

# THE EXCLUSION OF EMBEDDED SOFTWARE AND MERELY INCIDENTAL INFORMATION FROM THE SCOPE OF ARTICLE 2B: PROPOSALS FOR NEW LANGUAGE BASED ON POLICY AND INTERPRETATION

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## ABSTRACT

This Article explores the scope of the proposed draft of Article 2B of the Uniform Commercial Code. In particular, it examines the exclusion of embedded software from the scope of Article 2B, and the treatment of hybrid transactions under Article 2B. This Article also suggests that the language of Article 2B describing the exclusion of embedded software and the treatment of hybrid transactions is ambiguous and could lead to inconsistent applications of Article 2B. After considering the history of the language and the policies behind the exclusion of embedded software and the treatment of hybrid transactions, new language for Article 2B is suggested.

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## I. INTRODUCTION

Article 2B, a proposed addition to the Uniform Commercial Code,<sup>1</sup> addresses issues of formation, modification, warranty, disclaimer, transfer of rights, licensing, and remedy as they pertain to the sale and licensing of software, and the electronic formation of contracts.<sup>2</sup> The scope of Article 2B encompasses "licenses and software contracts" and "agreements to provide support for, maintain, or modify software related to a software contract that is included in this article."<sup>3</sup> Article 2B governs the sale of copies of software, but not the sale of copies of books or other printed material, although both software and books are protected by copyright and seem to fit within the same category.<sup>4</sup> Article 2B distinguishes the sale of copies of software from books because the use of software is expressly conditional, while conditions on copyrighted books or other printed materials are implied.<sup>5</sup> Software is also distinguished from books because the nature of software (easily copied and transferred) makes it particularly susceptible to copyright infringement.<sup>6</sup> Because software is so easily copied and transferred, licensing and distribution agreements are easily broken. Article 2B will go well beyond the common law in providing a legal framework to establish remedies and guidelines for the governance of commercial software transactions.<sup>7</sup>

Basically, a contract only fits within the scope of Article 2B if it is a licensing agreement that expressly conditions the use of information or if it is a contract which is related to a licensing agreement and which maintains, modifies, or supports software.<sup>8</sup>

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1. See *The National Conference of Commissioners on Uniform State Laws* (visited Nov. 9, 1998) <<http://www.law.upenn.edu/library/ulc/ulc.htm>>.

2. See generally U.C.C. § 2B (Feb. 1998 Draft).

3. U.C.C. § 2B-103(a)(2) (Mar. 1998 Draft).

4. See U.C.C. § 2B-103, Reporter's Note 2 (Feb. 1998 Draft).

5. See *id.*; see also *infra* Part IV.A.

6. See U.C.C. § 2B-103, Reporter's Note 5 (Feb. 1998 Draft).

7. See U.C.C. Article 2B, Preface at 8-9 (Sept. 25, 1997 Draft) (stating that "limitations [on the use of software] are commercially important because the technology makes copying, modification and other uses easier to achieve in forms that can yield commercially harmful results ... Article 2B reflects ... the need for a focused body of law applicable to these products ... [N]o common law exists on many of the important questions ....").

8. See U.C.C. § 2B-103(a) & Reporter's Note 5 (Feb. 1998 Draft). In addition, contracts involving services not within Article 2B's scope may fall under Article 2B's contract formation rules if Article 2B's subject matter is the predominant purpose of the contract. See U.C.C. § 2B-103(c)(2) (Mar. 1998 Draft) (using language that limits the scope of Article 2B's rules of contract formation to contracts predominantly related to subject matter or services within the scope of Article 2B except where the parties agree to

The scope of Article 2B is intentionally ambiguous. The drafters intended to leave the general question of the types of licensed information within Article 2B's scope indefinite because the "long term viability" of Article 2B might suffer if the general scope were limited to a certain subject matter, such as digital information.<sup>9</sup> Instead, the drafters focused on a *type* of transaction—licensing.<sup>10</sup> The indefinite nature of the general scope of Article 2B is understandable because of the unpredictable evolution of technology in the information age.

Article 2B also has named exclusions which are imprecise: licenses and software contracts or agreements otherwise within the scope of Article 2B are excluded from the scope if one of several conditions exist. The scope of Article 2B excludes software embedded in goods,<sup>11</sup> licenses or software contracts merely incidental to a larger transaction that would not otherwise fall within the scope of Article 2B,<sup>12</sup> printed materials,<sup>13</sup> some patents,<sup>14</sup> entertainment contracts,<sup>15</sup> employment contracts,<sup>16</sup> and banking or monetary transactions.<sup>17</sup>

This Article explores the exclusions to the scope of Article 2B. Although Article 2B is still in the drafting process, this Article tries to identify possible sources of uncertainty and confusion in the language of the exclusions to the scope of Article 2B. By hypothesizing situations which are not clearly within the exclusions to Article 2B, this Article demonstrates the need for more carefully defined exclusions to the scope of Article 2B. Unless remedied in the drafting process, the imprecise exclusions to the scope of Article 2B might lead to less uniformity and guidance than the drafters had hoped to achieve.

Although the imprecision of Article 2B's general scope is necessary to allow Article 2B to change along with evolving technology, exclusions to the scope of Article 2B should not be so imprecise. Unlike the general

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be bound by the terms of Article 2B); U.C.C. § 2B-103, Reporter's Note 9 (Feb. 1998 Draft) (asserting that the scope of Article 2B's rules of contract formation is not limited to contracts involving only services and subject matter within Article 2B's scope).

9. See U.C.C. § 2B-103, Reporter's Note 5 (Feb. 1998 Draft).

10. See *id.*

11. See U.C.C. § 2B-103(b)(2)(C) (Mar. 1998 Draft). This exclusion for embedded software does not apply if the embedded software is in a disk, computer, or other information processing system. See *id.*

12. See *id.* § 2B-103(b)(2)(A).

13. See U.C.C. § 2B-103, Reporter's Note 2 (Feb. 1998 Draft).

14. See U.C.C. § 2B-103(b)(2)(B) (Mar. 1998 Draft).

15. See *id.* § 2B-103(b)(2)(E).

16. See *id.*

17. See *id.* §§ 2B-103(b)(1), 2B-103(b)(2)(D).

scope of Article 2B and its concern with general technology, the exclusions concern a type of information which is not considered to be a part of the evolving technology. The exclusions to Article 2B—embedded software and merely incidental information—should be well-defined because they involve the end use of the technology, whether that end use includes chips, CD-ROMs, or the next form of technology. Because the form of the technology will not change the end use, there is no reason to be imprecise in the language describing the exclusion. If the drafters of Article 2B are imprecise in their definition of technology or information within the scope of Article 2B, and, therefore, hope to keep the scope of Article 2B as expansive as possible, then the exclusions to the scope of Article 2B should be as limited and narrow as possible.

Part II of this Article explores the exclusion of embedded software from Article 2B's scope. This section addresses two potential sources of ambiguity in the exclusion provision: the definition of embedded software and the condition that embedded software excluded under the provision cannot have been "developed specifically for the transaction." Part II.A explains the exclusion and defines embedded software using the language of Article 2B and the Reporter's Notes. Part II.A next suggests four factors which may help determine whether software embedded in goods falls within the exclusion, and applies these four factors to goods containing embedded software which do not clearly fall within the exclusion. The application of these factors indicates the insufficiency of the exclusion for embedded software. Part II.B discusses the meaning and consequences of the condition that the embedded software is only excluded if it was not developed specifically for the transaction. Part II.B also uses an example to illustrate the potential difficulties encountered when applying this condition. Finally, Part II.C proposes new language for a more specific exclusion of embedded goods from Article 2B.

Part III of this Article explores Article 2B's treatment of hybrid transactions which involve goods traditionally governed by Article 2 or services governed by other law, as well as information and software that will be governed by Article 2B. First, this Part explains the three tests used by Article 2B to determine whether the information or software is within its scope. Parts III.A and III.B focus on the newest exclusion to Article 2B created by the "merely incidental" test. Part III.A focuses on the first type of exclusion under the test: the exclusion of licensed information which is incidental to services. Part III.A explores the background of the exclusion, the conflicting past and present policies underlying the exclusion, the possible inequities in the application of the exclusion, and suggests a solution to the problems inherent in the exclusion as it now stands. Part III.B fo-

cuses on the second type of exclusion under the merely incidental test: the exclusion of licensing and software contracts that are only a minor part of the transaction. Part III.B discusses the competing policies of the "gravaman of the action" test used for hybrid transactions versus the new merely incidental test. Finally, Part III.B proposes changes to make the merely incidental test more consistent with the results and purposes of the other two tests the drafters use to structure the scope of Article 2B.

## II. THE EXCLUSION OF EMBEDDED SOFTWARE

Article 2B limits the scope of its application by excluding embedded computer programs. Examples of embedded software include navigational system software used in airplanes,<sup>18</sup> and computer programs which control automobile braking systems.<sup>19</sup> Two examples of non-embedded software include software contained on a disk,<sup>20</sup> and software stored in a computer.<sup>21</sup>

Whether the software is within the general scope of Article 2B or within the section 103 exclusion affects the available remedies to the consumer or buyer of the software. If the only remedy lies within the U.C.C., Article 2 protects the consumer more than Article 2B. Therefore, if the embedded software falls within the exclusion to Article 2B, but is covered by Article 2, the consumer will benefit from the greater protection of Article 2's remedial provisions. The remedy available in an Article 2B suit for the failure of the software could be limited by contract. While Article 2 contains a presumption that a limitation on personal injury loss recovery is *prima facie* unconscionable in consumer contracts,<sup>22</sup> Article 2B contains no such presumption. The two articles contain similar statutes of limitations,<sup>23</sup> with one potential difference: in Article 2B, sellers are not pre-

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18. See U.C.C. § 2B-103, Reporter's Note 8(b) (Feb. 1998 Draft).

19. See *id.*

20. See *id.* § 2B-103(c)(2)(A).

21. *Id.*

22. See U.C.C. § 2-719(3) (1994).

23. Both articles contain a four-year statute of limitations that begins to run when the breach occurs (upon tender of delivery). See *id.* § 2-725(2); U.C.C. § 2B-705(a) (Feb. 1998 Draft); cf. *Triangle Underwriters, Inc. v. Honeywell, Inc.*, 604 F.2d 737, 744 (2d Cir. 1979) (agreeing that the statute of limitations begins tolling upon the occurrence of the negligent act, but that, in this case, the negligent act was the failure to deliver a working computer system, not the negligence that resulted in the inability to deliver a working computer system). Article 2B also has an alternate statute of limitations that runs for one year after the harm is or should have been discovered. See U.C.C. § 2B-705(a) (Feb. 1998 Draft). A recent draft of revised Article 2 would conform to Article 2B's ad-

cluded from shortening this period by contract, while a recent draft of the revised Article 2 precludes limitation in consumer contracts.<sup>24</sup> A contractual limitation on the starting point for the running of the statute of limitations could reduce the consumer's ability to recover for losses.

Although the drafters have gradually limited the general scope of Article 2B since the original draft in 1996,<sup>25</sup> the specific exclusion of embedded software has been present since the early drafts of Article 2B.<sup>26</sup> In the February 1998 draft, the scope of Article 2B excluded computer programs which are embedded in goods and which are sold or leased as a unit with the goods in which they are embedded.<sup>27</sup> This embedded software is gov-

ditional one-year statute of limitations period. *See* U.C.C. § 2-814(a) & Reporter's Note 1 (Mar. 1, 1998 Draft).

24. *See id.*

25. *See* U.C.C. Article 2B, Preface at 9 (Feb. 1998 Draft). Originally, the drafters intended the scope of the new Article to cover all transfers of information, whether in software, print, or other media format. *See* U.C.C. § 2B-103(a) (Feb. 2, 1996 Draft) (providing that Article 2B "applies to transactions in information, including licenses, access contracts, unrestricted transfers of information, sales of copies of information and software contracts, and to agreements to support, maintain, develop, or modify information"). In fact, the Reporter's Notes to the early draft express concern about restricting the scope. *See* U.C.C. § 2B-103, Reporter's Note 1 (Apr. 2, 1996 Draft) (stating that focusing the scope of Article 2B on one type of information, such as digital information, was "too narrow and too closely linked to a particular technology"). But later drafts limit the scope of Article 2B to "licenses of information and software contracts" and the contracts for the information or software maintenance or modification. *See* U.C.C. § 2B-103(a) (Sept. 25, 1997 Draft).

26. *See* U.C.C. § 2B-103(d)(4) (Sept. 25, 1997 Draft); U.C.C. § 2B-103(d)(3) (1997 Annual Meeting Draft); U.C.C. § 2B-103(d)(3) (May 5, 1997 Draft); U.C.C. § 2B-103(d)(3) (Mar. 21, 1997 Draft); U.C.C. § 2B-103(d)(3) (Jan. 20, 1997 Draft); U.C.C. § 2B-103(d)(3) (Dec. 12, 1996 Draft); U.C.C. § 2B-103(d)(3) (Nov. 10, 1996 Draft); U.C.C. § 2B-103(d)(3) (Sept. 4, 1996 Draft); U.C.C. § 2B-103(d)(3) (July 12-19, 1996 Annual Meeting Draft); U.C.C. § 2B-103(d)(6) (May 3, 1996 Draft); U.C.C. at § 2B-103(d)(6) (Apr. 2, 1996 Draft); U.C.C. § 2B-103(d)(6) (Feb. 2, 1996 Draft). The wording of the exclusion of embedded computer programs remained substantially the same until later drafts of Article 2B.

27. *See* U.C.C. § 2B-103(c)(2) (Feb. 1998 Draft). The text of the February 1998 draft of the exclusion reads:

(c) Except as otherwise provided in this section, this article does not apply to the extent that an agreement is ...

(2) a sale or lease of a computer program embedded in goods and sold or leased as part of the goods, unless

(A) the goods are merely a copy of the program or are an information processing system in which the program is to operate,

(B) the program was developed specifically for the transaction, or

erned instead by the body of law which applies to the good containing the embedded software.<sup>28</sup>

In the February 1998 draft, even embedded software did not fall within the exclusion if the buyer of the goods had specifically licensed it,<sup>29</sup> or if the embedded software was "developed specifically for the transaction."<sup>30</sup>

There are at least two difficulties that emerge when determining whether software falls within this exclusion of embedded software. First, the exclusion does not clearly define embedded software. Second, the condition that embedded software cannot be within the exclusion if it has been "developed specifically for the transaction"<sup>31</sup> is ambiguous because of varying interpretations of the term "developed."

#### A. Definition of Embedded Software

There is no existing caselaw which defines "embedded software." The only explanation is supplied by two examples of embedded software listed by the reporter,<sup>32</sup> and two examples *non-embedded* software.<sup>33</sup> While two

(C) the program was subject to a separate license with the transferee of the goods ....

*Id.* Most of this Article reflects analysis of this draft. Another recent draft has changed the language to exclude:

a sale or a lease of a product that has a computer program embedded in it, but this article applies if the product is:

- (i) merely a copy of the program;
- (ii) a computer;
- (iii) another information processing system and a primary purpose of the transaction is to give access to or use of the program.

U.C.C. § 2B-103(b)(2)(C) (Mar. 1998 Draft).

28. See U.C.C. § 2B-103(c)(2), Reporter's Note 8(b) (Feb. 1998 Draft); see also *id.* § 2B-103(b) ("If another article of [the U.C.C.] applies to a transaction, this article does not apply to the subject matter or related rights and remedies governed by the other article except as provided in this section ....").

29. See *id.* § 2B-103(c)(2)(C).

30. *Id.* § 2B-103(c)(2)(B). In at least one case, it was the degree to which software was developed specifically for a transaction that caused courts to label a software contract as one for services. See *Micro-Managers, Inc. v. Gregory*, 434 N.W.2d 97, 100 (Wis. Ct. App. 1988).

31. U.C.C. § 2B-103(c)(2)(B) (Feb. 1998 Draft).

32. See *id.* § 2B-103, Reporter's Note 8(b) (listing navigation software in airplanes and software in automobile braking systems as two examples of embedded software that fall within the exclusion).

33. See *id.* § 2B-103(c)(2)(A) (excluding software embedded in copies of a program, such as disks, or "information processing systems," such as computers). Note also that the reporter has drawn attention to the difficulty of determining the scope of the embedded software exclusion. See U.C.C. Article 2B, Preface at 17 (Sept. 25, 1997 Draft) ("Defining the scope of this exclusion has been difficult").

of the examples of software do not fit within the exclusion, all four examples of software are "embedded" in goods in the literal sense. Therefore, "embedded software" is a term of art within the context of the section 2B-103 exclusion. Courts and practitioners should not use a literal interpretation or dictionary definition of embedded software to determine whether embedded software will be within the exclusion to Article 2B.

Instead, the practitioner or court should infer the meaning of embedded software from consideration of the embedded software examples in the Reporter's Notes and the language of Article 2B. The two examples of embedded software given in the Reporter's Notes are navigation software embedded in airplanes,<sup>34</sup> and computer programs embedded in automobile braking systems.<sup>35</sup> The two examples of non-embedded software are software stored on a disk,<sup>36</sup> and software on a computer.<sup>37</sup> Two underlying policies of Article 2B which should be considered in conjunction with the exclusion of the embedded software include the intention of the drafters to encompass all information which is particularly susceptible to unauthorized copying or transferring,<sup>38</sup> and the attempt of the drafters to mirror expectations and practices already present in the commercial world.<sup>39</sup>

The scope of the embedded software exclusion should be informed by a comparison of the four examples of embedded or non-embedded software, along with consideration of the underlying policies of Article 2B. The author contends that four factors should influence the exclusion or inclusion of embedded software within Article 2B: 1) the purpose of owning the good; 2) the buyer's awareness of the software as a separately functioning part of the good; 3) the ability to copy or transfer the software; and 4) the risk associated with the malfunction of the software.

The first factor, the purpose of owning the good which contains the embedded software, is drawn from a distinction between software embedded in computers or disks and software embedded in automobile braking systems or navigation programs. In a good such as a computer or disk, the software embedded in the computer or disk is the central purpose of owning the good. In the airplane or automobile, the software is important to the functioning of the good, but is not the main purpose for owning the

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34. See U.C.C. § 2B-103, Reporter's Note 8(b) (Feb. 1998 Draft).

35. See *id.*

36. See *id.* § 2B-103(c)(2)(A).

37. *Id.*

38. See *id.* § 2B-103, Reporter's Note 5.

39. See U.C.C. Article 2B, Preface at 15 (Feb. 1998 Draft).



plane or the automobile.<sup>40</sup> This distinction suggests that if the main use of the good is solely to employ the software program, then the embedded software is within the scope of Article 2B. A common example would be the sale of a disk—a good—that contains an embedded software program, like a daily planner or a word processing system. Although the good (the disk) is important, the main purpose of the sale is to use the software program embedded in the disk. One test of whether the main purpose of the product is for the good or the software is whether the buyer would be satisfied with the software if it were embedded within another form of good, like a compact disk or a tape.<sup>41</sup> Correspondingly, the distinction also suggests that if the purpose of the good is not for the use of the software within it, then the software is embedded and is not governed by Article 2B. This factor applies regardless of the importance of the software to the function of the good. For example, the software embedded in a car may be so important that a dealer would not be able to sell a car without it, but the main purpose of owning the good is still to obtain the services performed by the good, not just the software. Unlike the example of the daily planner software program above, the buyer would not be satisfied with the software if it were embedded in another good.

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40. Since it remains important to the good, the software in an airplane or car is not "merely incidental." If the software was "merely incidental to subject matter not governed by this article," then the law governing the main transaction would also govern the incidental licensed material or software. U.C.C. § 2B-103(a) (Feb. 1998 Draft); *see also id.* § 2B-103, Reporter's Note 4. If the embedded software were within the "merely incidental" exception to Article 2B, then the specific exclusion for embedded software would be superfluous.

41. I do not use the predominant purpose test to determine whether the purpose of owning the product is for the service of the good or the software because of the very nature of embedded software. The predominant purpose test is usually employed to determine whether the services or goods aspect of a transaction predominates. *See Advent Sys. Ltd. v. Unisys Corp.*, 925 F.2d 670, 676 (3d Cir. 1991). The test uses such factors as cost and structure of agreement. *See id.* Relative cost and the structure of the agreement are not helpful factors when determining whether goods or embedded software is the main purpose because the two are usually sold as a package, without any proportional distribution of sale price between the two. If the good and its embedded software were priced separately, it would seem that the software would not be within the exclusion because it was not "sold or leased as part of the goods," as required by the provision. U.C.C. § 2B-103(c)(2) (Feb. 1998 Draft). In addition, I do not list the cumbersome application of two laws to one transaction as one of the possible policies underlying the exclusion of embedded software. This would not seem to be an underlying policy of Article 2B because Article 2B explicitly rejects the predominant purpose test in hybrid transaction situations despite the awkwardness of applying more than one law. *See id.* § 2B-103, Reporter's Note 6.

The second factor, the buyer's awareness of the embedded software as a separately functioning part of the good, is supported by the cited examples, and is drawn from the policy of the drafters to be accurate, not original.<sup>42</sup> Software embedded on a computer is clearly separate from the computer hardware itself. Although hardware has occasionally been the source of computer miscalculation, if someone using a computer to compute their federal tax liability noticed that the amount of taxes figured was incorrect, then the user may determine that the computer is the cause of the malfunction. The user would identify the embedded software as the source of the malfunction, and would probably expect that the program would not be covered under the same warranty covering the computer, even if that program was embedded in the computer at the time the user purchased the computer. Since the reasonable user in the buyer's shoes would have been aware of the program and the manner in which it functioned separately from the hardware, it is appropriate to govern that software under a separate set of warranties and liabilities than the hardware (the computer) which is a good covered under Article 2.<sup>43</sup>

Software embedded in a car, however, is not clearly a separate feature of the car. If a car will not stop, then the driver probably would not know whether to blame the brake failure on the embedded software or the mechanical brake hardware. The driver would probably view the software operating the brakes and the brake hardware as two parts of a single whole and would reasonably expect the same warranty to cover both. Therefore, if the buyer is aware of the separate status of the software, then the software is governed by Article 2B. But if the good operates with the software as a whole, and the buyer reasonably expects that the software and the hardware operate as a single unit covered by the same warranties, then the software is not governed by Article 2B.<sup>44</sup> In the case of the car with mal-

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42. See U.C.C. Article 2B, Preface at 14 (Feb. 1998 Draft).

43. Article 2 employs a gravaman of the action test; however, the information component of this transaction escapes such treatment because it would fall within the scope of Article 2B. See U.C.C. § 2B-103(d) (Feb. 1998 Draft); see also U.C.C. § 2B-103, Reporter's Note 4 (Sept. 25, 1997 Draft). It is not clear whether a disk is considered a good under Article 2 or information under Article 2B. According to the language of Article 2B, "media that contains the information" is within its scope. See U.C.C. § 2B-103(d)(1) (Feb. 1998 Draft). However, neither Article 2B nor the Reporter's Notes define media. If the exclusion of embedded software does not encompass goods that "are merely a copy of the program" (i.e. disks), then it would seem superfluous to also specifically include disks in the scope of Article 2B under Section 2B-103(d)(1).

44. Ironically, in an early case applying Article 2 to software, the court relied on the fact that the software was sold with hardware as a single unit—basically, that the software was embedded in the purchased goods and that the defendant did not intend or expect that the software would be part of a separate contract outside Article 2. See Neilson

functioning brakes, the buyer would not expect to have to sue under two different Articles or two different theories for an injury caused by both hardware and software failure. Instead, the buyer would probably expect the same warranties and remedies to be available for the failure as a whole.

In contrast, a buyer explicitly aware of the independent function of the embedded software may be unusually informed, and may enjoy greater bargaining power, thereby negating the need for the increased protections available under Article 2.<sup>45</sup> Thus, the buyer's awareness of the software is a factor used in determining the appropriate level of protection under Article 2. Therefore, the buyer's awareness should also be a factor used in determining whether the software falls within the embedded software exclusion.

The third factor, the ability to transfer or copy the embedded software, is based on the drafters' policy to include all information susceptible to copyright infringement within the scope of Article 2B.<sup>46</sup> This factor also matches a comparison of the Reporter's examples and the examples in the provision. Programs embedded in computers or disks are easily transferred or copied, while programs embedded in automobiles or airplanes are not. Therefore, it is appropriate that programs embedded in computers or disks should be governed by Article 2B. The programs embedded in cars or planes would receive unnecessary protection if they were governed by Article 2B because they are not as susceptible to copyright infringement. For example, car owners generally do not and cannot make copies of the information contained on the chip which controls their automobile braking systems.

This third factor also corresponds to the first factor (the purpose of the good) because consumers usually buy goods which include software that is easily copied and transferred for the purpose of using the software. Analogously, goods sold for the purpose of using the good do not usually contain embedded software in a format which is easily copied or transferred.

The fourth factor, the risk associated with the malfunction of software, is a result of the distinction drawn between software embedded in a computer or disk and software embedded in an airplane or automobile. Hypo-

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Bus. Equip. Ctr., Inc. v. Italo V. Monteleone, M.D., P.A., 524 A.2d 1172, 1174-75 (Del. 1987).

45. See *supra* text accompanying notes 22-24 (discussing the remedies available under Article 2).

46. See U.C.C. § 2B-103, Reporter's Note 5 (Feb. 1998 Draft).

thetically, the physical and economic risks of malfunction of the software in a computer are much lower than the risk of malfunction of the software in an airplane or automobile. This difference in the examples suggests that one policy underlying the drafters' decision to exclude embedded software from the scope of Article 2B might be to protect consumers in situations in which the risk of harm due to malfunction is great. By placing embedded software outside the scope of Article 2B, the drafters insured that a plaintiff would not be limited to the remedies provided by Article 2B, but could rely on the remedies provided by Article 2. This exclusion tells courts that this type of software is not really software at all—it is part of a good which falls within the scope of state consumer protection laws, Article 2, and product liability laws.<sup>47</sup>

Because Article 2, which would usually govern the product or good in which the software is embedded, provides more available remedies to the consumer than Article 2B,<sup>48</sup> the protection of consumers may be one reason for excluding embedded software from the scope of Article 2B. If the protection of consumers motivates this exclusion, then the risk of harm posed by the good containing the embedded software is an appropriate factor to consider in determining whether the software should be excluded.<sup>49</sup> Two underlying policies should be considered: the intent of the

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47. Article 2B contains language which allows consumer protection laws to supersede Article 2B, but only if these laws existed prior to the adoption of Article 2B. See U.C.C. § 2B-104(a) (Feb. 1998 Draft). This fact does not necessarily preclude the necessity of excluding embedded software in order to increase consumer remedies. Excluding the embedded software emphasizes the application of consumer protection laws in certain situations. In addition, consumer protection laws may not apply to software. See Margie Wylie, *Perspectives: Shrink-Wrapping the Social Contract* (visited November 8, 1998) <[http://www.news.com/Perspectives/mw/mw4\\_23\\_97a.html](http://www.news.com/Perspectives/mw/mw4_23_97a.html)> (stating that only goods are protected by state consumer protection laws, and that software may not be considered a good under these laws).

48. See *supra* text accompanying notes 22-24.

49. There is little information available pertaining to the frequency of physical injury or substantial economic harms suffered by consumers as a result of software malfunction. See Complaints from Consumers to the New York Better Business Bureau (1996-97) (on file with author) (detailing eight complaints about software malfunction, incompatibility, and poor performance in which 7 of the 8 consumers requested only a refund of the purchase price to settle their complaint); Letter from Anne O'Grady, Information and Investigations Specialist, New York Better Business Bureau, to the author (received Mar. 10, 1998) (on file with author) (stating that most computer complaints deal with sales or repair); Telephone Interview with Jennifer Borio, Pittsburgh Better Business Bureau (Mar. 5, 1998) (on file with author) (stating that most computer complaints are about hardware capabilities such as compatibility or RAM expansion, and that no consumers have complained of defective software); The vice president and counsel for the Software Publishers Association in 1997, Mark Nebergall, does not know of any sub-

drafters to include all information particularly susceptible to unauthorized copying or transferring,<sup>50</sup> and their intent to formulate Article 2B according to the expectations and practices already present in the commercial world.<sup>51</sup>

We should consider these four factors when determining whether embedded software should be excluded from Article 2B. But problems arise when one or two of the factors indicate that the software should fall within the exclusion, while one or two indicate that the software should fall outside the exclusion. Such in-between cases highlight the weaknesses inherent in an imprecise definition of embedded software.

Some examples of goods for which the factors discussed *supra* indicate both exclusion and inclusion within the scope of Article 2B are: computerized surgical equipment; automated teller machines; robotics in factories; and advanced home appliances, such as coffee machines and bread machines.

Computerized surgical equipment is an innovation which combines computer software, a monitor, the actual surgical instrument, and a doctor's physical motions. This new technology operates endoscopes,<sup>52</sup> and may soon become available to perform heart bypass surgery,<sup>53</sup> and other

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stantial harm that has occurred because of software defects, either. See Brian McWilliams, *The End of Software Licenses?*, PC WORLD ONLINE (visited November 8, 1998) <<http://www.pcworld.com/cgi-bin/database/body.pl?ID=970307181430>> (quoting Mr. Nebergall). In addition, several Westlaw searches failed to yield any cases involving physical harm due to software malfunction. But this fruitless search does not necessarily indicate a lack of injuries due to software malfunction. Most physical harm caused by software malfunction probably occurs in non-consumer settings. See Maria Stephens, *Hit and Run at Honda* (April, 1996) (visited November 8, 1998) <<http://www.uaw.org/solidarity/9604/honda.html>> (reporting a case of robot malfunction at a Marysville, Ohio, Honda plant in which the robot threw an employee against a pole, resulting in five years of continual catastrophic nerve damage, blackouts, and pain). Thus, consumer protection laws may not apply in practice to cases involving harm due to malfunction of embedded software.

50. See U.C.C. § 2B-103, Reporter's Note 5 (Feb. 1998 Draft).

51. See *id.* Article 2B, Preface at 15 (Feb. 1998 Draft).

52. A computerized, robotic endoscope is an optical tube, or laparoscope, that feeds images to a video screen and may be threaded inside the body during minimally invasive procedures. The Automated Endoscopic System for Optimal Positioning (the AESOP) is an endoscope available from Computer Motion in both a regular model and a voice activated model. See *Computer Motion homepage* (visited Mar. 3, 1998) <<http://www.computermotion.com>>.

53. Computer Motion presented a computerized surgical system designed to perform heart bypasses at a symposium in January of 1998, and plans to apply for FDA approval in 1998. See *Heart Bypass Surgery Feasible Through Chest Incisions Smaller than the Diameter of a Pencil* (visited Mar. 3, 1998) <<http://www.computermotion.com/>

technically demanding surgeries.<sup>54</sup> For computerized surgical equipment, the consumer awareness factor and ease of copying factor indicate inclusion under Article 2B, while the risk factor and the purpose factor indicate exclusion from Article 2B.

The doctor or hospital purchasing the equipment will probably be aware that the software functions separately from the hardware (the surgical equipment itself). If the laser operated by the software consistently performs at a lower frequency than the one set by the doctor, then the doctor knows to repair the laser itself. But if the laser travels left when directed to travel right, then the doctor knows that the software programming is faulty. This characteristic makes the computerized surgical equipment appear to be more like the software embedded in a computer. Further, the software, if run through an actual computer hard drive, might be easily copied. Thus, the ease of copying factor also indicates that computerized surgical equipment falls within Article 2B.

However, the risk and purpose factors suggest that computerized surgical equipment should be excluded from the scope of Article 2B. A mistake in the programming of the software embedded in the equipment could lead to severe physical injuries. As the risk level of the product is high, it might be better governed by Article 2 or the common law. In addition, the purpose factor favors exclusion. The software is not the main purpose of owning the good. The main purpose of owning the good is to obtain the services performed by the surgical equipment, not the operation of the software alone. Since the possible factors which indicate exclusion or inclusion within Article 2B are evenly split, the language of the exclusion is not adequately precise. The language of the exclusion or the Reporter's

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pressr25.htm>. The machine, named "ZEUS," has three robotic arms: one uses an endoscope, while the other two use surgical instruments. *See id.* The press release states:

[w]hile seated at the console, the surgeon's macro movements are input into the System through handles which resemble conventional surgical instruments. These inputs are scaled and filtered through a computer and translated via the robotic arms into precise micro movements at the operative site. For example, the surgeon might move the surgical instrument handle at the console 1 inch while the corresponding robotic instrument tip moves only 1/10 of an inch.

*Id.*

54. The Jet Propulsion Laboratory, under contract with the National Aeronautics and Space Administration, and in conjunction with MicroDexterity Systems, Inc., has developed and performed simulated testing of a two-armed robot-assisted microsurgery workstation (RAMS) for eye, brain, ear, nose, throat, face, and hand operations. *See Robot Assisted Microsurgery* (visited Mar. 3, 1998) <<http://robotics.jpl.nasa.gov/tasks/rams/homepage.html>>.

Notes should clarify which of the four factors, if any, should sway the exclusion or inclusion of goods such as surgical equipment.

An automated teller machine (ATM) combines software and a computer-like appearance (keypad and screen) with the physical function of dispensing cash or accepting deposits. Like the surgical equipment, the factors are evenly split between exclusion and inclusion. But, unlike the surgical equipment, the risk and awareness factors favor inclusion, while the ease of copying and purpose factors favor exclusion. The ATM has a low level of physical risk, making the extra protection of Article 2's consumer-friendly laws unnecessary (as well as superfluous because ATMs are not truly consumer items—the banks would probably pay their customers for the economic consequences of ATM malfunctions). In addition, excluding these software programs from Article 2B would needlessly interfere with the transaction between the parties, forcing the buyer to pay for a good (insurance against the risk of software failure) which the buyer would rather not purchase. The bank which contracted for the development or installation of the ATM is probably aware of the software component of the machine. The machine developer probably asked the bank for its preferences in order to program the software accordingly (i.e., the cash limit on a single withdrawal; the number of transactions available to the consumer). Because the bank is aware that the software is a separately functioning part of the ATM, the bank does not have a reasonable expectation that the software is governed by the same laws and warranties as the mechanical parts of the ATM. Therefore, ATMs may easily fall within Article 2B.

But the remaining two factors place ATMs within the exclusion. The ability to copy or transfer the software is low because, although the ATM operates like a computer and may run from a central computer which processes information, the machine itself is not equipped with the loading or copying features of personal computers. If ATM-embedded software fell within the scope of Article 2B, then the goal of Article 2B to group together information which is susceptible to copyright infringement would not be served.

In addition, the purpose of owning the ATM is tied more to the function and service provided by the ATM as a whole than the operation and services provided by the software alone. The owner of the machine may be aware that the software functions separately from the good, but would neither want to own the software separately from the machine itself, nor be satisfied with the software if it were embedded in a different good. The software would be useless without the good in which it is embedded.

Thus, applying the purpose factor to ATMs results in ATMs being excluded from Article 2B coverage.

Again, the application of these four factors to the ATM produces varying results, demonstrating the inherent difficulty in determining Article 2B's scope. The global goal of promoting uniformity in the law will be defeated if one court includes ATM software within the scope of Article 2B, while other courts exclude it.

Machinery used in factories, such as robotic arms, has both mechanical elements and embedded software. When the buyer awareness factor is considered, it seems that the machinery should fall within Article 2B. When the other three factors (the risk factor, the purpose factor, and the ease of copying factor) are considered, however, it seems that the machinery should be excluded from Article 2B. The factory manager who purchased the machinery or robot is probably aware of the software and may have even hired software programmers to modify the software to fit a specific application within the factory. This awareness of the software as a separate element of the machinery suggests that the manager would have a reasonable expectation that the software would be governed by law separate from the mechanical elements of the machinery. Despite being aware of the software as a separately functioning element, the manager or purchaser of the machinery may still think of the robot or machinery as a unit, because the purpose of the machinery is to obtain the services of the whole machine, and not to use the software, alone. The software would not be adequate if it were contained in a different medium. In addition, in some circumstances there is a high risk of physical harm to factory workers, creating a need to regulate this type of software under a law or Article more sensitive to remedies for physical harm than are provided by Article 2B. Because the software that is embedded in machinery is not easily copied or transferred, there is no need for Article 2B's protection, which is intended for easily infringed software.

Three of the factors suggest that the embedded software in factory machinery falls within Article 2B's exclusion. But the opposite result is reached when the buyer's awareness that the software is a separately functioning product and the buyer's reasonable expectation that the software should be governed by another Article are considered. The buyer's awareness is important because the buyer of the product, the factory owner, could have enough bargaining power and money to demand a higher quality product; alternately, the buyer could refuse to pay a high price for the software by requesting the elimination of costly debugging processes. An informed buyer with bargaining power may not need Article



2's extra protection, most of which applies only to consumers.<sup>55</sup> Perhaps the buyer is the cheapest cost-avoider; if the buyer is willing to pay a high price for a perfect product, the buyer can avoid software malfunction and resulting harm.

In the case of factory machinery, three of the factors seem to clearly favor the exclusion of the embedded software. Yet, the awareness and bargaining power of the machinery buyer in this particular fact situation undermine the confidence with which the machinery can be excluded. A clearer articulation of the most important principles underlying Article 2B's exclusion of embedded software may help answer whether Article 2B should be applied to factory machinery.

Home items such as coffee machines and bread machines also contain embedded software to help direct the mechanical elements of the product. As with the above examples, it is unclear whether such items fall within the scope of Article 2B. The awareness factor could place home items within Article 2B depending on the savvy of the consumer or the court's determination of what constitutes a reasonable consumer. The risk factor indicates inclusion, but the purpose and ease of copying factors both indicate exclusion.

The consumer may or may not be aware of the embedded software as a separately functioning element of the product. In coffee and bread machines, the computerized element of the product is highly visible: the exterior of the product usually contains a character display and a keyboard or buttons through which the user can enter information to direct the product. But computerized apparatuses have become so commonplace in household products that it is questionable whether the consumer has an appreciation of the software as a separately functioning element of the product. An uneducated consumer may use coffee or bread machines without questioning how the machine processes information entered through the keyboard or buttons. And whether or not the consumer is actually aware of the software as a separately functioning element of the product, the consumer may still have a reasonable expectation that the software is governed by the same laws as the mechanical elements of the product.

But the risk factor of home items such as coffee and bread machines is low, making consumer protections in addition to those provided by Article 2B unnecessary. If a serious injury did result from the malfunction of software in a bread machine, reasonable consumers might not expect differing awards for injuries caused by mechanical failure or failure of the embedded software.

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55. See *supra* notes 22-22 and accompanying text.

The main purpose of owning such home items as coffee and bread machines is to obtain the services provided by these goods, not the services provided by the software by itself—this indicates that such home items are excluded from Article 2B's scope. Finally, including these kinds of software within the scope of Article 2B does not further the drafters' intention to regulate information susceptible to copyright infringement because there is little likelihood that the software would be copied or transferred.

Many of these ambiguities surrounding Article 2B's exclusion of embedded software may disappear if buyers of items such as factory machinery, ATMs, or surgical equipment form contracts which circumvent the default provisions of Article 2 or Article 2B, through such means as clauses specifying the law which will govern the contract, or clauses specifying warranties or licenses. But the need for detailed contracts only highlights the fact that Article 2B does not reflect the expectations of contractors. As we have seen, the application of these four policy considerations highlights the ambiguity and uncertainty surrounding Article 2B's scope.

#### **B. Software Developed Specifically for the Transaction**

The Section above explains why embedded software is excluded from Article 2B. However, the February 1998 draft explains that not *all* embedded software is excluded. The transaction is covered by Article 2B,<sup>56</sup> even though it is "embedded," if it was *developed specifically for the transaction*.<sup>57</sup> Including software developed specifically for the transaction within the scope of Article 2B reflects one of the factors explored in Part II.A. of this Article: buyer awareness. Because such software is developed specifically for the transaction, the buyer is presumably aware that the software is a separately functioning element of the whole. Therefore, the reasonable buyer would expect the software to be covered by a set of warranties and remedies separate from those that cover the hardware. In addition, the buyer who has software developed specifically for a transaction has more bargaining power, is less in need of the consumer protections under Article 2, and may more prefer to bargain for the risks involved in the software failure than the buyer who is buying software which was not designed specifically for the transaction.

Although it makes sense to include embedded software developed specifically for a transaction within the general scope of Article 2B, the use of the word "developed" may encompass more than software purchased by

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56. See U.C.C. § 2B-103(c)(2)(B) (Feb. 1998 Draft).

57. See *id.*

buyers who have bargaining power and an awareness of the software as a separately functioning element of the good in which it is embedded. The use of the word "developed" may be interpreted in a variety of ways, leading to uncertainty as to what falls within Article 2B. Applying this condition for exclusion may lead to inconsistent results for buyers of goods which contain embedded software and which qualify for the exclusion from Article 2B according to the four factors (awareness, risk, ease of copying, and purpose), but which are not excluded from Article 2B because they were developed specifically for the transaction.

Neither the Reporter's Notes nor the language of the provision itself indicate a special trade meaning or definition of the word "developed." Thus, there are several possible interpretations of "developed": a program designed to meet the needs of a particular client; a code that is written to fulfill the program design; an existing program that is customized for a particular client; or an existing program that is configured for a particular client by activating or deactivating toggle switches within the program. Whether the word "developed" refers to complex programming or programming involved in simple configurations may be an important factor in determining the scope of Article 2B.

Determining the proper interpretation of "developed" requires a consideration of the policies underlying the U.C.C., as a whole. The U.C.C. recommends liberal construction.<sup>58</sup> Therefore, the construction of the phrase "developed specifically for the transaction" should reflect the U.C.C.'s policy to "simplify, clarify, and modernize the law."<sup>59</sup> In addition, the construction should reflect the purpose of and policy behind the provision in question.<sup>60</sup> Although this particular provision does not state its policy or purpose either in the text or the Reporter's Notes, Article 2B's general purpose is to cover all software and information which is licensed and which all have similar characteristics—ease of copying, ease of modifying and unnamed "other uses" that result in express or implied limitations on the licensing of the information or software.<sup>61</sup>

The word "developed" in the context of software programming is inherently complex and ambiguous. As such, without interpretation, the phrase "developed specifically for the transaction" does not carry out policies underlying the U.C.C. It does not simplify and clarify the law, or fulfill the drafter's intention to include all information which is susceptible to

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58. See U.C.C. § 1-102(1).

59. See *id.* § 1-102(2).

60. See *id.* § 1-102 cmt.1.

61. See U.C.C. § 2B-103, Reporter's Note 3 (Sept. 25, 1997 Draft).

copyright abuse within the scope of Article 2B. And, even if the software is developed specifically for the transaction, it is embedded, and therefore is not easily copied or modified. Embedded software within the meaning of the exclusion is, by its nature, embedded in a good that is not equipped with the technology or mechanics to enable the user to copy or transfer the software. Regardless of whether the good was developed specifically for the transaction, including this type of embedded software within the scope of Article 2B does not fulfill the drafters' intentions.

Therefore, placing specifically developed embedded software within the scope of Article 2B must fulfill some purpose other than the drafters' desire to include all information susceptible to copyright infringement and all information subject to express restrictions. As neither the U.C.C. nor section 103 of Article 2B mention any additional purposes or policies underlying Article 2B's embedded software exclusion, it may be helpful to consider the factors discussed, *supra*, in Part II.A.<sup>62</sup> The applicable factors included: the purpose of owning the good, the risk associated with the malfunction of the good, and the buyer's awareness or expectation of the software as a product which functions separately from the good.<sup>63</sup>

Neither the risk associated with the malfunction of the good nor the purpose of owning the good would change if the sole difference between embedded software in similar goods was the extent to which the software was or was not developed specifically for the transaction. One robotic arm containing embedded software which was developed specifically for the buyer has the same risk of harm due to malfunction as ten robotic arms sold to ten factories, all containing identical embedded software. Likewise, the purpose of owning those robotic arms does not change from arm to arm where one arm contains software developed specifically for the transaction, while the other arms do not. All the robotic arms were purchased for the services performed by the arm, and not for the services provided by the software, alone.

But when embedded software is developed specifically for the transaction, it may create a heightened level of awareness in the buyer—the cost and time involved in developing the software may have signaled to the buyer that the software is a separately functioning element of the product. Therefore, the buyer may expect that the embedded software is covered under a separate article of the U.C.C.

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62. See *supra* Part II.A.

63. The fourth factor, the ease of copying, was discussed in the preceding paragraphs in the context of fulfilling the drafters' intentions to include all information particularly susceptible to copyright infringement.

If embedded software which was developed specifically for the transaction falls within Article 2B because of the buyer's awareness, an interpretation of the word "developed" should incorporate the amount of money and time needed for the development, and the involvement required of the buyer. Of the four interpretations of development suggested, *supra*, designing a program requires the most time, money, and client involvement, and is most likely to make the buyer aware of the software as a separate element of the product.

Customizing an existing program or configuring a program by activating or deactivating toggle switches would probably result in a lower awareness than designing a new program for a buyer. Customizing an existing program requires rewriting portions of code or adding code to suit the needs of a particular client. In this case, someone has already designed the program and the majority of the code has been written. The costs of rewriting small portions of the code are much less than the costs of designing a new program. When customizing, the seller or producer of the software needs much less client information because the client may use the product to perform some common service—the seller only needs information on small details specific to the client to customize the program.

An example of customizing an existing program is the creation of an accounting system for advertisers or law firms. The program provider may have designed a basic accounting program already, but must rewrite certain parts of the program to meet the differing needs of the law firms or advertisers. For example, the billing categories into which the program saves items or the client information required from a user on an input screen may need modification.

The configuration of an existing program is also low cost and requires minimal buyer involvement. When configuring a program, the seller does not write or revise any code in the program. Rather, the seller needs only to activate or deactivate certain toggles or features of the program. One particularly common example is home alarm systems. Home alarm systems work through the operation of mechanical detection equipment and software. This mechanical detection equipment differs in quality and sophistication from system to system, but the software itself is consistent among models and manufacturers of alarm systems. The alarm systems must be configured to each house or business premises. The customization involves the customer's choices of certain "points of contact" in the house (usually doors or windows) which will trip detection devices if the contact is broken. The chip containing the software that activates the alarm must then be configured to reflect the choices. The program configuration is

accomplished with a laptop computer<sup>64</sup> and may even be performed by hand on the self-installation models of home alarm systems sold in stores such as RadioShack.<sup>65</sup> The configuration does not substantially change the program, but it activates or deactivates certain features of the program that the consumer did or did not choose to install. The main function of the software is to report, via phone lines, any violation of a contact point (known as a "trip"), to a computer in a central control station. The computer in the central control station can identify the point of the trip based on the information delivered by the software and call an emergency number.<sup>66</sup>

After configuration, the programming differs slightly for each home alarm system. However, the basic program which provides the framework does not significantly differ between programs used by customers with small homes who buy average alarm systems and large commercial businesses with elaborate customized systems.<sup>67</sup> If the alarm system in a single house does not work effectively, then industry experts would consider it a fault in the configuration, rather than a fault in the software program, itself.<sup>68</sup>

When the development of custom software requires substantial amounts of time, money, and buyer involvement, it seems that a buyer's awareness of the separate nature of the software will usually be heightened. But the lower cost and customer involvement of customization or configuration does not necessarily mean that the buyer of customized or configured embedded software is not aware of the separate nature of the software, also. In the case of home alarm systems, the customer probably is aware of the software as a separately functioning part of the alarm system.

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64. The laptop can also program the chip with a copy of the software, making the chip seem closer to a copy of a program, similar to the disk copies of software which are excluded from Article 2B. *See* Telephone Interview with Bill Winter, former vice-president of Wells Fargo, Inc. (Feb. 16, 1998) (on file with author).

65. *See id.* In a self-installed alarm system, the customer does not use a laptop to program the software. Instead, she customizes the program by sliding levers called "dip-switches" to activate or deactivate trip points. The customization of the program is manual, and does not require the use of a computer. *See id.* One RadioShack model currently available (catalog model number 49-485) lists "customizing" as one step in the installation instructions, but does not mention a computer. In this particular model, the customer must connect wires to certain breaker points in a central box instead of sliding dip-switches. The customer must also program a "control center" with passwords, designated trip points and alarm power schedules.

66. *See id.*

67. *See id.*

68. *See id.*

The awareness factor may help determine which types of “developed” software should fit within the exclusion. But even if a buyer is aware of the software’s separate nature, the risk due to malfunction of the embedded software may still be high. In those cases, the buyer might be better protected under Article 2 or other law, but may not be in a position to bargain for terms which differ from those contained in Article 2B; therefore, the buyer may still need the additional protection of the Article 2B exclusion.<sup>69</sup>

The drafters may have intended to include buyers with a high degree of bargaining power within the scope of Article 2B by formulating this “specifically developed” exception to the embedded software exclusion. If this was its purpose, then it has not been successful. Consumers of home alarm systems have little bargaining power, yet do not fall under the exclusion because the alarms were “developed” specifically for their transaction.

### **C. Proposed Changes to the Language of the Embedded Software Exclusion**

The provision excluding embedded software from the scope of Article 2B is ambiguous, producing uncertain results. Whether or not a certain type of software is embedded within the meaning of the exclusion is unclear. Products such as computerized surgical equipment, ATMs, factory machinery, and home appliances may or may not fall within the exclusion. The ambiguous language of section 103 could also lead to the arbitrary exclusion of certain embedded software just because the embedded software was configured to fit the needs of the buyer (failing the condition to the exclusion that the software cannot have been “developed specifically for the transaction”).

This Article proposes a more descriptive exclusion for embedded goods by listing two of the qualities of embedded software within the definition: ease of copying and purpose. The use of only these two factors is adequate to protect reasonable consumer expectations.

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69. The exclusion of embedded software is not applicable if the software is “subject to a separate license with the transferee of the goods.” U.C.C. § 2B-103(c)(2)(C) (Feb. 1998 Draft). The bargaining power of the buyer may underlie this condition, but it also applies to cases in which the embedded software was not developed specifically for the transaction. If bargaining power of the buyer is the underlying policy of both of these conditions, then there are two ways to tell that the buyer has sufficient bargaining power to include the embedded software within the scope of Article 2B: the buyer has bargained a specific license just for the software, or the buyer has sufficient money to require the specific development of a program.

Although the risk factor is not specifically listed in this proposed definition, the purpose and ease of copying factors should encompass all embedded software which is not contained in a computer or disk, and, therefore, all items which may have some level of risk. The other factor not included in the descriptive listing is the awareness factor. The condition that embedded software is not within the exclusion if it has been "developed specifically for the transaction" should, once rewritten, sufficiently address this factor.

The February 1998 draft of the language excluding embedded software simply states that Article 2B does not apply to "a sale or lease of a computer program embedded in goods and sold or leased as part of the goods unless ... the goods are merely a copy of the program or are an information processing system in which the program is to operate."<sup>70</sup> The definition of embedded software should use more descriptive language, such as:

Article 2B does not apply to "a sale or lease of a computer program embedded in goods and sold or leased as part of the goods, if 1) the computer program is not in a form easily copied or transferred, and 2) obtaining the services of the goods is the purpose of the transaction."

Language in the March 1998 draft also supports a broad interpretation of the term "embedded software," using the purpose of the good as the principal determinant.<sup>71</sup> According to the Reporter's Notes, embedded

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70. U.C.C. § 2B-103(c)(2) (Feb. 1998 Draft).

71. See U.C.C. § 2B-103 Reporter's Note 5(c) (Mar. 1998 Draft). The Reporter's Notes state that:

[The examples of computers and navigation software] together with the general principle of the exclusion set two bright lines at either end of a continuum. Article 2B does not apply to cars, toasters, washing machines and other traditional goods, even if part of the goods consists of embedded software.... Within these two extremes lies an inherently gray area. As modern products are increasingly automated and operated by digital software, it is important to provide guidance on the relative distribution of treatment between this Article and Article 2 or 2A in this gray area. Under the exclusion here, embedded software is covered by Article 2B if contained in a product whose *primary purpose* is to provide access to the functional or other attributes of the program, as contrasted to performing other information processing activities. Thus, while a television set in modern practice is increasingly driven by computer programs, it remains a television set whose purpose is to provide television program reception unless or until the system evolves into something more or different in which a primary purpose is to offer software processing capability.

*Id.* (emphasis added).



software is excluded from the scope of Article 2B unless its "primary purpose is to provide access to the functional or other attributes of the program."<sup>72</sup> These notes clearly exclude computerized surgical equipment, ATMs, factory machinery, and home appliances because the purpose of each of these goods goes beyond providing access to the services of the software by itself.<sup>73</sup>

The condition to the February 1998 draft's exclusion that the software cannot have been "developed specifically for the transaction" is also not clear enough to achieve the exclusion of embedded software with uniformity and without arbitrary results.<sup>74</sup> If the underlying policy of the condition to the exclusion for embedded software were to protect only those buyers of goods containing embedded software who lack bargaining power,<sup>75</sup> then using Article 2B's definition of a mass market transaction to determine the extent of the exclusion might limit the application of the condition appropriately.<sup>76</sup> If the condition were to apply only to transactions which were not mass market transactions, then the condition to the exclusion would not apply to consumers or to licensees who acquired "the information in a retail transaction under terms and in a quantity consistent with an ordinary transaction in that marketplace."<sup>77</sup> The definition of a

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72. *Id.*

73. *See supra* Part II.A.

74. *See* U.C.C. § 2B-103(c)(2)(B) (Feb. 1998 Draft).

75. *See supra* Part II.B.

76. *See* U.C.C. § 2B-102(31) (Feb. 1998 Draft).

77. *Id.* The full text of the definition of a mass market transaction reads:

(31) "Mass-market transaction" means a consumer transaction and any other transaction in information directed to the general public as a whole under substantially the same terms for the same information with an end-user licensee. To qualify as a mass-market transaction if the licensee is not a consumer, the licensee must acquire the information in a retail transaction under terms and in a quantity consistent with an ordinary transaction in that marketplace. The term does not include:

(A) a contract for redistribution;

(B) a contract for public performance or public display of a copyrighted work;

(C) a transaction in which the information is or becomes customized or otherwise specially prepared for the licensee;

(D) a site license, or

(E) an access contract not involving a consumer.

*Id.* This definition seems to create the same problem as the phrase "developed specifically for the transaction" because it provides that a mass market transaction does not include "a transaction in which the information is or becomes customized or otherwise specially prepared for the licensee." *Id.* However, the Reporter's Notes indicate that this is simply a drafting oversight and that the customization stricture does not apply to con-

"mass market" in Article 2B is used in provisions generally protecting buyers with less bargaining power.<sup>78</sup> Therefore, its use in the condition to the embedded software exclusion furthers this purpose of protecting buyers with less bargaining power. The use of the definition affords these buyers the greater protection of laws other than Article 2B by excluding them from the scope of Article 2B, even if the embedded software was developed specifically for the mass market transaction.<sup>79</sup>

Using the term "mass market transaction" would also prevent the uncertainty created by differing interpretations of "developed" in the phrase "developed specifically for the transaction." Because both consumers and non-consumers who buy goods with configured or customized embedded software can be included within the definition of "mass market transactions," the remaining uncertainties surrounding the interpretation of the terms configured and customized are minimized.

The February 1998 draft's condition to the embedded software exclusion reads that a program is not excluded if "the program was developed specifically for the transaction."<sup>80</sup> If the condition to the embedded software exclusion included Article 2B's "mass market transaction" definition by stating that "the program is not within the exclusion if the program was designed or written specifically for a transaction which was not a mass market transaction," then consumers and other mass market licensees would be protected from the harms caused by varied interpretations of the word "developed."

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sumers. *See id.* § 2B-102, Reporter's Note 29 ("[W]here the information product is customized for the licensee *and that licensee is not a consumer*, the transaction lacks the anonymous, non-negotiated character of the mass market.") (emphasis added).

Another problem with the application of this definition to the exclusion of embedded software relates to the types of retail markets in which a mass market transaction takes place: arenas in which the general public shops, like grocery stores, malls, gas stations and department stores. While the purchase of home appliances might occur in these arenas, home alarm systems, for example, are not sold in stores. But this restrictive definition of a retail market in which mass market transactions take place may also be an oversight by the drafters. It does not include purchases made on the Internet or "anonymous" and "non-negotiated" purchases. However, the Reporter's Notes indicate that an Internet transaction might be considered a mass market transaction. *Id.* (noting that the definition of mass market transactions includes consumer Internet or on-line transactions).

78. *See, e.g., id.* § 2B-208 (enforcing form contracts in mass market transactions only if there is an opportunity to review and if there is an affirmative manifestation of assent); *id.* § 2B-502(2)(B) (giving a mass market licensee the right to transfer a non-exclusive license without the consent of the licensor).

79. *See id.* §§ 2B-102(31); 2B-103(c)(2)(B).

80. *Id.* § 2B-103(c)(2)(B).

The March 1998 draft of Article 2B removed the condition to the embedded software exclusion, thus eliminating any problems that would have been created by arbitrarily including embedded software within the scope of Article 2B.<sup>81</sup> Although the Reporter's Notes do not comment on it, the deletion may reflect intentions to further broaden the exclusion and to avoid ambiguities in its interpretation.

If the language of the exclusions to Article 2B were changed as suggested, *supra*, then the exclusions would be clearer and not overbroad. This would allow Article 2B to achieve the drafters' stated purpose of including all licensed software and information which have such similar characteristics as ease of copying or modification.<sup>82</sup> In addition, the interpretation of the exclusion provisions of Article 2B would be more uniform because of the clearer language, resulting in more certainty to software and technology licensing and contracting.

### III. HYBRID TRANSACTIONS AND THE MERELY INCIDENTAL EXCLUSION

Like the language in the provision excluding embedded software, the language of the provision governing hybrid transactions and merely incidental information creates uncertainty in software and technology licensing and contracting. This is because varying interpretations could lead to inconsistencies in the treatment of hybrid transactions and incidental information. Three tests govern the application of Article 2B to hybrid transactions involving both Article 2B subject matter and goods or services: the merely incidental test,<sup>83</sup> the gravamen of the action test,<sup>84</sup> and the predominant purpose test.<sup>85</sup>

The merely incidental test arises from language added to the February 1998 draft of Article 2B and continued as part of the March 1998 draft with only minor changes.<sup>86</sup> It excludes information which would have been governed by Article 2B if the information is either merely incidental

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81. See U.C.C. § 2B-103(b)(2)(C) (Mar. 1998 Draft).

82. See U.C.C. § 2B-103 Reporter's Note 3 (Sept. 25, 1997 Draft).

83. See U.C.C. § 2B-103(b)(2)(C) (Mar. 1998 Draft).

84. See *id.* § 2B-103(c)(1) & Reporter's Note 3.

85. See *id.* § 2B-103(c)(2)(A).

86. See *id.* § 2B-103(b)(2)(A); U.C.C. § 2B-103(a)(1) (Feb. 1998 Draft). In addition, the Reporter's Notes to the merely incidental exclusion are identical in each draft. See U.C.C. § 2B-103, Reporter's Note 5(a) (Mar. 1998 Draft); U.C.C. § 2B-103, Reporter's Note 4 (Feb. 1998 Draft); *but c.f.* U.C.C. § 2B-103, Reporter's Note 2(d) (Aug. 1, 1998 Draft). This Article mainly cites to the February 1998 draft, but applies equally to both drafts because of the similarity of the provisions.

to services being performed under the contract,<sup>87</sup> or is only a minor part of any transaction.<sup>88</sup> For example, an attorney may provide information to a client as a service, governed by common law, but that information may be restricted by contract. Because the restriction on the information is merely incidental to the larger service—legal counseling—the information does not fall within the scope of Article 2B.<sup>89</sup> Article 2B also would not apply to a license or restriction on information where it is only a minor part of a larger transaction which predominantly involves services.

If the licensing or software contract does not satisfy the merely incidental test, then a gravaman of the action test determines which laws govern the information, services, or goods involved in the transaction.<sup>90</sup> Under the gravaman of the action test, information would be regulated by Article 2B, while goods would be regulated by Article 2 or 2A. For example, if a computer configured by software programs malfunctioned, Article 2B would govern the software programs, while Article 2 would govern the computer hardware itself (i.e., the mechanical parts of the computer's memory, such as chips and boards).

Unlike the merely incidental and gravaman of the action tests which apply to the actual transactions, the predominant purpose test is used only when determining which law will govern contract formation issues in a hybrid transaction.<sup>91</sup> If Article 2B subject matter is the predominant purpose of the transaction, then Article 2B governs the contract formation of the entire transaction. Although Article 2B may govern contract formation for the goods and even the services involved in a hybrid transaction, it does not govern the services in matters which do not involve contract formation.<sup>92</sup> For example, Article 2B would govern the contract formation issues for a contract involving the sale of accounting software and instruction to use the software. Even though the contract involves both software and services, Article 2B would govern the contract formation issues of both the software and the services as long as the predominant purpose of the contract was to provide the accounting software, not the instruction in using the software.

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87. See U.C.C. § 2B-103, Reporter's Note 4 (Feb. 1998 Draft).

88. See *id.*

89. See U.C.C. § 2B-104, Reporter's Note 2 (Aug. 1, 1998 Draft).

90. See U.C.C. § 2B-103(c)(1) (Mar. 1998 Draft).

91. See *id.* § 2B-103(c)(2)(A) ("The contract formation rules of this article apply to the entire transaction if: (A) the contract includes services that are not within this article, but the subject matter that is within this article is the predominant purpose of the transaction ...").

92. See *id.* (applying the predominant purpose test only to issues of contract formation).

### A. The Merely Incidental Test as an Exclusion of Licensed Information that is Incidental to Services

The first element of the merely incidental test determines whether licensed information is incidental to services performed under a contract, and therefore excluded from the scope of Article 2B. The changes in the language of the provision during the drafting history of Article 2B provide some guidance for interpretation, while the language of the provision itself and the Reporter's Notes accompanying it provide further guidance. After examining these considerations, this Article suggests an expansion of the exclusion to reach licensed information incidental to services which may have been inadvertently included within the scope of Article 2B by the current language of the provision.

Previous drafts of the provision delineating the scope of Article 2B applied both Article 2 and Article 2B to any hybrid transaction, not just transactions which involved software or licensing on a more than incidental level.<sup>93</sup> Although the previous drafts of Article 2B seemed intent on

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93. See U.C.C. § 2B-103(b) (Sept. 25, 1997 Draft) ("[I]f another article of [the Uniform Commercial Code] applies to a transaction, this article does not apply to the part of the transaction involving the subject matter governed by the other article except to the extent that this article deals with financial accommodation contracts."). Section 2B-103(c) of the Sept. 25, 1997, draft states:

If a transaction involves both information and goods, this article applies to the information and to the physical medium containing the information, its packaging, and its documentation, but Article 2 or 2A governs standards of performance of goods other than the physical medium containing the information, packaging, or documentation pertaining to the information. If a transaction includes information covered by this article and services outside this article or transactions excluded from this article under subsection (d)(1) or (2), this article applies to the information, physical medium containing the information, and its packaging and documentation.

*Id.* This earlier draft of the scope provision intended to cover licensing or software governed by Article 2B regardless of how intermingled the software had become with goods or transactions not covered under Article 2B. The Reporter's Notes state that the "primary rule applies each [article] to its particular subject matter" in mixed transactions. *Id.* § 2B-103, Reporter's Note 4 (Sept. 25, 1997 Draft). The Reporter specifically rejected the predominant purpose test from common law. See *id.* The predominant purpose test is primarily used in the Article 2 context when determining whether to apply Article 2 to a transaction involving both goods and services. If the purpose of the transaction is predominantly to sell goods, then it is covered under Article 2; but if the purpose of the transaction is predominantly to sell services, then it is covered by other law. See U.C.C. § 2-102 (1994); JAMES J. WHITE & ROBERT S. SUMMERS, UNIFORM COMMERCIAL CODE § 1-1 (4th ed. 1995). Note that, under the predominant purpose test, Article 2 may apply to a sale consisting almost entirely of services as long as the predominant purpose of the transaction is the sale of a good. For examples of applications of the predominant purpose

applying Article 2B as broadly as possible, notes from the newest draft of Article 2B indicate that the drafters are no longer interested in as broad an application.<sup>94</sup>

The language excluding information which is incidental to services in the February 1998 draft limits the scope of Article 2B in two ways.<sup>95</sup> The first type of exclusion required by the language of Article 2B occurs when information and the contract or license governing the information is "an inherent incident of excluded services."<sup>96</sup> The Reporter's example of an inherent incident of excluded services is the information a lawyer might give to a client, like a memo, which has certain restrictions on it.<sup>97</sup> Because advice from a lawyer is a service which does not fall under Article 2B, the restricted information incidental to the service also does not fall

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test, see *United States ex rel. Bartec Indus., Inc. v. United Pac. Co.*, 976 F.2d 1274 (9th Cir. 1992), amended, 15 F.3d 855 (9th Cir. 1994); *St. Anne-Nackawic Pulp Co. v. Research-Cottrell, Inc.*, 788 F. Supp. 729 (S.D.N.Y. 1992); *Hope's Architectural Prods., Inc. v. Lundy's Constr., Inc.*, 781 F. Supp. 711 (D. Kan. 1991), *aff'd*, 1 F.3d 1249 (10th Cir. 1993). Instead of the predominant purpose test used in Article 2 mixed transaction cases, earlier versions of Article 2B used a gravamen of the action test. See U.C.C. § 2B-103, Reporter's Note 4 (Sept. 25, 1997 Draft).

94. The Reporter's Notes in the February 1998 draft of Article 2B state that "[t]he article does not cover all contracts in [the copyright and information] industries or all contracts involving information. It focuses on license contracts and on transactions typically conducted in areas of commerce associated with digital technologies." U.C.C. § 2B-103, Reporter's Note 1 (Feb. 1998 Draft).

Earlier drafts of section 2B-103 were much broader in scope. A February 1996 draft provided that the article "applies to transactions in information, including licenses, access contracts, unrestricted transfers of information, sales of copies of information and software contracts, and to agreements to support, maintain, develop, or modify information." Unlike the merely incidental test which limits the scope of the latest draft of Article 2B, the earlier drafts included transactions as long as "information exists at the time of the contract, is expected to come into being after the contract is formed, or is to be developed, discovered, compiled, or transformed as part of performance of the agreement ...." *Id.* § 2B-103(a).

95. See *id.* § 2B-103, Reporter's Note 4.

96. *Id.* Earlier versions of this exclusion were more specific. See U.C.C. § 2B-103(d)(3) (Feb. 2, 1996 Draft) (excluding the application of Article 2B to "a contract for professional services involving performance by a member of a regulated profession with respect to services commonly associated with regulated aspects of that profession"). Article 2B no longer requires the profession to be regulated. The only requirement is that the transfer of information be "incidental." See U.C.C. § 2B-103, Reporter's Note 4 (Feb. 1998 Draft). One reason given for the exclusion of information transferred pursuant to professional services was the fact that the professions were already regulated. See U.C.C. § 2B-103, Reporter's Note 7 (Feb. 2, 1996 Draft). The fact that the exclusion is now extended to professionals who are not regulated leads to the conclusion that another policy is really behind the exclusion in its current form.

97. See U.C.C. § 2B-103, Reporter's Note 4 (Feb. 1998 Draft).

under Article 2B. However, the scope of the exclusion is not clear because the Reporter's Notes suggest that a fact specific analysis is necessary to determine whether the information is incidental.<sup>98</sup>

The scope of the exclusion must extend beyond the Reporter's only example because this example concerns services and transfers of information from a regulated professional.<sup>99</sup> Services of regulated professionals are already specifically excluded under section 2B-103(c)(4) of Article 2B.<sup>100</sup> and had been excluded even in the earliest drafts.<sup>101</sup> This new addition to the language of the scope provision must therefore indicate a further limitation on the scope of Article 2B.

The further limitation on the scope of Article 2B also signals a different policy underlying the exclusion. In earlier drafts, the policy of the exclusion was that professionals who were already regulated did not need to be regulated under Article 2B.<sup>102</sup> This original policy cannot apply to the expansion of the exclusion to non-regulated professions. By expanding coverage of Article 2B to services beyond the services of regulated professionals, the drafters step outside the original policy of the exclusion.

According to the Reporter's Notes, the policy behind the exclusion now seems to lie in the characterization of the transaction as a whole. The information should be excluded because it is inherent in the service—the transfer of information and the service should be treated as a single unit under the law that governs the service.<sup>103</sup>

The extent of this new exclusion is difficult to determine. The Reporter's Notes recognize that the merely incidental exclusion does not ap-

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98. *See id.* ("Of course, as various personal service provide[r]s engage in related, but broader activities, Article 2B applies.").

99. *See id.*

100. *See id.* § 2B-103(c)(4).

101. *See* U.C.C. § 2B-103(d)(3) (Apr. 2, 1996 Draft) (excluding "a contract for professional services involving performance by a member of a regulated profession with respect to services commonly associated with regulated aspects of that profession").

102. *See id.* § 2B-103, Reporter's Note 7(b) (assuming that "there is no need to deal with these contracts to the extent that they fall within general areas of professional regulation"). The Reporter's Notes also indicate that the regulated professionals are only governed by Article 2B if they are engaging in activities which are not regulated by the profession. *See id.*; U.C.C. § 2B-103, Reporter's Note 7(b) (Feb. 2, 1996 Draft). The Reporter's Notes in a later draft even state that "the exclusion only pertains to regulated services and not to other contracts or services" for the purposes of "avoid[ing] confusion between the interplay of this Article and the regulatory standards of regulated professions." U.C.C. § 2B-103, Reporter's Note 6 (Dec. 12, 1996 Draft). This exclusion of transfers of information in regulated professions persists up to the November 1997 draft. *See* U.C.C. § 2B-103, Reporter's Note 5(a) (Nov. 1, 1997 Draft).

103. *See* U.C.C. § 2B-103, Reporter's Note 4 (Feb. 1998 Draft).

ply to services such as software development.<sup>104</sup> As in the context of the embedded software exclusion,<sup>105</sup> the Reporter's Notes give examples at two opposite extremes. An example of merely incidental information excluded from the scope of Article 2B is the expressly restricted memorandum or document prepared by a lawyer for a client in the course of performing professional services. At the opposite end of the spectrum lies an example of information which is not merely incidental, even though it is performed in the course of services—information transferred by an “independent contractor hired to develop software.”<sup>106</sup>

These two examples do not inform a fact-specific application of Article 2B to services. Like the embedded software exclusion, there are cases which fall between the two examples—some services which involve the transfer of information expressly limited by contract may or may not fall within the merely incidental exclusion. For example, the services of a professional photographer at a wedding would result in: 1) the transfer of information (photographs) which fit within Article 2B's definition of information,<sup>107</sup> and 2) an express contractual restriction on the use of the information (an explicit restriction on the reproduction of the photographs). However, it is unclear whether the merely incidental exclusion would apply to this transaction. The photographer is not a regulated professional, nor is he in entertainment services, so he does not fit within the exclusion in section 2B-103(c)(4).

He may still fall within the scope of Article 2B depending on other factors, such as the type of equipment he uses. If he uses film which may be loaded onto computer software, then he may still fit within the scope of Article 2B. The fact that providers of all types of services routinely use computer software makes the application of this exclusion more difficult than it first appears.

Since the drafters seem to favor the treatment of services and the transfer of information inherent to services as one unit, governed by one law, it would make sense to expand the exclusion in section 2B-103(c)(4) to *all* transfers of information inherent in services, with a condition that the services cannot involve computer software development or services supplying support, maintenance, or modification of software. This conditional exclusion would resemble the exclusion for embedded software, making the structure of the exclusions to Article 2B more consistent.

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104. *See id.*

105. *See supra* Part II.A.

106. U.C.C. § 2B-103, Reporter's Note 4 (Feb. 1998 Draft).

107. *See id.* § 2B-102(23) (stating that the definition of information includes “images”).



Expanding the exclusion of Section 2B-103(c)(4) in this way follows the trend of reducing the scope of Article 2B. It supports the apparent policy of Article 2B to exclude all documents which are unrelated to software or computers. The drafters have already narrowed the scope of Article 2B by excluding the entertainment industries,<sup>108</sup> books and other printed material,<sup>109</sup> banking services,<sup>110</sup> and most patents.<sup>111</sup> Instead of continuing to draft language excluding specific industries, Article 2B should strive for a more general exclusion that can flexibly accommodate all industries that are served by the policy of the exclusion. In addition, expanding the exclusion under section 2B-103(c)(4) and eliminating the language about transfers of information incidental to services in the Reporter's Notes would result in a clearer merely incidental test which applies only to one literal definition of the word "incidental" instead of two.

Instead of excluding "a contract for performance of professional services by a member of a regulated profession,"<sup>112</sup> this Article proposes an expansion of the exclusion by changing the language to exclude "a contract for the performance of services which do not involve software development or services under section 2B-103(a)(2)."<sup>113</sup>

By expanding the language of the exclusion, the exclusion will achieve the policy evident in the Reporter's Notes to exclude all services that contain incidental transfers of licensed information. Since the current language may have been interpreted to exclude only licensed information incidental to services provided by those in a regulated profession or in entertainment services, it did not achieve the purpose of treating services and information incidental to those services as one unit governed by one law.

#### **B. The Merely Incidental Test as an Exclusion of Licensing and Software Contracts that are a Minor Part of a Transaction**

The second element of the merely incidental test determines whether Article 2B subject matter is a minor part of a transaction, and, therefore,

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108. *See id.* § 2B-103(c)(4).

109. *See id.* § 2B-103, Reporter's Note 3.

110. *See id.* § 2B-103(c)(3).

111. *See id.* § 2B-103(c)(1).

112. *See* U.C.C. § 2B-103(c)(4) (Feb. 1998 Draft).

113. *Cf.* Letter from Roland E. Brandel et al., to the Banking Industry Article 2B Group (Nov. 19, 1997), available at <<http://www.2Bguide.com/docs/mofol.html>> (visited Nov. 23, 1998) (suggesting a similarly broad exclusion of "the provision of a service as to which access to, use of, or processing information is not the primary purpose of the service, but is the technology incidentally used to accomplish the service"). The March 1998 draft of Article 2B achieved an expansion of the exclusion by eliminating the language referring to regulated professions, instead excluding agreements for personal services from the scope of Article 2B. *See* U.C.C. § 2B-103(b)(2)(E) (Mar. 1998 Draft).

excluded from the scope of Article 2B. Under this element, a licensing or software contract is excluded if it is "no more than a minor part of a transaction" not governed by Article 2B.<sup>114</sup> The Reporter states that the test for whether the information is a minor part of a transaction is whether the "licensed information is so small a part of the transaction that it would be cumbersome, confusing and awkward to apply Article 2B to that small part of the transaction."<sup>115</sup>

Although the Reporter's Notes clearly state that the merely incidental test is not a predominant purpose test,<sup>116</sup> this element of the merely incidental test is closely related to the predominant purpose test. The predominant purpose test is valuable because it saves time, and it is less costly than administering many different laws for one transaction.<sup>117</sup> Many jurisdictions use the predominant purpose test for these reasons when choosing between the application of Article 2 or the common law in a hybrid transaction.<sup>118</sup> The merely incidental test lists the same policy reasons for its application: "it would be cumbersome, confusing and awkward to apply Article 2B to that small part of the transaction."<sup>119</sup> Yet, in a situation in which the contracts were not merely incidental, Article 2B applies a gravamen of the action test in which the subject matter of Article 2B, such as software and licensed information, would be governed by Article 2B, while the subject matter of common law or other articles in the U.C.C., such as services or goods, would be governed by the applicable common law or article in the Code.<sup>120</sup> If the contracts were not incidental, the problems of applying more than one law would seem to be magnified.

By instituting both tests, the drafters get the worst of both worlds: litigation about the application of the merely incidental test (whether that part of the transaction is minor enough) and the cumbersome application of many laws under the gravamen of the action test. It is confusing to have both policies instituted within Article 2B. Since Article 2B was drafted to supply an appropriate body of law to the realm of software and licensing,

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114. U.C.C. § 2B-103 Reporter's Note 4 (Feb. 1998 Draft).

115. *Id.*

116. *See id.* ("What is meant here is not simply that the personal services predominate or that obtaining the services was the predominant purpose of the transaction ...").

117. *See Hudson v. Town and Country True Value Hardware, Inc.*, 666 S.W.2d 51, 54 (Tenn. 1984) (holding that the predominant purpose test applied to a hybrid transaction because the application of more than one law would cause "insurmountable problems of proof in segregating assets and determining their respective values ... to apply two different measures of damages.").

118. *Id.*

119. *See* U.C.C. § 2B-103, Reporter's Note 4 (Feb. 1998 Draft).

120. *See id.* § 2B-103(d).

then it seems that the gravaman of the action test should apply to all transactions, regardless of the amount of the transaction concerning software. In addition, applying the gravaman of the action test to transactions involving minor amounts of software will probably not create cumbersome problems because the software is also likely to be a minor part of the litigation. Article 2B bears much similarity to Article 2, so it should not be too cumbersome to apply both Articles. Instead of keeping the February 1998 draft language, that Article 2B does not apply to a "license of a trademark, trade name, trade dress, patent, and related know-how, unless it is part of a license that is otherwise within this article,"<sup>121</sup> the drafters should eliminate this language and rely only on the gravaman of the action test contained in section 2B-103(d).

Eliminating this language and relying only on the gravaman of the action test avoids the problems associated with the predominant purpose test: hindsight decisions about the predominant purpose of the transaction, further litigation about the court's decision, and the application of inappropriate law to part of the transaction.<sup>122</sup> Focusing on one test, instead of trying to apply both the gravaman of the action test and the predominant purpose test in different scenarios, also simplifies the law and helps promote certainty in the application of Article 2B because there will be less room for ad hoc decisions about the type of test to apply and the type of licensed information to exclude from Article 2B.

#### IV. CONCLUSION

The drafting of Article 2B fills a void in the U.C.C. by addressing the licensing and sale of software. If states adopt this uniform law, the software industry and consumers will benefit through decreased transaction costs. These benefits will only occur if Article 2B is drafted with default rules that reflect actual practices and expectations in the commercial world, and if the scope of Article 2B is clear.

The scope of the February 1998 draft of Article 2B is not clear enough to achieve a uniform application of Article 2B. The language of exclusions for embedded software and merely incidental information undermine the uniform application of Article 2B. The ambiguous language of the embedded software exclusion may lead to arbitrary exclusions of software depending on the interpretation of "embedded software" as a term of art. Instead of the ambiguous language in the February 1998 and March 1998 drafts of Article 2B, which do not illustrate the application of

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121. *Id.* § 2B-103(c)(1).

122. *See id.* § 2B-103, Reporter's Note 6.

the term "embedded software," the drafters should use more descriptive language. This more descriptive language, based on the principles of the embedded software exclusion should guide the interpretation and application of this provision.

The February 1998 draft's ambiguous language of the condition to the exclusion regarding software that may not have been "developed specifically for the transaction" may lead to arbitrary results. A court interpreting "developed" to mean "designed, written, customized, or configured" may include software within the scope of Article 2B, whereas a court interpreting "developed" to mean only "designed" may not. Instead, the drafters should limit the application of this condition to non-mass market transactions, or eliminate the condition, as the drafters did in the March 1998 draft.

The February 1998 draft excluding merely incidental information and licenses creates two problems in the scope of Article 2B: 1) the exclusion of information incidental to services is a confusing repetition of the exclusion for services of regulated professions, and 2) the exclusion of information, if it is a minor part of a hybrid transaction, is contrary to the gravaman of the action test used for other hybrid transactions. Instead of excluding information which is incidental to services through the merely incidental test, the drafters should expand the exclusion for services from regulated professions to include all personal services, as the drafters have done in the March 1998 draft of Article 2B, and eliminate the reference to information which is incidental to services in the notes on the merely incidental exclusion. And, instead of excluding information which is a minor part of a hybrid transaction based on a merely incidental test, the drafters should eliminate the test in favor of the gravaman of the action test, thus promoting the application of the appropriate body of law regardless of the importance of the subject matter to the transaction. Use of the gravaman of the action test would ensure the consistency of the scope of Article 2B and avoid litigation about whether an information transfer or license constitutes an incidental part of the transaction.

By instituting these changes, the drafters will achieve more uniform application of Article 2B. This will increase certainty in commercial law, resulting in more efficient transactions due to reduced litigation and contracting costs.