. See Speidel, supra note 19, at 792 (discussing the struggle between UCITA and Article 2 drafting committees regarding where to draw the line between goods and information); Speidel, supra note 18, at 613-14; Anecki, supra note 44, at 412-13 (discussing the 1997 scope provision and its approach to mixed information transactions and embedded goods).
49. See NIMMER, supra note 8.
50. See Lousin, supra note 4, at 915-16 (discussing source of law issues for the 2000 Article 2 amendment).
51. See 2003 Approved Draft Amendments, supra note 6, §§ 2-102, 2-103(k).
53. See Advent Sys. Ltd. v. Unisys Corp., 925 F.2d 670, 674 (3d Cir. 1991) (indicating that software is an elusive concept and holding that it is a “good” within the definition of U.C.C.).
54. See Lousin, supra note 4, at 913. Attempts to formulate a rule can be seen in the numerous drafts of the scope provision. Each draft formulates a rule to determine if a mixed transaction or embedded goods should fall under the purview of Article 2. See discussion supra note 32.
55. See 2003 Approved Draft Amendments, supra note 6, § 2-103(k).
C. What Is "Information?"

Because Revised Article 2 indicates that it does not apply to "information," a court faced with a dispute that potentially falls under the purview of Revised Article 2 will first have to determine if a transaction actually involves "information," a term left undefined in Revised Article 2. Several relevant sources define "information." For example, the drafting committee proposed a definition, and although it was not approved, a court may look to this definition for guidance. Under this proposed definition, if a mixed transaction involves software or embedded software contained in a good, it is likely excluded from Article 2.

A court may also look to UCITA. UCITA provides a set of default rules for the licensing of computer information and software, and is intended to govern transactions involving computer information. Such transactions include computer programs, Internet and database access, as well as data processing contracts. UCITA defines information as "data, text, images, sounds, mask works, or computer programs,

56. See Lousin, supra note 4, at 913 (indicating that only when the scope of a statute is determined may the terms and basic principles of the statute be defined).

57. "Computer information means information in electronic form which is obtained from or through the use of a computer or which is in a form capable of being processed by a computer." 2002 Proposed Amendments to U.C.C. Art. 2, supra note 5, § 2-103(b). Webster's Dictionary provides limited assistance, defining information as "knowledge communicated by others or obtained from investigation, study, or instruction ...." WEBSTER'S 3D NEW INT'L DICTIONARY OF THE ENGLISH LANGUAGE UNABRIDGED 1160 (1993). Black's Law Dictionary is less helpful, defining "information" as it is typically used in the legal context, as "a formal criminal charge made by a prosecutor without a grand-jury indictment." BLACK'S LAW DICTIONARY 783 (7th ed. 1999).

58. "Information means data, text, images, sounds, mask works, computer programs, software, databases, or the like, including collections and compilations. The term includes computer information." 2002 Proposed Amendments to U.C.C. Art. 2, supra note 5, § 2-103(m). "Computer information means information in electronic form which is obtained from or through the use of a computer or which is in a form capable of being processed by a computer." Id. § 2-103(b).

59. "Information means ... software ..." Id. § 2-103(m).

60. UCITA was promulgated by NCCUSL in 1999 and to date has been enacted in Maryland and Virginia. See Md. CODE ANN., COM. LAW II § 22-101 (2001); Va. CODE ANN. § 59.1-501.1 (Michie 2001); Rhone-Poulenc Agro, S.A. v. DeKalb Genetics Corp., 284 F.3d 1323, 1331 n.4 (Fed. Cir. 2002).


62. See id. § 103 cmt. 2(b), (c), (e).
including collections and compilations of them.\textsuperscript{63}

Regardless of the definition a court uses, if it finds that a transaction involves information, it is instructed not to apply Revised Article 2.\textsuperscript{64} However, difficulties arise when a transaction consists of both goods and information.\textsuperscript{65}

\textbf{D. A Tale of Two Tests}

Courts face an analogous dilemma when dealing with mixed transactions that involve goods and services.\textsuperscript{66} To determine the source of law that applies to these mixed transactions, courts have developed different tests.\textsuperscript{67} Most courts apply the predominant purpose test to determine whether services or goods are the predominant purpose of the transaction.\textsuperscript{68} Where the sale of goods is the dominant purpose and labor is incidentally involved, the predominant purpose test holds that Article 2 will apply to the entire transaction.\textsuperscript{69} Conversely, a few courts have applied the gravaman test.\textsuperscript{70} Under this test, a court first determines

\begin{itemize}
  \item 63. \textit{Id.} § 102(a)(35).
  \item 64. \textit{See} 2003 Approved Draft Amendments, \textit{supra} note 6, §§ 2-102, 2-103(k).
  \item 65. \textit{See} Micro Data Base Sys., Inc. v. Dharma Sys., Inc., 148 F.3d 649, 655 (7th Cir. 1998) (discussing whether custom software should be considered a mixed transaction or a sale of goods). The Revised Article 2 drafting committee's struggle with this issue is reflected in the numerous attempts to formulate a rule to address mixed transactions with respect to scope. \textit{See discussion supra} note 32.
  \item 68. \textit{See} Insul-Mark Midwest, Inc. v. Modern Materials, Inc., 612 N.E.2d 550, 553-54 (Ind. 1993); Lousin, \textit{supra} note 4, at 915.
  \item 69. \textit{See} 1 WILLIAM D. HAWKLAND, \textit{UNIFORM COMMERCIAL CODE SERIES} § 2-102:4 (2001); Bonebrake v. Cox, 499 F.2d 951, 960 (8th Cir. 1974).
  \item 70. \textit{See} Data Processing Serv., Inc., 492 N.E.2d at 318; Skelton v. Druid City Hosp. Bd., 459 So. 2d 818, 821-22 (Ala. 1984); Charles E. Cantu, \textit{A New Look at an Old Conundrum: The Determinative Test for the Hybrid Sales/Service Transaction Under Section 402A of the Restatement (Second) of Torts}, 45 ARK. L. REV. 913, 934 (1993) (indicating that a number of courts have adopted the gravamen test in situations that involved the U.C.C.). \textit{Anthony Pools} is often cited as an example of the gravaman approach. \textit{See} HAWKLAND, \textit{supra} note 69, § 2-102:4 n.10; Cantu, \textit{supra}. A closer look at the holding in \textit{Anthony Pools} reveals that the court adopted the test under limited circumstances, specifically when monetary loss or personal injury is alleged to have resulted from a defect in consumer goods. \textit{See Anthony Pools}, 455 A.2d at 441.
\end{itemize}
whether the dispute centers on the goods or the services aspect of a mixed transaction, and if the claim pertains to the goods, then Article 2 applies.\textsuperscript{71} Eminent U.C.C. scholar, William D. Hawkland indicates that “unless uniformity would be impaired,” it may be easier to use the gravaman test in mixed transactions.\textsuperscript{72}

Although most courts have adopted the predominant purpose test, UCITA applies a gravaman approach to mixed transactions that involve goods and information.\textsuperscript{73} Some authors indicate that this approach is more reasonable for information transactions, and that the predominant purpose test renders awkward results when applied to information transactions.\textsuperscript{74} On the other hand, because emerging technologies have become increasingly intertwined, some authors point out that it is becoming increasingly difficult to draw a clear distinction between embedded and non-embedded software, even for computer scientists.\textsuperscript{75} The drafting committee proposed revised comments to the scope provision of Revised Article 2 that indicated the Article neither endorsed nor rejected either test.\textsuperscript{76} NCCUSL did not approve these revised comments and the scope provision remains largely unchanged.\textsuperscript{77} In fact, some authors have suggested that the preservation of the scope provision phrase “transactions in goods” indicates that the drafting committee intended to ensure that case law interpreting that phrase

\begin{itemize}
  \item \textsuperscript{71} See \textit{In re Trailer \\ & Plumbing Supplies}, 578 A.2d 343, 345 (N.H. 1990). The court in this case indicated that it might consider applying the gravaman test in a future case under appropriate circumstances. See \textit{id}.
  \item \textsuperscript{72} See HAWKLAND, supra note 69, § 2-102.4. The Seventh Circuit has indicated a willingness to apply the gravaman test if a dispute is clearly assignable to either the goods or services aspect. See Micro Data Base Sys., Inc. v. Dharma Sys., Inc., 148 F.3d 649, 654-55 (7th Cir. 1998).
  \item \textsuperscript{73} See Uniform Computer Information Transactions Act (UCITA) § 103(b)(1) (2002); Lousin, supra note 4, at 916.
  \item \textsuperscript{74} See Lorin Brennan, \textit{Why Article 2 Cannot Apply to Software Transactions}, 38 DUQ. L. REV. 459, 540 (2000).
  \item \textsuperscript{75} See Charles Shafer, \textit{Scope of UCITA: Who and What Are Affected?}, in \textit{UNIFORM COMPUTER INFORMATION TRANSACTION ACT: A BROAD PERSPECTIVE} (Stephen Y. Chow et al., co-chairs, 2001); Philip Koopman & Cem Kaner, \textit{The Problem of Embedded Software in UCITA and Drafts of Revised Article 2} (pt. 1), 43 UCC BULLETIN, Release 1, 1, 2 (2001). Previous drafts of Article 2 attempted to draw a distinction between software embedded in goods subject to Article 2 and non-embedded software subject to UCITA. See \textit{id} at Release 2, 1, 6.
  \item \textsuperscript{76} See 2002 Proposed Amendments, supra note 5, § 2-102 cmt. 2.
  \item \textsuperscript{77} See 2003 Approved Draft Amendments, supra note 6, § 2-102.
\end{itemize}
remains intact, and therefore, a court should apply the test it has already adopted. However, there appears to be growing support for the conclusion that a gravaman test is more appropriate in mixed goods/information transactions.

If the court uses the gravaman approach, then it will apply Revised Article 2 to the goods portion of a transaction, and non-Article 2 law to the information portion. If the court uses the predominant purpose test and determines that the main purpose of the transaction is goods, then it will apply Revised Article 2. Similarly, if the main purpose of the transaction is information, then a court will apply non-Article 2 law. Therefore, just as the definition of "information" can determine the applicable law, the mixed transaction test that a court decides to apply can also have a significant impact on the source of law that will govern a transaction, and thus the contractual rights of the parties.

E. The Current State of Information Transaction Codes and Case Law: Source of Law and Warranties

As discussed above, regardless of the definition or the test that is applied, courts are now instructed not to apply Revised Article 2 to transactions that consist solely of information and mixed transactions where information is the predominant purpose or the gravaman of the action. This instruction may indicate a departure from, or perhaps a clarification of, the approach of current case law, which has been described as "garbled" with respect to whether or not computer information falls within the definition of goods and the purview of Article 2.

Some authors have indicated that disputes involving software development contracts are "roughly equally divided"

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78. See Lousin, supra note 4, at 916.
79. See Brennan, supra note 74, at 540. UCITA and prior drafts of Article 2 appear to adopt a gravaman-type approach. See Uniform Computer Information Transactions Act (UCITA) § 103(b)(1) (2002); 1997 Annual Meeting Draft of U.C.C. Art. 2, supra note 32, § 2-103; Cantu, supra note 70, at 935 (advocating for a gravaman approach for products liability disputes).
80. See HAWKLAND, supra note 69, § 2-102:4.
81. See id.
82. See id.
83. See NIMMER, supra note 8, § 9:2.
84. See 2003 Approved Draft Amendments, supra note 6, §§ 2-102 cmt. 2, 2-103(k).
85. See Lousin, supra note 4, at 917-18.
as to whether the transaction involves goods or services.\textsuperscript{86} Others assert that the current trend in case law is toward the application of intellectual property principles rather than U.C.C. provisions.\textsuperscript{87} Computer information cases have thus far typically involved the sale or licensing of software, and many courts treat software as a good, especially when it is sold as prepackaged software.\textsuperscript{88} Other courts have indicated that software disputes are best categorized as a service, typically when the dispute does not involve warranty claims under Article 2.\textsuperscript{89} This conflicting result may indicate that one underlying debate with regard to source of law involves implied warranties, and specifically, which warranties, if any, should apply to information transactions.\textsuperscript{90}

1. \textit{UCITA}

For the two jurisdictions that have adopted UCITA, the courts have a complete and new body of uniform law to apply to an information transaction.\textsuperscript{91} Modeled after the U.C.C., this body of law provides express and implied warranties for information transactions.\textsuperscript{92} UCITA has undergone amendments almost annually since it was promulgated in 1999.\textsuperscript{93} It currently provides several relevant definitions, including “computer information,” “computer information transaction,” and “information.”\textsuperscript{94} Like Revised Article 2, the UCITA definition of “goods” includes all things moveable, and excludes computer information.\textsuperscript{95} The UCITA scope provision currently indicates that if the transaction is mixed, UCITA

\textsuperscript{86} See Nimmer, \textit{supra} note 39, at 35.
\textsuperscript{87} Specht v. Netscape Communications Corp., 306 F.3d 17, 29 n.13 (2d Cir. 2002).
\textsuperscript{88} See Advent Sys. Ltd. v. Unisys Corp., 925 F.2d 670, 674-76 (3d Cir. 1991); NIMMER, \textit{supra} note 8, § 6:4.
\textsuperscript{89} See NIMMER, \textit{supra} note 8, § 6:4.
\textsuperscript{90} See id.
\textsuperscript{92} See U.C.I.T.A. §§ 402-05 (2002).
\textsuperscript{94} U.C.I.T.A. § 102(10), (11), (35) (2002).
\textsuperscript{95} Id. § 102(33).
applies to the part of the transaction that involves computer information. If the transaction involves a computer program contained in goods, such as embedded goods, UCITA applies to the computer program. In all other cases, UCITA applies to the entire transaction if information is the primary subject matter.

With respect to warranties, UCITA includes numerous implied warranties and provides for disclaimer of implied warranties. Of the few cases that have acknowledged UCITA, none have directly applied it, though a few have indicated that UCITA provided support for a holding based on other sources of law. Therefore, there is little case law to provide guidance for the courts or the parties as to how UCITA warranties are to be applied. Although controversy


98. See id. § 103(b)(3). In addition, UCITA categorically excludes an enumerated list of transactions from its purview, including financial services and some motion picture transactions. See id. § 103(d)(1), (d)(3)(A).

99. See id. §§ 403-06. Although one UCITA warranty is titled “Implied Warranty: Merchantability of Computer Program,” the language of all the UCITA implied warranties differs significantly from UCC warranties. See id.; U.C.C. §§ 2-314, 2-315 (1995).


101. None of the disputes that mention UCITA involved an implied warranty claim. See Specht, 306 F.3d at 20; Rhone-Poulenc Agro, S.A., 284 F.3d at 1325; i.Lan Sys., Inc., 183 F. Supp. 2d at 330; AGT Int'l, Inc., 2002 WL 31409879, at *3; Kloeck, 104 F. Supp. 2d at 1334; M.A. Mortenson Co., 998 P.2d at 307. In addition, the language of UCITA warranties, though modeled after the UCC, is
continues to surround UCITA, it does provide a framework of default express and implied warranties a court can apply, as well as a scope provision to determine source of law for mixed information transactions.

2. Article 2, Direct or Indirect Application

Courts have applied Article 2 to information transactions, either directly or indirectly. Some courts have found that Article 2 directly applies when software is sold in the form of a disk or other tangible and moveable medium. The Seventh Circuit indicated that the weight of authority holds that the sale of custom software is to be categorized as a good, and applied Article 2. The court further indicated that even if the sale of software also includes the service of customizing the software, it should not be considered a mixed transaction, in the same way that the sale of a car is not a mixed transaction simply because its invoice indicates a charge for the car separate from the labor charge for customizing the car.


102. See Cem Kaner, Software Engineering and UCITA, 18 J. MARSHALL J. COMPUTER & INFO. L. 435, 437-43 (2000) (noting that critics of UCITA include twenty-four attorneys general, the American Intellectual Property Association, and the Software Engineering Institute). In addition, three states have adopted anti-UCITA legislation. See IOWA CODE § 554D.104(4) (2002); N.C. GEN. STAT. § 66-329 (2002); W. VA. CODE § 55-8-15 (2002); see also discussion supra note 91. Finally, Michael Traynor, President of ALI has indicated that the "enactment of UCITA, as it now stands, would not be a beneficial development for the law." See February 4 Letter to ALI Members on UCITA, supra note 17.


104. See Advent Sys. Ltd. v. Unisys Corp., 925 F.2d 670, 676 (3d Cir. 1991) (indicating strong policy arguments in favor of including software in the U.C.C.); i.LAN Sys., Inc., 183 F. Supp. 2d at 332 (indicating that although Article 2 did not technically apply to software licenses, it best fulfills parties' expectations); Braucher, supra note 33, at 247 (indicating that when courts apply Article 2 to software transactions, they often do not state whether they are applying the article directly or indirectly by analogy).


106. See Micro Data Base Sys., Inc. v. Dharma Sys., Inc., 148 F.3d 649, 654 (7th Cir. 1998).

107. See id. at 655 (indicating that labor is a service that is included in every manufactured good). But see Pearl Invs., L.L.C. v. Standard I/O, Inc., 257 F. Supp. 2d 326, 353 (D. Me. 2003) (indicating that a contract for the "development of a software system from scratch primarily constitutes a service" and Article 2
Other courts have found that the term "goods" within Article 2 has an extensive meaning and should be interpreted flexibly, because strong policy arguments favor the inclusion of software in the U.C.C. In addition, some courts have found that Article 2 applies simply because the parties have so stipulated. Acknowledging that Article 2 may not technically govern software licenses, one court has nonetheless applied it, essentially by analogy, because it best fulfills the parties' reasonable expectations. Once a court finds that a transaction falls within the purview of Article 2, it can then look to the familiar warranties of Article 2, as well as abundant Article 2 warranty case law for guidance in its application.

3. Common Law

a. Common Law of Contract

When a court finds that UCITA and Article 2 do not apply to an information transaction, and the dispute is not governed by intellectual property law, it is left with unwieldy common law concepts of obligation and warranties. Some authors indicate that a lack of organized, coherent contract principles is one reason courts use U.C.C. concepts by analogy in many cases that do not involve goods, including cases involving service contracts.

Some courts have applied the common law of contracts to
disputes involving information and mixed information transactions, and found that common law provides no warranties unless the parties expressly agree.\footnote{114. See Triple Point Tech., Inc. v. D.N.L. Risk Mgmt., Inc., No. CIV.A.99-4888WHW, 2000 WL 1236227, at *8 (D.N.J. 2000); Fink v. DeClassis, 745 F. Supp. 509, 516 (N.D. Ill. 1990).} One court found that a cable company provides only a service by merely transmitting information, and declined to imply any warranties when the plaintiff alleged service disruptions.\footnote{115. See Kaplan v. Cablevision of Pa., Inc., 671 A.2d 716, 724-25 (Pa. 1996).} Other courts have found that common law provides no authority for implying warranties in business acquisitions that predominantly involve intangible assets,\footnote{116. See Fink, 745 F. Supp. at 516.} in mixed transactions that predominantly transfer patents,\footnote{117. See Novamedix, Ltd. v. NDM Acquisition Corp., 166 F.3d 1177, 1183 (Fed. Cir. 1999).} or in sales of computer program codes.\footnote{118. See Triple Point Tech., Inc., 2000 WL 1236227, at *8.} Outside of Article 2, no common law rules establish an implied warranty for a product or an end result.\footnote{119. See supra note 39, at 45, 48.}

\textit{b. Common Law of Tort}

Restatement (Torts) Section 299A provides a type of service obligation, essentially a warranty that focuses on performance of a contract.\footnote{120. See RESTATEMENT (SECOND) OF TORTS § 299A (1965).} If a person undertakes to render services in the practice of a profession, that person is required to exercise the skill normally possessed by members of that profession.\footnote{121. See id. at 45, 48.} This service obligation does not require a specific end result; instead it focuses on performance.\footnote{122. See id. at 45, 48.} This obligation is consistent with a Williston comment, which indicates that there is a promise in every service contract that the "work will be rendered with reasonable care."\footnote{123. See id. at 45.} Whether grounded in tort or contract common law, this obligation applies to service contracts and imposes a standard only on the performance of the contract, not on the end product.\footnote{124. See id. at 45, 48. This comment does not examine the complex issue of the division between tort and contract law. It is sufficient to note that similar obligations to perform service with reasonable care may be grounded in either tort or contract law. See id. at 48, 50 n.179.}
Service obligations rarely require a certain result, perhaps because many of those who provide services deal with factors beyond their control.\textsuperscript{125} A few courts have applied a tort standard of care in early software disputes.\textsuperscript{126} After applying the gravaman test to bifurcate its analysis of a mixed software and hardware transaction, the court in \textit{Data Processing Services, Inc. v. L.H. Smith Oil Corp.} held that computer programmers "hold themselves out to the world as possessing skill and qualifications in their respective trades or professions [and] impliedly represent they possess the skill and will exhibit the diligence ordinarily possessed by well informed members of the trade or profession."\textsuperscript{127} This case represents an early and very brief trend in which courts applied a computer malpractice standard, essentially an elevated duty of care.\textsuperscript{128} Other courts have applied a traditional negligence standard to information disputes, and have indicated that every service contract contains an implied promise that the work will be rendered with reasonable care.\textsuperscript{129} The courts quickly rejected the application of a reasonable or elevated standard of care in commercial information transactions and began to favor breach of warranty and other contract breach claims.\textsuperscript{130} In a recent dispute involving allegations of defective software, a negligence liability claim failed to survive a demurrer; however, claims asserting U.C.C. implied warranties of merchantability and fitness for particular purpose survived the demurrer with little discussion.\textsuperscript{131} Courts may have rejected the tort standard of care approach because they viewed the U.C.C. as flexible enough to encompass software

\begin{itemize}
\item 130. \textit{See} Ballman, \textit{supra} note 44, at 426.
\end{itemize}
transaction disputes.\textsuperscript{132}

At least one author asserts that some courts may apply a "reasonable person" standard to the software industry, but acknowledges two significant hurdles.\textsuperscript{133} First, the economic loss doctrine prohibits tort recovery when a product damages only itself, and does not cause personal injury or other property damage.\textsuperscript{134} The second hurdle is the general unwillingness of courts to impose a higher duty of care on software professionals,\textsuperscript{135} possibly because the software profession does not satisfy the recognized factors that characterize a profession to which a higher standard typically applies.\textsuperscript{136}

c. Common Law of Property

At first glance, property law may not appear to offer much in the way of guidance for warranties in commercial information transactions.\textsuperscript{137} However, many information transaction disputes involve intellectual property law.\textsuperscript{138} In addition, real property transactions typically involve a bundle of rights, and courts have imposed quality standards for specific rights within a property transaction.\textsuperscript{139} For example, title warranties may be imposed even though no implied warranties apply to the physical state of the property.\textsuperscript{140} Information transactions involve similar multiple, and even

\textsuperscript{132} See id.
\textsuperscript{133} See id. at 457.
\textsuperscript{134} See Seely v. White Motor Co., 403 P.2d 145, 151 (Cal. 1965). Thus, because software claims likely do not involve damages for personal injury, the economic loss doctrine would bar many of these claims. "Some categories of loss, including those often referred to as 'pure economic loss,' are more appropriately assigned to contract law and the remedies set forth in Articles 2 and 2A of the Uniform Commercial Code." \textsc{Restatement (Third) Prod. Liab.} § 21 cmt. a (1997). In fact, some economic loss has traditionally been excluded from tort law even when no contractual remedy is available. See id.
\textsuperscript{135} See Ballman, \textit{supra} note 44, at 457.
\textsuperscript{136} See \textit{Hosp. Computer Sys., Inc.} v. Staten Island Hosp., 788 F. Supp. 1351, 1361 (D.N.J. 1992) (listing factors such as "extensive formal training . . . admission to practice by a qualifying licensure, a code of ethics . . . a system for discipline . . . and, notably an obligation on its members, even in non-professional matters, to conduct themselves as members of a learned, disciplined, and honorable occupation").
\textsuperscript{138} See Brennan, \textit{supra} note 74, at 542.
\textsuperscript{140} See id.
Although the law of personal property sales began to develop implied warranties around the nineteenth century, warranties in real property law have begun to develop only in the last few decades.\textsuperscript{142} The rule of caveat emptor has protected sellers from liability since the 1500s by imposing all risks of defects in real property on the buyer.\textsuperscript{143} However, with respect to residential property transactions, courts have recently limited this doctrine by implying warranties of marketable title, habitability, and workmanship.\textsuperscript{144} Courts began to impose these warranties when they recognized and accepted that circumstances and expectations in modern industrialized society had changed.\textsuperscript{145} For example, the court in \textit{Melody Home Manufacturing Co. v. Barnes} pointed to several policy reasons for imposing implied warranties on contracts to repair property,\textsuperscript{146} including a public interest in protecting consumers from inferior service, and the fact that a consumer of complicated services is "unable to independently determine quality and must depend on the experience, skill, and expertise of the service provider."\textsuperscript{147}

At least one court has addressed a party's claim that an implied warranty analogous to property warranties should apply to a transaction involving trademarks, logos, and licensing agreements.\textsuperscript{148} However, because there was no authority in common law, the court declined to extend property warranties to transactions involving intangibles.\textsuperscript{149}

In addition, some courts have developed disclosure duties, which impose a duty on sellers of residential property to disclose known latent material defects.\textsuperscript{150} Because a large percentage of defects in mass-market software are known and intentionally left unfixed, some authors have asserted that

\begin{footnotesize}
\begin{enumerate}
\item[141.] See Nimmer, supra note 39, at 39-41 (noting that information rights are often conditional and circumscribed, but are not limited to physical possession).
\item[142.] Dallon, supra note 139, at 402-05.
\item[143.] \textit{Id.} at 401.
\item[144.] \textit{Id.} at 405-08.
\item[146.] 741 S.W.2d 349, 353 (Tex. 1987).
\item[147.] \textit{Id.}
\item[149.] See \textit{id.}
\item[150.] See Dallon, supra note 139, at 409-10.
\end{enumerate}
\end{footnotesize}
software companies should be required to disclose known defects in software to consumers.\textsuperscript{151} They argue that although software may be inherently imperfect, software developers could be held accountable for known flaws through a duty to disclose.\textsuperscript{152}

III. IDENTIFICATION OF THE LEGAL PROBLEM

Modern commercial transactions increasingly consist of emerging technologies that include both goods and information.\textsuperscript{153} Courts struggle with legal classifications and definitions that are difficult to apply to these new technologies.\textsuperscript{154} This produces uncertainty as to the source of law for some information transactions.\textsuperscript{155} The Article 2 drafting committee attempted to address the status of these new technologies,\textsuperscript{156} and Revised Article 2 now directs courts to exclude information from its scope.\textsuperscript{157} However, Revised Article 2 does not provide a definition for "information" or any clear rule that would assist the court in determining when a transaction includes "information."\textsuperscript{158}

Although many aspects of commercial law may change as a result of the revisions to Article 2, one of the most important aspects is the exclusion of information from the purview of Article 2.\textsuperscript{159} The Article's scope determines the source of law and the resulting rights and obligations of parties to commercial transactions, including the availability

\begin{itemize}
    \item \textsuperscript{151} See Kaner, supra note 102, at 454-56.
    \item \textsuperscript{152} See id.
    \item \textsuperscript{153} See Anecki, supra note 44, at 397; Ballman, supra note 44, at 436-37.
    \item \textsuperscript{154} See Nimmer, supra note 39, at 6.
    \item \textsuperscript{155} See Nimmer, supra note 39, at 43; Advent Sys. Ltd. v. Unisys Corp., 925 F.2d 670, 674-75 (3d Cir. 1991) (indicating that software is an elusive concept and holding that it is a "good" within the definition of U.C.C.); i.LAN Sys., Inc. v. Netscout Serv. Level Corp., 183 F. Supp. 2d 328, 332 (D. Mass. 2002).
    \item \textsuperscript{156} See Kinstlick, supra note 20.
    \item \textsuperscript{157} See 2003 Approved Draft Amendments, supra note 6, § 2-103(k).
    \item \textsuperscript{158} Compare 2003 Approved Draft Amendments, supra note 6, § 2-103(k), with 2002 Proposed Amendments, supra note 5, § 2-103(m). In his discussion regarding whether UCITA, Article 2 by analogy, or "judicial common-law creativity" should apply to computer information transactions, ALI President, Michael Traynor, indicated that "the ALI is investigating the possibility of a project about how courts should apply the principles of contract law to transactions in smart goods and information." See February 4 Letter to ALI Members on UCITA, supra note 17, at 3.
    \item \textsuperscript{159} See 2003 Approved Draft Amendments, supra note 6, § 2-103(k).
\end{itemize}
of implied warranties. Among these challenges are the unknown effects of the revised scope of Article 2 within the context of information transaction disputes. Predicting how a court will determine the source of law for mixed goods/information transactions presents additional challenges. Finally, if Article 2 no longer applies to a mixed goods/information transaction, parties to a dispute will need to know which, if any, implied warranties are available at common law.

IV. ANALYSIS

A. Two Threshold Questions for Source of Law

1. "Information"

If a state adopts the revised definition of "goods," its courts will face two important threshold issues in information transaction disputes. First, a court must decide how to define "information." The proposed Article 2 definition of "information" was similar to that of UCITA, but it is significant that NCCUSL did not approve this definition. A court could find that NCCUSL's decision not to adopt this definition, where it has so done with UCITA, indicates that this definition is not to be used when Revised Article 2 potentially applies. Because the courts are left to determine this definition with no guidance from Revised Article 2, greater uncertainty as to the source of law and less

160. See Nimmer, supra note 8.
161. See 2003 Approved Draft Amendments, supra note 6, § 2-103(k).
162. See id.
163. See id.
165. See 2003 Approved Draft Amendments, supra note 6, § 2-103(k).
166. See id.
167. Compare 2002 Proposed Amendments, supra note 5, § 2-103(m), with U.C.I.T.A. § 102(35) (2002). NCCUSL did not incorporate this definition into the final draft that it submitted to ALI for approval. U.C.C. § 2-103 (Approved Amendments by NCCUSL 2002) (on file with author). It may also be significant if the court is in a jurisdiction that has adopted anti-UCITA legislation. See discussion supra note 91.
uniformity among the states may result. On the other hand, it is likely a court will rely on previous cases, and employ a fact-based comparison to determine if the transaction in question involves information, which may enhance certainty for parties to a dispute.

Courts faced with a dispute involving software have substantial case law to look to for guidance. However, emerging technologies, which have little case precedent, may be difficult to categorize as software, information, or moveable goods. There is no definition of information in Revised Article 2, and arguably no practical division between embedded and non-embedded information. Without case law or statutory guidance beyond the directive to exclude information, courts will soon have considerably broad discretion of interpretation. Revised Article 2 essentially transfers the task of developing new definitions and tests to determine whether a transaction is to be categorized as information out of the hands of uniform code drafters and into the hands of the courts. After ten years and seven drafts, the drafting committee has been unable to successfully codify a clear test to determine whether the scope of Revised Article 2 would extend to certain information transactions.

169. See 2003 Approved Draft Amendments, supra note 6, § 2-103(k); see also February 4 Letter to ALI Members on UCITA, supra note 17, at 3.
172. See generally Nimmer, supra note 39, at 38-43.
173. See Shafer, supra note 75; Koopman & Kaner, supra note 75.
174. See 2003 Approved Draft Amendments, supra note 6, § 2-103(k); see also February 4 Letter to ALI Members on UCITA, supra note 17, at 3.
175. See Speidel, supra note 18, at 608 (noting the potential tension in the partnership between ALI and NCCUSL and indicating that "[a] common method of resolving these disagreements is to . . . leave it to the courts").
176. See Speidel, supra note 19, at 789-91; Lousin, supra note 4. On the other hand, some authors indicate that the decision to address computer software outside of Article 2 has reduced the need to revise Article 2. See
Nevertheless, the courts are now expected to take up this daunting challenge.\footnote{Maggs, supra note 37, at 598.}

2. Predominant Purpose v. Gravaman Test

When a court finds that a transaction includes information, as it has defined it, as well as moveable goods, the court then faces either a mixed transaction or an embedded goods transaction.\footnote{See Speidel, supra note 18, at 608.} Here, a second, and familiar, threshold issue is whether to use the predominant purpose or gravaman of the action test to determine source of law for mixed information transactions.\footnote{See Micro Data Base Sys., Inc. v. Dharma Sys., Inc., 148 F.3d 649, 654 (7th Cir. 1998).} The gravaman test has never received the status or attention that the predominant test has received.\footnote{See id. at 654-55; Yorke v. B.F. Goodrich Co., 474 N.E.2d 20, 22 (Ill. App. Ct. 1985); Insul-Mark Midwest, Inc. v. Modern Materials, Inc., 612 N.E.2d 550, 553-55 (Ind. 1993); Anthony Pools v. Sheehan, 455 A.2d 434, 438-40 (Md. 1983).} The gravaman test is often referred to as the minority test, or viewed as a secondary test to be used when a dispute is conveniently and easily divisible.\footnote{See Lousin, supra note 4, at 916.}

Because many transactions are not so easily divisible, some courts have indicated that the gravaman’s bifurcated analysis is unworkable where components of a transaction are intertwined.\footnote{See Insul-Mark Midwest, Inc., 612 N.E.2d at 554-55; Micro Data Base Sys., Inc., 148 F.3d at 654.} In addition, some courts have expressed an unwillingness to apply the gravaman test in cases where the dispute involves overarching issues that apply to the whole transaction and cannot be partially applied, such as statute of frauds or statute of limitations.\footnote{See Insul-Mark Midwest, Inc., 612 N.E.2d at 554-55.} Either the contract is valid under the statute of frauds or it is not; parties would not expect the sale of the tangible portions of a washing machine to be an enforceable transaction, while the licensing of the software inside the machine to be invalid and unenforceable.\footnote{See De Filippo v. Ford Motor Co., 516 F.2d 1313, 1323 (3d Cir. 1975); Advent Sys. Ltd. v. Unisys Corp., 925 F.2d 670, 676 (3d Cir. 1991).} Further, when an information dispute involves a defect, the gravaman test as applied to emerging
technologies would arguably render some disputes a battle of the experts. Courts would take on the task of determining if the alleged defect was located in the lines of software code or in the hardware or in some other tangible portion of the product. Courts may have adopted the predominant purpose test because they found that it best meets the parties’ expectations, can be flexibly applied to new situations and evolving transactions, and is simply an easier tool for indivisible transactions.

Despite these potential hurdles, the gravaman approach has received more attention recently. Its adoption into UCITA is somewhat surprising, given that so few jurisdictions have applied the test, let alone accepted it as the general rule. The drafting committee for Article 2 appeared to apply the gravaman test in many of the previous drafts of the scope provision, but the approved Revised Article 2 remains silent on the issue.

As with the definition of “information,” Revised Article 2 leaves this issue to the courts. The scope provision of Revised Article 2 remains silent and its unmodified language appears to preserve the common law rules as to the

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185. See Koopman & Kaner, supra note 75, at Release 3, 1, 4-5 (describing examples of embedded and non-embedded software and indicating that circumstances surrounding some information transactions creates confusion because more technical facts become relevant when determining if software is embedded or not).

186. See id. at Release 1, 1, 3 (indicating that a designer could change the design of an information product to ensure that it falls under a particular source of law).


188. See Brennan, supra note 74.

189. Even in cases where the test is applied, courts often apply it in very limited circumstances. See Anthony Pools, 455 A.2d at 441 (indicating that it would apply the gravaman test when injury results from consumer goods even though services predominate); In re Trailer & Plumbing Supplies, 578 A.2d 343, 345 (N.H. 1990) (applying the predominate purpose test and indicating it may consider the gravaman test in future disputes).

190. See 2003 Approved Draft Amendments, supra note 6, § 2-102. A proposed comment that was not approved by NCCUSL addressed this issue but remained neutral as to which test a court should apply. See 2002 Proposed Amendments to U.C.C. Art. 2, supra note 5, § 2-102 cmt. 2. In addition, the current Article 2 is silent on this issue. See U.C.C. § 2-102 (1995).

191. See 2003 Approved Draft Amendments, supra note 6, § 2-103(k) (indicating, in a preliminary official comment, that it is “up to the courts” to decide whether or to what extent Revised Article 2 applies to a transaction that involves both the sale of goods and the transfer of rights in information).
application of these tests. When a court finds that a dispute involves a mixed information transaction, it will likely apply the test that its jurisdiction has adopted. The Revised Article’s neutral approach allows more flexibility than previous drafts that appeared to adopt the gravaman approach. In addition, an extensive body of case law provides examples of how to apply these tests and can help courts determine source of law for mixed transactions. This body of case law is more familiar and can arguably lend sufficient certainty to mixed information transaction disputes, or at least as much certainty as currently exists.

B. Revised Article 2 as Applied – Implied Warranties: A Common Law Void

Revised Article 2 potentially excludes some transactions that previously would have been resolved under Article 2. Because some courts have only reluctantly or indirectly applied Article 2 to software transactions, courts may now interpret the new definition of “goods” as a directive not to apply Revised Article 2 to some transactions that were previously within its purview.

This potential exclusion may not significantly affect those cases where Article 2 and common law concepts are similar. For example, a recent court decision relied on the common law defense of bona fide purchaser, stating that the common law rule comported with both Article 2 and UCITA, and thus

192. See Lousin, supra note 4, at 914, 916.
193. See Data Processing Serv., Inc. v. L.H. Smith Oil Corp., 492 N.E.2d 314, 318 (Ind. Ct. App. 1986) (indicating that the court would apply the gravaman test after noting that its jurisdiction has adopted the test).
195. See HAWKLAND, supra note 69, § 2-102:4 n.5, n.10.
196. See id.
198. See i.LAN Sys., Inc. v. Netscout Serv. Level Corp., 183 F. Supp. 2d 328, 332 (D. Mass. 2002). On the other hand, courts might look at the comment to the definition of goods and determine that although Article 2 should not apply directly to electronic transfers of information, the Article may apply to transactions that include information so long as intellectual property rights are not altered. See 2003 Approved Draft Amendments, supra note 6, § 2-103(k) cmt.
199. See Rhone-Poulenc Agro, S.A., 284 F.3d at 1330-31; Specht v. Netscape Communications Corp., 306 F.3d 17, 28 (2d Cir. 2002).
avoided the question of which three should apply.\textsuperscript{200} Similarly, another court found that both common law and Article 2 principles require manifestation of agreement between the parties in order to find existence of a contract, and held that the source of law issue did not need to be reached.\textsuperscript{201} Therefore, where all potentially applicable law produces the same result, the exclusion of information from the scope of Revised Article 2 will not have a practical effect.\textsuperscript{202}

In contrast, common law and Revised Article 2 produce very different results under implied warranty claims.\textsuperscript{203} Because common law provides no implied warranties for non-goods, Revised Article 2 potentially leaves some mixed goods/information disputes in a common law void.\textsuperscript{204} This is a significant change for consumers who have little bargaining power and are not able to negotiate express warranties for software.\textsuperscript{205} Therefore, the exclusion of some information transactions from the purview of Revised Article 2 has a potentially significant impact on consumers of information products.\textsuperscript{206} This section will discuss some of the common law tort, contract, and property causes of action that may be available to a party alleging an information product defect when Revised Article 2 does not apply.\textsuperscript{207}

\textbf{1. Tort (or Contract)}

When courts initially rejected the computer malpractice theory, they were able to turn to Article 2 to imply warranties.\textsuperscript{208} With Revised Article 2, they may once again have the opportunity to explore the possibility of imposing an elevated standard of care, or a general standard of care, upon software merchants.\textsuperscript{209} This opportunity potentially creates greater uncertainty for information transaction disputes
because courts have less case law upon which to rely.\footnote{See Ballman, supra note 44, at 426 (discussing the very brief trend of applying a computer malpractice standard).}

Parties entering into a contract would not be able to estimate their risk because the standard of care that may be imposed is uncertain.\footnote{See id. at 440.}

The common law of contracts does not provide for implied warranties for non-goods.\footnote{See Nimmer, supra note 39, at 45.}

Therefore, in the absence of Article 2 warranties, an information consumer may have to assert a tort claim and argue that some standard of care should be imposed.\footnote{See id. at 48-52.}

One hurdle for such a claim is that the software profession probably does not satisfy many of the factors used to determine whether a profession should be held to the higher standard of professional care.\footnote{See Hosp. Computer Sys., Inc. v. Staten Island Hosp., 788 F. Supp. 1351, 1361 (D.N.J. 1992).}

In addition, several courts have declined to impose such a standard.\footnote{See id.; Invacare Corp. v. Sperry Corp., 612 F. Supp. 448, 453-54 (N.D. Ohio 1984).}

A second hurdle is the economic loss doctrine, which limits damages to contractual remedies when the losses are purely economic.\footnote{See Ballman, supra note 44, at 457.}

Assuming, arguendo, that a party is able to get around the economic loss rule, a common law tort or contract claim may exist.\footnote{See generally id.}

Though courts do not imply warranties in service contracts, they will find obligations in common law, which are somewhat analogous to warranties.\footnote{See Feldman, supra note 42, at 2 (discussing the connection between warranty and tort).}

Where obligations exist in the service context, they usually involve skill level, and may be grounded in tort or contract.\footnote{See Nimmer, supra note 39, at 48.}

This obligation does not require that the service be free from defects, only that the service be performed with reasonable care.\footnote{See id. at 45, 48.}

In contrast, Article 2 implied warranties focus on the end result; the product should be merchantable or fit for a particular purpose.\footnote{See U.C.C. §§ 2-314, 2-315 (1995). These warranties have remained largely unchanged in Revised Article 2. See 2003 Approved Draft Amendments, supra note 6, §§ 2-314, 2-315.}

This obligation does not require that the service be free from defects, only that the service be performed with reasonable care.
protection code, it has provided protection for consumers of defective goods since its inception, and its strict liability warranties impose a higher standard than the service obligation's reasonable person standard.

Although such a tort or contract claim may exist for service contracts, it is questionable whether it exists for information transactions, because information may be neither a service nor a good. When a buyer purchases and downloads software from the Internet, the transaction likely consists solely of information; however, that buyer may also purchase the same software in prepackaged CD-form from an electronics store. Courts usually characterize this latter transaction as a transaction in goods. For example, virus protection software can be purchased and downloaded from the merchant's web site, or purchased in the form of a CD from an electronics store. Both transactions produce the same result; buyers are purchasing protection from viruses for their computers, but each transaction may be characterized differently.

From the buyer's perspective, these are the same transactions, and the buyer expects to receive the same quality and essentially the same product. Because quality expectations are the same, the buyer's rights, obligations and remedies should also be the same, regardless of how the transaction is categorized. In addition, although a buyer

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222. See Greenfield, supra note 33, at 293. In addition, it is not clear if consumer protection legislation, such as the Magnuson-Moss Warranty Act, applies to software. See Kaner, supra note 102, at 460; 15 U.S.C. § 2301 (2002).


224. See Nimmer, supra note 39, at 37-38 (indicating that information differs from goods and services and describing an "information/goods/services trichotomy").

225. See Brennan, supra note 74, at 536-37.

226. See id.


229. See Maggs, supra note 37, at 618 (indicating that because not all sales of computer software involve a transfer of moveable goods, determining whether Article 2 applies is more difficult); see generally Brennan, supra note 74, at 1137-38.

230. See generally Kaner, supra note 102, at 459-60, 467-69.

231. See Feldman, supra note 42, at 4.
may purchase a specific developer's virus protection software in part because he believes that it was developed with better skill, the buyer more likely purchases that software because he thinks it is the best product available to protect his computer. The typical consumer, who has limited knowledge of programming, purchases a result, a tool, and the superior skill with which that tool was developed means nothing to the buyer if the product does not do what it says it will in fact do. Therefore, although emerging information transactions seem to defy legal classification in terms of moveable goods or services, from the buyer's perspective, some information transactions are indistinguishable from buying goods, such as a toaster or a padlock. Article 2 warranties better reflect these expectations than tort or contract common law service obligations.

2. Property

Unlike the industrial era in which Article 2 was originally drafted, consumers today are less equipped to inspect the products they typically buy. Though they may be competent to inspect a toaster or padlock, most buyers are not skilled in the inspection of virus protection software. Real property law addressed an analogous transformation in the past decades, when the nature of tenants changed from primarily agrarian to urban industrial. Buyers began to view a real estate transaction primarily as the purchase of a house rather than the land on which it sits. Courts responded to this change by developing implied warranties of title, habitability, and workmanship. When the character and nature of the consumer in real estate

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232. See generally Kaner, supra note 102, at 467-69.
233. See id.; Braucher, supra note 33, at 249 (indicating that Article 2 is sufficient for many issues that arise in software disputes because software is largely a functional product; end users purchase software as a functional product rather than as a collection of services).
234. See Kaner, supra note 102, at 467-69.
236. See Brennan, supra note 74, at 460 (characterizing the era of the original Article 2 drafting process as an industrial economy and mass produced goods).
237. See Kaner, supra note 102, at 467-68.
238. See Dallon, supra note 139, at 404-05.
239. See id. at 404-05.
240. See id. at 405-10.
transactions transformed, courts implied warranties to provide some protection. Courts may now face a similar scenario with regard to some information transactions. The policies articulated by the courts when they imposed property warranties are applicable to certain consumer information transactions. Most consumers cannot determine the quality of information products and depend on the expertise of the merchant. Therefore, if only common law applies to an information transaction, a court could look to property law as precedent for judicially created implied warranties or disclosure duties.

Prior to Revised Article 2, one court declined an invitation to expand such warranties to a mixed information transaction. However, if the exclusion of some information transactions under Revised Article 2 leaves consumers with too little protection, a party could argue that the court should reexamine the option to extend judicially imposed warranties or impose disclosure duties on software merchants.

In sum, unless a court (1) finds the economic loss doctrine does not prevent a tort claim or (2) decides to impose warranties or duties as it has with property disputes, little common law protection exists for consumers of some information products. This is particularly so when performance of the contract—the development of the software—meets the reasonable service standard, but the end result is a defective product that does not do what the merchant claims it will do.

V. PROPOSAL

Information transactions are becoming increasingly common; arguably, they should not be considered "emerging." The uniform code drafting process has failed to

241. See id. at 404-05.
242. See id.
244. See id. (indicating a similar policy reason for implied warranties in real estate transactions).
245. See generally Dallon, supra note 139, at 405-11.
247. See id.
248. See generally Ballman, supra note 44, at 457.
249. See generally Nimmer, supra note 39, at 45, 48.
250. See Brennan, supra note 74, at 462 (indicating that the copyright
promulgate successfully a set of rules to address these important commercial transactions.251 After five years, UCITA has been enacted in only two states.252 Because Revised Article 2 essentially leaves information transaction issues to the courts, some commerce disputes may be left with common law rules where before they may have fallen under the purview of the familiar and developed Article 2 uniform law.253

Significantly, Revised Article 2 does provide a great deal of flexibility for the courts.254 As applied to mixed information transactions, its scope can be interpreted more narrowly or more broadly than that of Article 2 and previous revision drafts.255 Because the code does not define “information” or direct the court to apply a particular mixed transaction test,256 courts have more discretion than they would have under previous drafts of Revised Article 2.257 The courts now have an opportunity to develop tests where the drafting committee has thus far been unable to do successfully.258 This discretion provides the flexibility necessary for emerging transactions, and allows for an adaptive approach to inevitable and

industry, a major component of the software industry, now rivals the size of the manufacturing sector); Zavaletta & Hymson, supra note 96, at 261.

251. Only two states, Maryland and Virginia, have adopted a form of UCITA. See MD. CODE ANN., COM. LAW II § 22-101 (2001); VA. CODE ANN. § 59.1-501.1 (Michie 2001). In addition, legislation in at least three states has expressly denied UCITA’s application to a contract for which its laws govern, and negates contract terms that indicate UCITA will govern the contract. See IOWA CODE § 554D.104(4) (2002); N.C. GEN. STAT. § 66-329 (2002); W. VA. CODE § 55-8-15 (2002).


254. See generally 2003 Approved Draft Amendments, supra note 6, § 2-103(k). Further, the preliminary official comment indicates that the Article “does not directly apply to an electronic transfer of information . . . .” Id. (emphasis added). In addition, this comment indicates that although the Article may apply to a transaction that includes information, the Article does not alter intellectual property rights. Id. This comment appears to indicate that Article 2 could be applied indirectly to a mixed goods/information transaction, so long as intellectual property rights remain unchanged. Id.

255. See discussion supra note 32.

256. See 2003 Approved Draft Amendments, supra note 6, §§ 2-102, 2-103(k); U.C.C. § 2-102 (1995).

257. See discussion supra note 32.

258. Id.
continuous changes in today's commerce.\textsuperscript{259}

In addition, courts should be aware of the significance of this discretion, and carefully consider how to define "information," because the definition determines whether transactions are excluded from Revised Article 2, and can have a significant impact on the rights and obligations of parties.\textsuperscript{260} Until the courts develop a clear definition or test, the source of law that will govern information transactions will be at least as uncertain under Revised Article 2 as it was under Article 2.\textsuperscript{261} Also, courts should follow case law and continue to use the predominant purpose test, particularly when a transaction is not easily divisible.\textsuperscript{262} Because there is more case law to refer to under the predominant test than the gravaman test, this approach will provide more certainty to both parties and best meets their expectations.\textsuperscript{263}

With this discretion, however, comes the possibility that some mixed goods/information transactions that previously would have been resolved under Article 2 may now be excluded and fall under common law.\textsuperscript{264} Currently, common law does not provide a convenient framework that addresses information transactions, particularly with regard to implied warranties.\textsuperscript{265} Common law may not adequately protect modern consumer expectations.\textsuperscript{266} Further, the exclusion of information from Revised Article 2 potentially creates inconsistent remedies for essentially the same product, simply because the method of transaction varies.\textsuperscript{267} Therefore, when exercising this new discretion, courts should consider consumer expectations and the changing nature of the consumer with respect to emerging technologies.\textsuperscript{268}

\begin{thebibliography}{99}
\bibitem{259} See generally Millstein et al., supra note 41; Nimmer, supra note 41.
\bibitem{260} See 2003 Approved Draft Amendments, supra note 6, § 2-103(k); see also discussion supra note 254.
\bibitem{261} See generally 2003 Approved Draft Amendments, supra note 6, § 2-103(k); discussion supra note 254.
\bibitem{263} See Lousin, supra note 4, at 916.
\bibitem{264} Compare 2003 Approved Draft Amendments, supra note 6, § 2-103(k), with U.C.C. § 1-103 (1995).
\bibitem{265} See generally Nimmer, supra note 8.
\bibitem{266} See generally Kaner, supra note 102, at 459-60, 467-69.
\bibitem{267} See Feldman, supra note 42, at 4.
\bibitem{268} See generally Armstrong, supra note 145; Braucher, supra note 33, at
\end{thebibliography}
Finally, if Revised Article 2 is adopted by the states, courts will have the opportunity not only to develop new tests and rules, but also to influence future rules for information transactions. Because it is likely that efforts to codify and promulgate default rules for these important commercial transactions will continue, uniform code drafters will be paying close attention to how the courts treat the wide discretion left to them by Revised Article 2.269

VI. CONCLUSION

After a decade of drafting, Revised Article 2 has at last arrived.270 One important change is the definition of “goods,” which now excludes “information.”271 This revision effectively alters the scope of Article 2, and thus potentially affects the source of law for information transactions, specifically mixed information transactions and embedded goods.272 Common law rather than Article 2 may now govern some of these transactions.273 Common law does not reflect modern consumer expectations, particularly with regard to defective information and mixed goods/information products.274 Revised Article 2 provides the courts with a great deal of flexibility to interpret the term “information” as well as the choice of which test to apply to determine source of law for these mixed transactions.275 This discretion allows courts the opportunity to develop new tests and default rules regarding the scope of Revised Article 2, and will likely affect how source of law for mixed information transactions will be determined in the future.276

246-52, 258-59 (indicating that a functional approach to classification in this context would result in treating copies of software as goods when they are sold as "products").
269. See 2003 Approved Draft Amendments, supra note 6, § 2-103(k); see also discussion supra note 158.
270. See Council Approves Article 2 Amendments, supra note 17, at 3.
271. See 2003 Approved Draft Amendments, supra note 6, § 2-103(k).
272. See Lousin, supra note 4, at 916.
274. See generally Kaner, supra note 102, at 459-62.
275. See 2003 Approved Draft Amendments, supra note 6, § 2-103(k); see also discussion supra note 158.
276. See generally Lousin, supra note 4, at 913.