Through the Telescope: UCITA and the Future of E-Commerce

Lorin Brennan

THROUGH THE TELESCOPE:
"UCITA" AND THE FUTURE OF E-COMMERCE[1]

Lorin Brennan *

I. INTRODUCTION

In 1633, Galileo was dragged before the Inquisition for teaching the Copernican heresy that the Earth revolved around the sun. The academics of the time condemned Galileo. They said his discoveries could not be true because they contradicted the received wisdom of Aristotle and Ptolemy. Galileo had a simple answer: "See what I have seen; look through the telescope." The Inquisitors refused, and adjudged Galileo a heretic.

Today another Copernican revolution is upon us, brought about by the explosive emergence of the Internet. The most dramatic change is in the world of electronic commerce. Traditional commerce is based on a "let's make a deal" image of a merchant and a customer haggling over terms. The e-commerce revolution is creating entirely new methodologies to reduce the transaction costs inherent in this traditional model by moving from competitive to cooperative bargaining. Software tools are implementing these methodologies in ways that allow customers to create customized, standard proposals of their own. Electronic agents will search the Net on their behalf, challenging merchants to provide the best alternatives across a range of price and value-added options. The agents will even conduct the entire negotiation using strategic criteria designated by the user.

The e-commerce revolution has recognized a crucial fact: parties do not want a hassle; they want a deal. It is therefore moving the commercial center of gravity away from the competitive intricacies of negotiation to cooperative outcomes that maximize returns for both parties. It is using the Net to replace old-fashioned and time-consuming bargaining methods with modern approaches that utilize standard formulations and electronic agents. In a word, it is changing the focus from process to results.

The Uniform Computer Information Transactions Act (UCITA) is a uniform statute proposed to modernize current commercial law, and it is specially geared to this new information environment.[2] Among its many features, it creates uniform ground rules for information licensing, allows parties to form contracts electronically, sets standards for use of electronic agents, provides safeguards for

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   2. UNIF. COMPUTER INFO. TRANSACTIONS ACT, U.L.A. UCITA (1999).

"click-on" assents, and gives greater certainty in identifying and performing contractual obligations. For once, a law was drafted anticipating the future rather than reacting to the past.

Unfortunately, a small clique of academic Inquisitors has set itself against the new Copernican model. Their arguments are convoluted and tendentious, but they all come down to the same point: no one should be permitted to use standardized methodologies, electronic agents, or modern techniques that prefer outcome to process. The future should only reflect the past.

These contrarians deserve the same reply Galileo gave to his Inquisitors. Forget the books and the ivory towers and go into the world. Get online. See what everyone else has seen.

Look through the telescope.

II. BETTER THAN BARGAINING – SHRINK-WRAPPING

In a typical retail transaction, a consumer needs to acquire sufficient information to solve three problems: (1) what specific product do I buy, (2) who offers the best price/value mix for it, and (3) how do I get the best deal? No situation better illustrates the consumer's dilemma than the familiar case of buying a car. One company has found a way to use the Net to achieve the apparently paradoxical result of reducing consumer costs and increasing dealer profits. The company is Auto-by-Tel, and its technique is revolutionary: it shrink-wraps consumers.

Pete Ellis started out in the car business the old fashioned way, selling his first car at sixteen and eventually opening his own dealership at twenty-four.[3] He soon became one of the largest dealers in the United States, with sixteen dealerships at his highpoint.[4] In the early 90's he lost it all.[5] Since he hated many things about how he had to conduct his businesses anyway, he began to think about a better way.[6] He started Auto-by-Tel in 1995 and has never looked back.[7]

Ellis describes in detail the frustrations both customers and dealers face when selling cars

Sites to Explore
Auto-by-Tel: http://www.autobytel
MicroTimes http://www.microtimes
CompareNet http://www.comparenet

under the old-fashioned "let's make a deal" model.[8] Customers often spend considerable time just trying to find what they want to buy. Since the salesperson's job is to get the best price while convincing the consumer it is actually the best

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3. See Mary Eisenhart, *Turning The Car Business Upside Down: Auto-By-Tel's Customer Friendly Digital Revolution*, MICROTIMES, Vol. 179 (May 22, 1998). As of this writing, the archives on the Microtimes website is under construction. Archives for prior issues are available at http://www.microtimes.com/resourcepage/archives.html (visited April 27, 2000). Prior issues should be available online.
4. *Id.*
5. *Id.*
6. *Id.*
7. *Id.*
8. *Id.*

deal, there is little incentive for dealers to provide information about actual costs or competitive alternatives. As Ellis puts it: "You know, ignorance is bliss for auto dealers."[9]

Finding the right dealer is no easier. Ellis says: "Every time [consumers] go into a facility to look at a car, they are besieged and jumped on by car salesmen who are interested in selling them a car *today*, because a car salesman is paid a commission, and his whole life depends on what he sells today and how much money he makes for a dealer on that car."[10]

Negotiating the deal is even worse. "[D]ealers found out long ago that if they put customers through systems, somehow their closing ratio is improved and their gross averages improved. Thus, you talk to three to five people when you're looking at completing a transaction: You talk to a salesman; if he doesn't sell you a car, he may turn you to another salesman; you may end up going through what they call a closer who will then close the deal; then you might talk to a finance manager who writes a contract and tries to sell you financing or sell you after-market product."[11] Marketing costs between $300 and $400 dollars per car. The involvement of these additional personnel can add another $800. The traditional bargaining model adds around $1200 to the cost of a car, all of which is passed on to the consumer. "In short, what should have been a symbiotic relationship turned out to be adversarial in the extreme."[12]

Using its Web site, Auto-by-Tel does just the opposite. As Ellis puts it: "We bring the dealer a shrink-wrapped consumer."[13] Auto-by-Tel provides consumers with precise information about costs, options and available products.[14] The consumer selects the car with all the features the consumer wants online without any hassle. Then Auto-by-Tel informs a local dealer about the customer's desires, and the dealer has twenty-four hours to call the customer with their best deal on exactly what the customer wants.

With the cost of maintenance, marketing and the additional sales personnel, the average dealer nets only $77 on each new car sold. Auto-by-Tel provides a dealer with a qualified, educated, ready-to-buy customer. A deal can be closed in an hour, rather than half of a day, without the need of running the consumer through that expensive closing gauntlet. The dealer can pass on a substantial portion of the transaction cost savings to the consumer and still make more net profit than before. Cutting out the bargaining means the consumer gets the best bang for the buck and the dealer still does better on the bottom line. "It's a win-win," says Ellis.[15]

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9. *Id.*
10. *Id.*
11. *Id.*
12. *Id.*
13. *Id.*
14. *See generally* http //www.autobytel.com .
15. See Mary Eisenhart, *Turning The Car Business Upside Down: Auto-By-Tel's Customer Friendly Digital Revolution*, MICROTIMES, Vol. 179 (last visited May 22, 1998).

Do consumers like this approach? You bet. When Auto-by-Tel started, Ellis thought they would have 15,000–18,000 customers a year.[16] In April they had 3700 requests in a single *day*.[17] They now handle over 100,000 requests a month, and the demand is growing.[18] Auto-by-Tel is also one of the largest suppliers of auto financing. Take a moment and look through your Web telescope. See for yourself what Auto-by-Tel does.

Auto-by-Tel demonstrates a crucial point about the revolution happening in online commerce. Despite what some contrarians think, bargaining is not a particularly efficient method of maximizing returns for either party. It works only when the parties have relatively equal information, comparable bargaining skills, and the transaction costs are minor compared to the entire deal. These are not typical characteristics of consumer transactions.

More importantly, Auto-by-Tel debunks the myth that standard forms will only be used by vendors. In the online universe, the biggest users of pre-packaged information could soon be customers themselves. They will use the Web to gather information on exactly what they want, standardize their desires, and then challenge suppliers to meet their particular demands. As *MicroTimes* puts it:

> The most appealing potential of the personal computer in general, and the Internet in particular, is the ability the technology gives to individuals to bypass traditional inefficiencies, circumvent information priesthoods, be more nimble than larger and more established entities, and, in general, evade obstacles between them and their chosen objective.[19]

Auto-by-Tel uses the Internet to match car dealers and buyers, but parts of the transaction are still carried on in non-electronic ways. Is that all e-commerce promises to do? Not at all. Keep looking. It gets better.

III. ON BOTS, SPIDERS, MULTI-AGENTS AND OTHER NET DENIZENS

The Net is growing at an exponential rate. As a result, a new class of programs has evolved to help users navigate through this rapidly expanding information universe. They are called by a variety of names, including "spiders," "crawlers," "wanderers" and "ants," although many prefer the simple designation "bots," a derivation of "robots." They are revolutionizing the world of e-commerce.

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16. *Id.*
17. *Id.*
18. *Id.*
19. *Id.*

A. About Bots

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|               Sites to Explore                   |
|                                                  |
|  The BotSpot®                                    |
|  http://www.botspot.com/                         |
|                                                  |
|  A Bot Home Page                                 |
|  http://info.webcrawler.com/mak/projects/robots/robot.html |
|                                                  |
|  AmEc Initiative Home Page                       |
|  http://ecommerce.media.mit.edu/                 |
|                                                  |
|  Multi-Agent Decision Tools                      |
|  http://www.logicaldecisions.com/                |
|                                                  |
|  Market Space                                    |
|  http://www.sics.se/~market/                     |
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A *bot* is a software program that traverses the Web's hypertext structure by retrieving a document and, recursively, all documents referenced in it.[20] Normal Web browsers are not bots because they are operated by a human being and do not automatically retrieve referenced documents. Technically, bots do not move between sites like, for example, a virus; rather they simply visit sites by requesting documents. An *agent* is a broader concept. The term includes "autonomous agents" which do travel between sites using their own selection criteria, although they require special servers and are not in widespread use. More common are "intelligent agents," which are programs that help users to perform specific acts, such as selection, form filling, or site location.

UCITA is a statute about contracting, and its definitions reflect this emphasis.[21] It defines an "electronic agent" as a "computer program or automated means used [by a person] to independently initiate or respond to electronic messages or performances [on behalf of that person] without review by an individual."[22] Obviously, then, a bot is a UCITA electronic agent.

Several valuable Web sites are listed in the side panel, and it would be useful to take out your Web telescope and explore them. The BotSpot®, a site that bills itself as "The Spot for all Bots on the Net," has a large collection of bot information. Its search page[23] allows parties to search for bots by categories, including "Commerce Bots" and "Shopping Bots." These bots are just what the doctor

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20. The descriptions here and in the text come from Martijn Koster, *The Web Robots FAQ*, http://info.web-crawler.com/mak/projects/robots/faq.html. A number of useful but more technical articles are collected at http://info.webcrawler.com/mak/projects/robots.

21. *See generally* UNIF. COMPUTER INFORMATION TRANSACTIONS ACT, U.L.A. UCITA section 102 (1999).

22. *Id.* at section 102(a)(28).

23. *See* http://www.botspot.com/search/index.html.

ordered for e-commerce. WebCrawler® maintains a site that lists more than 170 active bots on the Web.[24] These bots are classified by name and usage.

B. Over at the Media Lab

Considerable academic study is now underway regarding how electronic agents–bots–will facilitate e-commerce. A leading program is the Agent-Mediated Electronic Commerce Initiative at the MIT Media Laboratory.[25] The purpose of the AmEC Initiative is to investigate "how software agent technologies can expedite the electronic commerce revolution."[26] Professors P. Maes and R. Gutterman of the Media Laboratory put the challenge in more vivid terms:

> Will tomorrow's retail look anything like today's physical-world retail? We are already seeing online businesses that challenge the status quo (e.g. Amazon.com) and technologies that are dramatically changing the face of retail commerce—e.g. agent systems that reduce transaction costs for both merchants and consumers and create personalized and community based experiences to help merchants increase sales.[27]

To help understand some of these changes, they provide the following chart of six agent programs that assist customers in making decisions about what they want to acquire:[28]

	Persona Logic	Firefly	Bargain Finder	Jango	Kasbah	Auction Bot	Tete-a-Tete
1. Need Identification	Only a few primitive event-alerting tools (e.g., Amazon.com's "Eyes" program) help anticipate consumers' needs and provide paths into the subsequent CBB stages. However, systems like Firefly can alert a consumer with product recommendations when consumers with similar interests purchase specific products.						
2. Product Brokering	X	X		X			X
3. Merchant Brokering			X	X	X		X
4. Negotiation					X	X	X
5. Purchase and Delivery	Post-purchase evaluation usually includes feedback about two distinct elements of the shopping process: product brokering and merchant brokering. Traditionally, customer remarks are accessible (and used) by either the marketing staff of manufacturers or the customer satisfaction staff of merchants. However, agent-based distributed trust and reputation mechanisms (e.g., Kasbah's Better Business Bureau) enable customers to share and combine their experiences and use merchant and product reputations as additional aspects of brokering and negotiation.						
6. Product Service & Eval.							

Table 1: Roles and Examples of Agent Systems as Mediators in Electronic Commerce

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24. *See* http://info.webcrawler.com/mak/projects/robots/robot.html.

25. *See* http://ecommerce.media.mit.edu/.

26. *Id.*

27. R. Guttman & P. Maes, *Cooperative vs. Competitive Multi-Agent Negotiations in Retail Electronic Commerce*, § 1 <http://ecommerce.media.mit.edu/>.

28. R. Guttman & P. Maes, *Agent-Mediated Integrative Negotiation for Retail Electronic Commerce* < http://ecommerce.media.mit.edu/> Table 1.

The important categories in this chart are Product Brokering, Merchant Brokering, and Negotiation. Product brokering addresses *what* to acquire, merchant brokering deals with *who* to acquire it from, and negotiation is about *how* to close the deal. These are the same problem areas for consumers we discussed above. In other words, programmers are already developing bots–electronic agents–to help consumers solve the three most difficult problems they face in retail transactions.

Early e-commerce bots were primarily concerned with product brokering. They searched the Net to find a desired product, but typically only distinguished products based on the single criterion of price. Many Shopping Bots in the BotSpot® list are of this type.[29] Arthur Andersen's BargainFinder was the first true merchant brokering agent. Users could enter a specific music CD, and BargainFinder would identify its price and availability among the offering of participating merchants, allowing the user to select which merchant was most suitable.

Cutting edge research is now concentrated on agents that engage in direct negotiation. Kasbah is a Web-based multi-agent system which allows users to create both buyers and sellers to undertake transactions in various goods. The agents automate much of the merchant selection and negotiation. A user who wants to buy or sell goods creates an agent, gives it a strategic direction, and sends it off into an electronic agent marketplace. Agents proactively seek out potential buyers or sellers and actively negotiate with them in accordance with the user's predetermined constraints, such as desired price, highest or lowest price, and delivery date. Buyers can select a buying strategy of anxious, cool-headed, or frugal, and sellers respond to their bids. AuctionBot is a similar tool allowing parties to conduct agent-based auctions.[30]

An auction, however, is not the best means of negotiating. It is a form of competitive negotiation that can overstate the price due to auction fever.[31] It also restricts negotiation to the price factor. A better approach uses multi-attribute utility theory for "quantitatively analyzing important decisions involving multiple, interdependent objectives from the perspective of a single decision maker," i.e. for cooperative negotiation. Professors Guttman & Maes describe it thus:

> In essence, cooperative negotiation is a win-win type of negotiation. This is in stark contrast to competitive negotiation which is a win-lose type of negotiation . . . . Desired retail merchant-customer relationships and interactions can be described in terms of cooperative negotiations—the cooperative process of resolving multiple, interdependent, but non-mutually exclusive goals. A merchant's primary goals are long-term profitability through selling as many products as possible to as many customers as possible with as low transaction costs
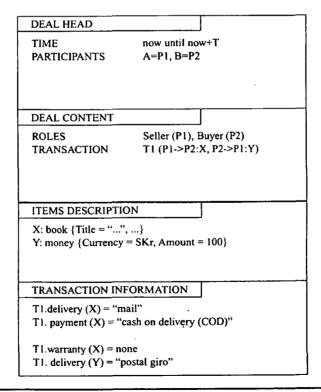
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29. *See* http:// botspot.com.searchindex.

30. Auctions have become very popular on the Web. A search of Excite under "Auctions" reveals scores of sites. An "auction homepage" can be accessed from http://www.ebay.com.

31. For a thorough discussion of the problems with auctions, *see* Guttman & Maes, *supra* note 27.

as possible. A customer's primary goals are to have their personal needs satisfied through the purchase of well-suited products from appropriate merchants for as little money and hassle (i.e. transaction costs) as possible. A cooperative negotiation through the space of merchant offerings can help maximize both of these sets of goals.[32]

A tool that implements these ideas is LogicalDecisions. It helps users solve multi-objective decision problems, as opposed to sequential ones. Use your Web telescope to check out its site.[33] The discussion of "The Art & Science of Decision Analysis" is a helpful introduction to this methodology. There is also a bibliography and links to related sites.[34]

A premier benefit of multi-attribute decision tools is how they help consumers take advantage of a merchant's unique *value-added* offerings. These include extended warranties, forgiving return policies, wide product selection, brand reputation, extensive service contracts, special gift services, high product availability, superior customer service and support, diverse payment, loan and leasing options, fast delivery with low costs, promotions and coupons, cross-manufacturing product configurations, etc.[35] Clearly, these value-added services are precisely the things that a merchant would want to contract about above and beyond simple price terms.

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┌─────────────────────────────────────────────────┐
│ DEAL HEAD                                         │
│                                                   │
│ TIME                 now until now+T              │
│ PARTICIPANTS         A=P1, B=P2                    │
│                                                   │
│                                                   │
│                                                   │
├─────────────────────────────────────────────────┤
│ DEAL CONTENT                                      │
│                                                   │
│ ROLES                Seller (P1), Buyer (P2)      │
│ TRANSACTION          T1 (P1->P2:X, P2->P1:Y)      │
│                                                   │
│                                                   │
├─────────────────────────────────────────────────┤
│ ITEMS DESCRIPTION                                 │
│                                                   │
│ X: book {Title = "...", ...}                      │
│ Y: money {Currency = SKr, Amount = 100}           │
│                                                   │
│                                                   │
├─────────────────────────────────────────────────┤
│ TRANSACTION INFORMATION                           │
│                                                   │
│ T1.delivery (X) = "mail"                          │
│ T1. payment (X) = "cash on delivery (COD)"        │
│                                                   │
│ T1.warranty (X) = none                            │
│ T1. delivery (Y) = "postal giro"                  │
└─────────────────────────────────────────────────┘
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32. *Id.* at section 3.
33. *See* http://www.logicaldecisions.com/.
34. *Id.*
35. Gutterman & Maes, *supra* note 28, section 1.2 at p. 2.

In the coming world of e-commerce, consumers will be able to pre-package their desires in an electronic agent programmed to address a range of merchant value-added offerings. The consumer can specify such desires as price, product, brand, accessories, warranty, service package, delivery, and a host of others. The bot will then search the Net for the best offerings by communicating with merchant bots. These bots can even do the negotiations using strategic criteria selected by the users. Everybody wins. Merchants win, because they can compete effectively on value-added services beyond mere price and at reduced transaction costs.

Consumers win, because these value-added services are available to them without the hassle of haggling. This is not a dream. It is already happening.

C. Welcome to MarketSpace

For these developments to move into high gear, they need an infrastructure with well defined bargaining protocols in which the electronic agents can interact. In Europe, a project funded by Swedish Telecom is trying to do just that. It is called the Agent-Based Market Space Project.[36] The developers describe it like this:

> The vision is to enable automation of electronic commerce, focused on the interaction in a market (like searching, negotiation, deal settlement) using agents. Each participant in the market (whatever role he/she has) has an agent that automates the interactions partially or fully. The market interaction and information should be structured and machine readable and not arbitrarily structured as today.[37]

> The approach we have taken is to develop an Agent-based market infrastructure based on simple information and interaction models . . . . The basic information unit is the contract (represented as structured documents), and a set of intersecting contracts is the 'market' interest of a participant. The information model consists of a number of possible (atomic) interactions, which together define the interaction language. The Following message types exist in the language: Ask, Tell, Negotiate, Offer, Accept and Decline. These support more complex interaction like advertising, searching, negotiating and closing of deals. Based on these models, we have developed an Agent programmers toolkit called JavaBase.[38]

The proponents of MarketSpace present a methodology for implementing their proposal in Prolog Objects.[39] Here is a simple example of an "expression of interest" (EOI), an electronic inquiry that does not amount to a formal offer, supported by the MarketSpace protocol. Notice that the EOI allows agent interaction on more than just the price term; it also includes payment, delivery, and war-

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36. *See* http://www.sics.se/market/.
37. *Id.*
38. *Id.*
39. J. Eriksson, N. Finne & S. Janson, *Information and Interaction In MarketSpace and Their Implementation in Prolog* <http://www.sics.se/market/> under heading "Documents."

ranty terms, which are merchant value-added services. The site also includes a toolkit for building agent-based systems in Java (JAID).[40]

D. But is it Legal?

Obviously, MarketSpace is only an initial proposal. But given the right incentives and authorizations, MarketSpace, and indeed all the other proposals for bot-mediated e-commerce, can grow dramatically. Before that can happen, however, we need to ask a basic question: is it legal? Under current law, the answer, unfortunately, is "no." Current law does not have mechanisms to allow agent-based formation of electronic contracts.

UCITA solves this problem.[41] It specifically authorizes the use of electronic agents to form contracts, either human-to-agent or agent-to-agent.[42] Of course, UCITA allows parties to use the traditional rules of contract formation.[43] But it also contains a superset of modern contracting rules especially geared to the new electronic environment, allowing for a more robust and ultimately fairer system of e-commerce.[44]

For example, MarketSpace is forced to use the old common law rule that the Accept must exactly match the Offer. Why not design a system that allows an effective Accept to be "near" (a concept with a well-recognized mathematical usage) the Offer (e.g. the color is maroon instead of red)? Rules can then determine whether and to what extent variation become an effective part of the deal. UCITA establishes a framework for parties to do just that.[45]

Current bot protocols see contract formation as occurring at a single point in time, meaning bots must be programmed to negotiate until all terms are agreed or rejected. As merchant offerings become more richly varied, bots may become significantly code-heavy, making it difficult for them to communicate efficiently with sites that have low bandwidth. It would benefit all parties if a contracting protocol allowed parties to separate their negotiations between major variables and minor variables rather than requiring an "all or nothing" approach. UCITA agrees.[46] It allows parties to make an enforceable contract on essential terms (major variables) and leave fussing with the boilerplate (minor variables) until later.[47] Contracts can be built in "layers." UCITA will authorize sleek "finder" bots to cruise the Net with authority to close a deal on user-defined essential terms before calling in the heavier "closer" bots to finalize the remaining details.[48] Or the parties can continue with the all-or-nothing approach. It is their choice.

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40. *See* http://www.sics.se/market.
41. *See generally* UNIF. COMPUTER INFORMATION TRANSACTIONS ACT, U.L.A. UCITA (1999).
42. *See id.* at section 107.
43. *See generally* UNIF. COMPUTER INFORMATION TRANSACTIONS ACT, U.L.A. UCITA (1999).
44. *Id.*
45. *Id.*
46. *Id.*
47. *Id.*
48. *Id.* at section 112.

How can we be sure that parties have actually agreed to a deal? One indicator is that the parties acted. A customer orders a product and the vendor ships; the screen says "Click here if you agree," and the user clicks. While continuing to allow this time-honored system, UCITA contains rules to ensure that it works fairly in an electronic environment. It provides that bots, or people for that matter, do not consent unless they have an opportunity to review the term, a chance to accept or reject it, and then affirmatively accept it.[49] If a user must pay before an opportunity to review, then the user has a right to refund if the user rejects the contract after review.[50] For consumers and small businesses, this refund must include costs of shipping and de-installation.[51] None of these protections exists in current law.

What happens if a consumer or the consumer's bot makes a mistake and consummates the wrong transaction? ("My cat jumped on the keyboard.") Current e-commerce proposals do not address this problem—yet. UCITA already does. It contains a special provision allowing a consumer to undo a transaction in appropriate cases.[52]

This is just a thumbnail sketch. UCITA contains significantly more. The Reporter's introduction to UCITA contains a lengthy chart comparing its innovations to the situation under current law.[53]

So the Net allows customers to pre-package their desires into electronic form that reduces bargaining hassles and gets better deals. Developers are creating bots to facilitate this process, and UCITA will effectuate it all with modern contracting rules. Yet we are still dealing for the most part with single transactions. Is that all there is to e-commerce?

Don't believe it. It gets better still.

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49. *Id.*
50. *See id.* at section 112(3).
51. *See id.*
52. *See id.* at section 216.
53. *See* http://www.law.upenn.edu/library/ulc/ucc2bamg.htm Reporters' Introduction, "Consumer Protection Rules."

IV. THE VIRTUAL ENTERPRISE

Sites to Explore
(from DBMS Magazine)

Publishing
http://www.intranetsol.com/
http://www.netobjects.com/
http://www.lotus.com/

Community
http://www.eshare.com/
http://www.ichat.com/

Catalog
http://www.icat.com/
http://www.intershop.com/

Business-to-Business
http://www.ariba.com
http://www.elekom.com/
http://www.home.netscape.com/

Virtual Storefront
http://www.openmarket.com/

DBMS Magazine is one of the premier publications for database professionals. Its July 1998 issue is devoted to topics on developing tools for e-commerce.[54] A lead editorial describes "a new generation of applications intended to provide a platform for helping businesses reinvent the way they communicate and buy and sell products and services"[55]–in a word, the Virtual Enterprise.

The purpose of these new tools is to allow a business to have a seamless integration between itself and its customers, suppliers, and partners. They do this in a variety of ways, from simple communication with the customer, to exposing large sets of the back office directly to customer input via the Net. The DBMS article lists more than a dozen Web sites, noting that its list is by no means comprehensive. In order of increasing complexity, these tools can be classified as follows: (1) *publishing* tools allow enterprises to publish information in Web-based form, such as HTML, XML or Java; (2) *community* programs allow companies to develop a community with their customers and suppliers, through bulletin boards, conferencing, and the like; (3) *catalog* tools allow companies to cre-

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54. Stewart McKie, *ERP Meets Web E-Commerce*, 11 DBMS 8, ISSN: 1041-5173 (1998) (evaluating the tools offered by Oracle, SAP, AG, PeopleSoft, and The Baan Co. for enterprise resource planning (ERP) applications). *See* http://www.dbmsmag.com/9807d13.html (visited April 27, 2000). DBMS Magazine has merged with its sister publication to form: INTELLIGENT ENTERPRISE. (http://www.dbmsmag.com/index.html (visited April 27, 2000).

55. *See* J. Hurwitz & H. Ashton, *E-Business Software: Moving Toward The Virtual Corporation* <http://www.dbmsmag.com/>.

ate structured electronic databases for uses by internal departments or customers; (4) *transaction* programs automate existing internal processing systems, typically addressing back-end database integration and workflow; (5) *business-to-business* applications allow enterprises to conduct electronic business directly, such as allowing a customer to order directly from a supplier's inventory database; (6) *virtual storefronts* allow a collection of businesses linked in a virtual enterprise to expose its whole business operations to customers and supplies on the Web.

Some of the business-to-business tools provide an exciting view of the possibilities for new business paradigms on the Net. For example, Ariba ORMS[56] provides an electronic infrastructure to integrate operating resources, allowing companies to reduce costs through e-commerce, automation, and decision support techniques. Elekom Procurement[57] allows seamless interaction between the order desk and the supplier. Procurement paperwork can be routed through the enterprise, obtain necessary approvals, and be communicated to a vendor—all electronically. The order can go directly to the vendor's electronic inventory control system, be electronically processed, and the products shipped. The tools can operate with a minimum of human intervention by using standardized protocols.

UCITA covers bot operations in its definition of "electronic agents."[58] Does it have anything to say about these standardized online protocols? Indeed it does. In its contract-centric language, it defines them as "standard forms."[59] It says: "'Standard form' means a record, or a group of related records, containing terms prepared for repeated use in transactions and so used in a transaction in which there was no negotiation by individuals except [for negotiation or customization of] price, quantity, method of payment, selection among standard options, or time or method of delivery."[60] Let's translate this into bot-speak. A bot will be programmed to respond to negotiating protocols "prepared for repeated use in transactions and so used in transactions."[61] The protocols, as in MarketSpace, will define certain actions such as Ask, Negotiate, Offer, Accept, or the more robust superset of contracting options allowed by UCITA. Negotiating strategies, search techniques, communication with other bots, etc., will also be pre-programmed. In other words, the e-contracts negotiated by bots will be UCITA standard forms.

UCITA contains a real innovation in this area. Current statutes divide consumer from business uses, with different rules for each class. UCITA instead divides products between the "mass market" and other uses.[62] As mentioned above, a party does not assent to a license term unless there was a prior opportunity to review it. In the mass market, if the opportunity to review only comes after payment, for example in a typical mail order situation, then if a licensee

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56. *See* http://www.ariba.com/.

57. *See* http://www.elekom.com/.

58. UNIF. COMPUTER INFO. TRANSACTIONS ACT, U.L.A. UCITA section 102(a)(28) (1999).

59. *See id.* at section 102 (a) (66).

60. *Id.*

61. *Id.*

62. *See id.* at section 102(a)(46) (definition of "mass market transaction").

does not like the mass market license *for any reason*, the licensee has a right to return the information for a full refund plus the costs of shipping and de-installation.[63] These protections do not exist under current law at all. Since bot-mediated e-commerce will require using standard forms, it would be ridiculous to prohibit them or make their use so fraught with legal uncertainties that their use would be ineffectual. This would strangle e-commerce in the cradle. UCITA authorizes standard forms, but provides protections that go beyond current law to ensure fairness.

Standard, transparent, uniform methodologies, not private, customized haggling, will be the driving force behind e-commerce. Without the existence of a uniform deal-making code like UCITA, each developer will be constrained to devise iconoclastic rules for deal formation, performance, and settlement, adding additional costs and confusion. A uniform set of contracting protocols for standard forms will be essential to realize fully the potentials for e-commerce.

V. UCITA – A NEW VISION FOR E-COMMERCE

The Net knows no boundaries. UCITA is a uniform law that will allow e-commerce to be conducted under the same terms and conditions in every State.[64] The U.S. Government has said that UCITA's basic principles of freedom of contract and fairness are crucial standards to take to international forums.

Unfortunately, a small group would stop this development in its tracks. They believe that standard forms, what they call "non-negotiated contracts," would somehow supplant federal intellectual property law. This is a fundamental misconception. The doubters have mistaken an *enabling* statute for a *regulatory* one. Article 2B merely provides *how* parties can make a contract, not *what* the contract is about. Existing laws that affect the content of contracts, such as consumer protection laws, preemptive federal laws, and the like, are unaffected by UCITA. The statute expressly says so.[65] Except for bedrock rules regarding matters such as good faith and unconscionability, all of its rules can be changed by agreement. Its philosophy is freedom of contract, not top-down regulation.
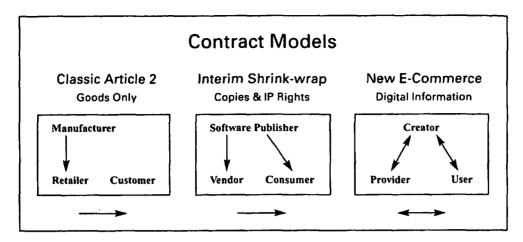
A. The New Contracting Models

To understand what UCITA is really doing we need to look at the different contracting models emerging in the new economy. Here is a simple graphic illustration of the differences.

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63. *See id.* at section 102(a)(60).

64. *See generally* UNIF. COMPUTER INFORMATION TRANSACTIONS ACT, U.L.A. UCITA (1999).

65. *Id.* at section 105(c) (consumer protection law prevails in case of a conflict); *Id.* at section 105(a) (a provision preempted by federal law is unenforceable to the extent of the preemption).

Contract Models

Classic Article 2	Interim Shrink-wrap	New E-Commerce
Goods Only	Copies & IP Rights	Digital Information

Classic Article 2 — Manufacturer → Retailer, Customer

Interim Shrink-wrap — Software Publisher → Vendor, Consumer

New E-Commerce — Creator ↔ Provider, User

In the classic Article 2 sales of goods model, the manufacturer-retailer and retailer-customer contracts are distinct. There is no contractual relationship (privity) between manufacturer and customer. The shrink-wrap model adds a new agreement between software publisher and consumer: the shrink-wrap license. This enables the consumer's use without infringement of a new element—the intellectual property rights in the software. The modern e-commerce model builds on this model with a significant improvement: feedback. Instead of top-down contracting, the Net for the first time allows dynamic interaction among all parties. Those who reject these changes misunderstand at a fundamental level what the Net allows in the new economy.

For example, one school argues that all information transactions should look like the unidirectional, top-down Article 2 model. They believe the software publisher-consumer relationship created by a license is "illegal" under Article 2 and should be prohibited. This is both bad law and bad policy. Legally, they misread the famous case of *Step-Saver Data Systems v. Wyse Technology*.[66] In that case, a software vendor and a customer made a deal, exchanging purchase orders and invoices.[67] The software arrived with a shrink-wrap license that disclaimed warranties.[68] The court in this case said the disclaimer was not enforceable under Article 2 section 207, not because it was in a shrink-wrap, but because it had not been discussed up front.[69] In *Pro-CD v. Zeidenberg*,[70] where a consumer reviewed the shrink-wrap up front, loaded the software on his computer, and clicked "I agree," the Seventh Circuit Court said, unremarkably enough, that the shrink-wrap was enforceable. As a policy matter, those who would outlaw shrink-wrap licenses ignore a crucial point: without a shrink-wrap, a software user can become an infringer.[71] For example, the Copyright Act allows a party to

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66. Step-Saver Data Sys., Inc. v. Wyse Tech., 939 F.2d 91 (3d Cir. 1991).
67. *Id.* at 94-93.
68. *Id.* at 94-95.
69. *See id.* at 102. *See generally* Thomas M. Quinn, QUINN'S UCC COMMENTARY AND LAW DIGEST § 2-207A (2d ed. 1991).
70. Pro-CD v. Zeidenberg, 86 F.3d 1447 (7th Cir. 1996).
71. The court considered this problem in *Step-Saver*, but noted that the software vendor expressly agreed there was a license to use the software regardless of the shrink-wrap.

make *one* copy for back-up or archival purposes.[72] It does not authorize multiple copies. Many consumers own both a personal computer and a laptop. Shrink-wrap licenses now authorize customers to make *two* copies of the software, one on the personal computer and another on the laptop. If this shrink-wrap license is illegal, then a significant segment of the software-using public are copyright infringers.

A second school admits there is a relationship between a software publisher and a consumer, but argues that federal copyright prevents that relationship from being based on a shrink-wrap license. They argue that the hoary case of *Bobbs-Merrill Co. v. Straus*[73] prohibits software companies from using "restrictive licensing agreements to control the mass-market distribution of their products." A software license, however, involves two components: a transfer of a physical *copy* (vendor-consumer leg) and a license to exercise rights in the intangible *computer program* (publisher-consumer leg). *Bobbs-Merrill* only dealt with the copies (vendor-consumer leg); it had nothing to say about the rights in the computer program.[74] The mistake is to assume that the Copyright Act mandates that software companies may only sell copies of their products in the mass market. This is wrong.[75] Copyright owners can license copies as well as sell them, and they can separately license their intellectual property rights.

A third group would invalidate any contract term contrary to public policies relating to innovation, competition and free expression. The ostensible purpose of this approach is to provide balance by allowing courts to prevent non-negotiated licenses from restricting access to information. This is an appropriate and worthy goal. However, balance implies another side of the scale, and that is what this approach rejects. What about protecting privacy? Consumers will want to send private financial data and other information in pre-packaged bots over the Net. Would this approach allow a recipient to republish private information, despite a restrictive license, under the rubric of "free expression"? The Constitution authorizes Congress to protect authors and inventors by giving them exclusive rights in their works for a limited time. The Fifth Amendment protects private property and freedom of contract. If this approach requires courts to abandon these principles as well, it is questionable public policy.[76]

All of these arguments come down to the conceit that "actual, informed affirmative negotiations" are better than standard forms for e-commerce. But, as everything we have seen demonstrates, what consumers and merchants emphatically do not want is more face-to-face bargaining. They want cooperation, not hassle. Problems with standard forms arise in the old Article 2 world where there is limited, if any, interaction possible between distribution levels. The feedback possibilities of the Net change all that. Users, providers, and creators can now all deal dynamically and interactively with each other. Best of all, they do

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72. 17 U.S.C. § 117 (1994 & Supp. III 1997).

73. Bobbs-Merrill Co. v. Straus, 210 U.S. 339 (1908).

74. *Bobbs-Merrill* addressed only the copyright infringement claim. As the Court noted: "There is no claim in this case of contract limitation, nor license agreement controlling subsequent sales of the book." *Id.* at 350.

75. *See* Microsoft Corp. v. Harmony Computers & Elecs., Inc., 846 F. Supp. 208 (E.D.N.Y. 1994); *see also* 2 NIMMER ON COPYRIGHT, § 8.12[B][1] (1999) (criticizing those who fail to make this distinction).

76. *See* Lorin Brennan, *The Public Policy of Information Licensing*, 36 HOUS. L. REV. 61 (1999).

not need to rely on their own skills. They can have at their disposal bots pro-grammed to implement advanced techniques in bargaining and game theory that were once available only to the richest companies.

VI. CONCLUSION

In 1975, Frederick P. Brooks, Jr., wrote what was to become the classic text on software engineering, *The Mythical Man-Month*.[77] It was based on his experi-ence developing software for IBM mainframes, which had earned him the sobri-quet "father of the IBM System/360."[78] In 1995, Prof. Brooks, as the Kenan Professor of Computer Science at the University of North Carolina at Chapel Hill, revisited the text. What was the biggest new surprise in the twenty years since it was written? Shrink-wrapped software. He wrote:

> Every software guru I have talked with admits to being caught by surprise by the microcomputer revolution and its outgrowth, the shrinkwrapped software industry. This is beyond a doubt the crucial change of the two decades since The MM-M[79]. . . . Schumacher stated the challenge more than 20 years ago:
> > What is it that we really require from scientists and technologists? I Should Answer: We need methods and equipment which are
> > • Cheap enough so that they are accessible to virtually everyone;
> > • Suitable for small scale application; and
> > • Compatible with man's need for creativity.
> These are exactly the wonderful properties that the microcomputer revolution has brought to the computer industry and its users, now the general public. The average American can now afford not only a computer of his own, but a suite of software that twenty years ago would have cost a king's salary . . . . In 1975, operating systems abounded: each hardware vendor has at least one proprietary operating system per product line: many had two. How different things are today! Open systems are the watchword . . . .[80]

Open systems, electronic agents, standard forms, cooperative bargaining, win-win: these are the center of the new Copernican revolution in e-commerce. UCITA embraces them.

It took the Church more than 400 years to acknowledge that it was wrong about Galileo. During those intervening centuries, the Inquisitors covered their eyes and raged against a simple truth that Galileo and every reasoned person since has always known: in the struggle between the past and the future, the future always wins.

Join the future.

Look through the telescope.

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77. FREDRICK P. BROOKS, JR., THE MYTHICAL MAN-MONTH [Addison Wesley Longman, 7th ed. 1995].
78. *Id. About the Author.*
79. *Id.* at 79-80.
80. *Id.* 279-83.