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House Committee Meeting To Go On-Line Today **Economic Development & Tourism Meeting to Discuss E-Commerce**

(JUNEAU) -- Monday afternoon, Alaskans will, for the first time ever, be able to follow the proceedings of a committee of the Alaska Legislature on their home or office computers.

The Alaska House of Representatives' Special Committee on Economic Development and Tourism meets Monday afternoon at 5 o'clock in Room 124 of the Alaska State Capitol. The topic of the committee meeting will be an overview of e-commerce issues.

"This is an exciting event, marking one of those transition moments in how the Alaska Legislature does business," said Representative Gail Phillips (R-Homer), Committee Chair. "Hopefully, it marks the beginning of a new level of involvement by Alaskans in the legislative deliberations that are the cornerstone of our representative democracy."

The historic event was made possible thanks to cooperation between the Legislature and the Department of Administration's Internet Technology Group. The website is:

<http://jnumail1.state.ak.us/live4.htm>

Would-be users must have "Realplayer" software in order to access the webcast. This software is available and the webcast can also be accessed through a link on the State of Alaska Homepage:

www.state.ak.us

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Note: For Technical Questions: Call 1-907-465-1387

Information Technology Group
Department of Administration



Legislative Meeting on E-Commerce

Come Here at 5pm to Watch in RealPlayer

**HOUSE SPECIAL COMMITTEE ON
ECONOMIC DEVELOPMENT & TOURISM**

Review of E-commerce Issues

List of Participants

Representative Gail Phillips – Introduction

Representative Sharon Cissna - Discussion of e-commerce issues

Lt. Governor Fran Ulmer – State of Alaska

E-commerce in the State of Alaska and the Technology Information Council (TIC)

Jamie Kenworthy - Alaska Science and Technology Foundation (ASTF)

Availability of capital for E-commerce businesses and partnering opportunities
across the State

ED Neuman – Hollis Alaska Resident

"SE Alaska - A new Appalachia?"

Robin Naughton – Seattle Web Developer

An Alaskan who went south to find success – Her Story.

Ted Quinn – Capitol Office Supplies

A Juneau Success Story

**5 p.m., March 20, 2000
Room 124, Capitol Building
Juneau, Alaska**



A highway for all Alaskans

Rep. Sharon Cissna
for the
*House Special Committee on
Economic Development & Tourism*
Chaired by Rep. Gail Phillips
March 20, 2000

A Highway for All Alaskans

Introduction

I am pleased to co-host these e-commerce discussions with Representative Phillips. We will be having another discussion Wednesday at 5 PM and others to be announced later.

This committee has focused on building roads—I am hoping we can insure an Internet Highway for all Alaskans. We need to learn what are the barriers to a healthy Alaskan e-commerce. An important question will be government role.

E-commerce is on the rise. In 1999 e-commerce totaled about \$111 billion; by 2003, it's projected to total \$1.3 trillion. The digital revolution of this century will likely drive economic growth as much as the industrial revolution of the last century. Alaska geographic isolation makes the Internet even more important.

Where Alaska Is Now

Thanks in large part of the foresight of the Telecommunications Information Council (TIC), we were recently rated second among all states in offering government services on-line. Stand-outs include Alaska's Div. of Motor Vehicles (DMV) web site and Workplace Alaska online jobs.

Contrasting with Alaska's success in this area is our poor ranking in developing e-commerce infrastructure. Although the percentage of Alaskans connected to the Internet is nearly double the national average, Alaska ranks last among states in number of high-tech workers, with only 3,550 working mostly in communication services. Alaska's high-tech industry consists of 400 companies contributing only 4% of Alaska's Gross State Product. The importance of expanding high-tech employment in Alaska cannot be underrated. Workers in this industry earn almost \$20,000 over the average Alaskan private sector wage. (Alaska's high-tech industry is one of the fastest growing in the nation, having added 1,100 high-jobs between 1990 and 1997, a 43% increase.)

The Digital Divide

We have been hearing a lot about the Digital Divide. President Clinton mentioned it in his recent State of the Union address – it's a problem recognized the world over. The Digital Divide is the great disparity in Internet connectivity between rich and poor nations, between rich and poor citizens, and between urban and rural areas. In Alaska, the Digital Divide is as pronounced as anywhere, mostly due to rural residents paying high costs for satellite connections. Juneau is perhaps the most well-connected city in the world, but nearby towns suffer limited access. The Denali Commission's survey of rural telecommunications will shed light on the extent of this Divide. Clearly, to quote the last issue of Alaska Business Monthly, "providing affordable, high-speed access to the Internet in rural Alaska will be one of the dominant issues in Alaska telecommunications over the next few years and will become a major topic in the rural versus urban debate."

Great Britain is tackling the digital divide between rich and poor by

- Creating 1000 information technology learning centers;
- Passing 100,000 refurbished computers on to low income families;
- Offering discounts of 80% on basic information technology courses.

The Clinton administration has its own Digital Divide plan to invest \$2 Billion over 10 years to

- Offer tax incentives to encourage private sector donation of computers,
- Sponsor community technology centers,
- Train technology workers.

Alaska must be prepared to receive its share of these important initiatives.

Government's Role

The growth of e-commerce will be largely driven by the private sector. A recent Progressive Policy Institute report, however, lists some things states can do to foster growth:

- 1) Work together to establish a uniform legal framework to encourage e-commerce
- 2) Ensure that state laws do not harm growth of the digital economy
(Examples: not taxing the fees consumers pay to ISPs, not letting businesses threatened by the Internet lobby for special treatment (in North Carolina, its illegal to buy wine over the Internet)).
- 3) Encourage faster deployment of broadband telecommunications technologies
- 4) Provide government services on-line
- 5) Support Internet access at public facilities (libraries, schools, community centers, public agencies.)
- 6) Foster innovation through investment in higher education
- 7) Boost R&D tax credits.

The State Legislature needs to frame its role carefully. Oregon created an Internet Commission to examine policies and make specific legislative proposals to ensure that Internet commerce will continue to grow and prosper. (The commission is charged with studying: a) facilitating e-commerce, b) encouraging the provision of government services through the Internet, c) Internet tax policies, d) consumer privacy and protection, e) electronic security and encryption technology, f) regulation of unsolicited e-mail.)

It took 35 years to develop Silicon Valley. The internet use has grown in just a few years. Alaska cannot wait. Alaska Science & Technology (ASTF) Board member George Kozmetsky's advice has been to develop a collaborative partnership of community leaders in academia, business, and government to lead our state toward prosperity in the new economy.

This type of "civic entrepreneurship" will encourage cooperation between private-public-university. This is already happening. A few examples are:

- InvestNet's work matching entrepreneurs with venture capitalists
- The many projects, including technology start-ups, which ASTF and the Alaska growth capitol BIDCO have funded.
 - IT Literacy Initiative, a partnership between the University, the State and GartnerGroup IT experts, to enrich and enhance IT knowledge within Alaska.
 - Fiber Star donating \$40 million worth of bandwidth to UA, making it one of the top ten wired universities.
 - The highly successful NetDay program, utilizing volunteers and ASTF grants of \$10,000 per school to get them wired.
 - The various programs by Departments of Administration, Community & Economic Development, and Labor & Workforce Develop-

ment.

- State of Alaska Telecommunications Partnering Plan, being developed by DOA's IT Group and the GarnerGroup.
- Working with employers, the University, other educational providers, Alaska Human Resource Investment Council (AHRIC) and ASTF to establish an industry consortium at the Alaska High Tech Business Council, to increase the number of Alaska information technology workers.

As Commissioner of Military and Veterans Affairs Oates has suggested, I believe we should form a team to research the e-commerce models that cities, universities, states, and corporations have utilized to achieve excellence in high technology economies. A business plan for all of Alaska would be a natural next step. We must work together. The very nature of the internet forces partnerships in order to be successful. A formal partnership between the state cabinet level, university, chamber of commerce, and legislative levels as well.

Today we welcome a diverse panel of experts, including:

- Lt. Gov. Fran Ulmer, representing the Telecommunications Information Council (TIC);
- Jamie Kenworthy, Executive Director of the Alaska Science & Technology Foundation;
- A Hollis resident struggling with connectivity issues;
- A group offering a Washington State perspective on Alaskan e-commerce;
- And a Juneau resident that's enjoying some e-business success.

**UNIFORM COMPUTER
INFORMATION TRANSACTION
CODE
(UCITA)**

SERIES OF PAPERS ON UCITA ISSUES

by

Carlyle C. Ring, Jr., Chair of Committee to Draft UCITA
Raymond T. Nimmer, Reporter of Committee to Draft UCITA

On July 29, 1999, the National Conference of Commissioners on Uniform State Laws (NCCUSL), by a vote of the states 43 to 6, promulgated the Uniform Computer Information Transactions Act (UCITA) for consideration by the various state legislatures for adoption.

Information technology accounts for a huge share of the nation's economy and is the most rapidly expanding component of our economy. Until UCITA, there has been no contract law that provides clear, consistent uniform rules for the intangibles subject matter involved in computer information transactions in Internet and elsewhere, and no uniform law developed to provide substantive guidance for these transactions. UCITA will make it possible for states to provide a neutral and predictable legal framework for transactions in computer information in Internet and in other transactional contexts, and for states to provide greater legal certainty for the millions of transactions which are occurring daily.

UCITA has been discussed and debated during an eight-year period in well-attended drafting meetings, website and e-mail lists, and in many seminars and symposia. During this time, a number of issues have been debated and redebated in depth. Many important changes to the draft have been made in response to those substantive discussions. UCITA with these changes was overwhelmingly endorsed by NCCUSL as appropriate for state adoption. Some criticism persists without taking into account the responsive changes made.

In UCITA discussions, a number of issues have been emphasized recurrently. Thus, we have prepared a series of papers to provide responses to the various recurring questions. The answers are based on UCITA as promulgated with the substantive changes made during the deliberative process over eight years.

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Scope

What is "computer information"? In today's technology it is digital information, but UCITA will continue to apply even if new forms of computers are created. The computer information industries are the fastest growing in the country and the U.S. is the world leader. UCITA provides a fair and uniform contract law backbone for these industries.

• *What does UCITA cover?* UCITA covers contracts in "computer information." It applies only if the agreement is to create, modify, transfer, or license computer information. If a contract involves both computer information and something else, UCITA applies only to the part of the deal that involves computer information, except where the other subject matter is not goods and obtaining the computer information is the primary purpose of the deal.

• *What does that mean give me some examples?* UCITA covers contracts to license or buy software, contracts to create a computer program, contracts for multimedia products, contracts for computer games, contracts for online access to databases, contracts to distribute information on the Internet, and the like. UCITA does not cover television sets, stereos, automobiles, toasters, airplanes, baseball bats or traditional books.

• *Does UCITA really apply any time I give information to someone?* No. UCITA only deals with contracts. There are many times we give information to other people that have nothing to do with a contract for information. UCITA does not apply even if we agree to exchange information about the contract by e-mail or if I simply decide to deliver on a computer diskette the information I promised you.

• *Does UCITA cover computers, televisions, or a toaster?* No. UCITA does not apply to goods, except the "diskette" that contains a computer program. The law of goods is in Article 2 or Article 2A of the UCC. UCITA does not change that. It deals only with computer information.

• *What if the toaster I buy has software in it, does UCITA apply?* No. UCITA does not apply to software embedded in goods other than a computer or a computer peripheral unless a main purpose of the transaction is to get the software. You bought a toaster, not software, and UCITA does not apply.

• *Does UCITA cover sales of books, newspapers or magazines?* No. These do not involve computer information. UCITA covers online books, online databases, and the like, but not sales of print books, magazines or newspapers. Why the difference? There is existing law for traditional books. Digital and online products have no uniform rules, but are covered by varying and under-developed common law. UCITA will provide uniform contract formation and "default" rules for transactions in these products.

• *Does UCITA cover traditional movies, television, records or cable?* No. These are specifically excluded. These industries each have long-standing customs and practices that are unique and hard to cover in one set of uniform rules. UCITA does not cover them even if made available over the Internet. However, if people in those industries want to have the benefits of UCITA, they can by agreement have UCITA apply to their transactions.

• *Does UCITA create property rights in information that don't exist today?* No. UCITA is a contract law statute. It does not change, modify or create property rights. As one respected judge said, the difference between contract and property is that contracts are between two people, but property rights are "good against the world." UCITA deals with contracts, not property.

Opt-In or Out

• *Does UCITA really let people choose what law applies to their contract?* Yes, with restrictions. This is the normal U.S. statutory and common law rule for contract laws. The same rule is true in Article 2 by implication.

• *Why is this normal?* Contract laws traditionally do not dictate to contracting parties what the contract shall be. Instead, contract laws are "default rules" that govern only if the parties do not choose a different result. Choosing to be governed by UCITA (or Article 2, or other law) is one way of doing that. One respected commentator explains it this way: "No one questions the freedom of ... individuals to contract in a manner that is not contrary to the [Uniform Commercial] Code rules. But are they also free to change the Code rules to suit their own purposes? To put it bluntly, are they free to devise rules for themselves that

might be quite different than the Code rule? The answer to that question is yes. Let it be said openly and plainly, lest there be any doubt. What this means is that the Code opts for freedom of contract in its most radical form, permitting an alteration of its own basic rules. That is exactly what [UCC] 1-102 (3) says."

• *If one law applies, why should parties be able to change it in UCITA?* Two reasons. First, contract law only creates background rules. We have a free-market, contract-choice economy. UCITA preserves that. This means that parties can sell, buy or license (or not) and decide what terms are acceptable for their transaction. Opting to let UCITA apply or not is one way of doing this. Second, because UCITA and our information economy break new ground, UCITA was drafted with a relatively narrow scope. There may be transactions where several different contract laws will apply. This same thing happens under current contract law today. In each case, if they so choose, the parties need to be able to resolve the issues by agreement. They can do this by choosing UCITA as applicable law.

• *When would this be good? Give me some illustrations.* Let's say that a software company and a cable company agree to create a new business under a simple contract. What law governs that contract? The companies should be able to choose UCITA, common law, or Article 2. By doing so, they reduce costs and risk and can create a coherent contract. Next, let's assume it's not clear what law governs a contract between two people. It might be UCITA or common law. The parties want to know what law applies. Under UCITA, they can agree on this and avoid costly uncertainty or litigation.

• *By choosing UCITA, can a licensor or seller avoid all restrictions that exist in law today?* No. Choosing UCITA only affects contract law. There is no change in the application of antitrust, advertising, tax, regulatory, consumer protection or similar laws.

• *Does UCITA let sellers avoid consumer protections?* No. To the contrary, UCITA specifically says that all consumer protection laws continue to apply. (see Item 4) UCITA also creates new consumer protections.

• *Does UCITA really allow anyone and anything to opt in, etc., does it let a seller make his private estate sale be governed by it?* No. UCITA limits opting in under its provisions to transactions where information is a material part of the deal. But other law in some states today does allow real estate contracts to be governed by any law the parties choose, such as Article 2 on goods.

• *Can opting into UCITA be used to change product liability law for goods?* No. UCITA does not alter product liability law. The law of products liability is tort law, not contract. The most recent national restatement of that tort law recognized that how it applies to information is not clear. That restatement of tort law took no position on what should be the rule and neither does UCITA.

• *So what's the problem with the opt-in right?* There isn't any. If a law prevents changing some rules of contract by agreement, opting in or out cannot alter this.

Federal Preemption and Fair Use

• *Why does UCITA specifically say that its provisions are preempted by applicable federal law?* Like any state law, UCITA is subject to federal law, including constitutional rights of free speech. Typically, state statutes do not even mention this because it is so obvious. Section 105 states the obvious. This is to allay concerns and point parties to the fact that UCITA is not the last word on the relationship between contracts and information policy. A large body of federal intellectual property law exists. Some interest groups claimed that UCITA was intended somehow to avoid that law and others claimed that some of UCITA is contrary to federal law. Section 105 resolves both issues.

In fact, cases routinely hold that copyright does not generally preempt state contract law. Hundreds of cases apply contract law to transactions in copyrighted material without even discussing preemption. To the extent the parties' contract is preempted, if at all, that preemption limits the freedom to contract and this is recognized by UCITA.

• *Isn't it true that today, under copyright law, you can't license software, but only sell copies?* No. If this were true, the most vibrant industry in this country would be based on illegal

transactions. In fact, copyright law distinguishes between sales and licenses. A publisher is free to choose to either license or sell copies. A Federal Circuit Court of Appeals recently held that a license of software did not give the licensee ownership of the copy. That is, it held that a transfer is not a sale if the license terms are not consistent with rights after a sale. The Seventh Circuit has held that copyright does not preempt a license of a copy of data. Many cases have enforced licenses of software.

• *Isn't it true that a software license always takes rights away from a licensee?* **No.** A license deals with what you can do with information. Sometimes, it gives less rights than a buyer would get in a sale of a copy. Much more often, the license gives greater rights - e.g., the right to make copies for use by all people in a business, the right to make public displays, the right to distribute copies commercially, etc. The software acquired by a law firm requires a license to allow the firm to use the software on a multi-user network; a mere buyer of a copy could not do so. Of course, what rights are licensed relates to how much you pay. The license defines the product.

• *Does UCITA really make enforceable "sweeping contract restrictions on quotation or fair comment?"* **No.** Nothing could be further from the truth. To make this clear, UCITA creates a unique statutory rule that fundamental public policies, such as free speech and fair comment, control when they outweigh policies favoring enforcement of contracts. That rule does not exist today expressly in any uniform law statute, including Article 2. The comments to Section 105 require courts to consider and balance applicable laws and public policies. They adapt protective themes from the Restatement even though these themes have not been adopted by courts in all states.

• *Does UCITA prevent reverse engineering?* **No.** Some say that UCITA limits reverse engineering. Contracts may or may not be able to do so, but UCITA does not alter that existing law. This issue precedes UCITA: reverse engineering of software has been debated internationally and among national governments for years. Reverse engineering is a trade secret law concept that allows a buyer to discover and use any secrets contained in a product that it buys. UCITA expressly provides that it does not displace trade secret law. The rules remain the same. Also, reverse engineering of a copyrighted work is governed by federal law, which is not changed by UCITA. Further, the Section 105 comments make a specific reference to a 1999 amendment to the Copyright Act on this subject at the request of the Digital Futures Coalition and ACIS. These groups now request more: a statutory rule that was rejected by Congress. State law cannot solve this intellectual property law issue which has been fought not only in Congress, but also internationally.

• *Isn't it true that UCITA circumvents the Copyright Act?* **No.** There has always been a supportive relationship between contract and property law (e.g., copyright). Contracts distribute, facilitate or withhold rights to use property (among other things). UCITA does not change that relationship - it could not change rights conferred by federal copyright, trademark or other laws conferring intellectual property rights. Many who allege that UCITA tries to change that relationship seem to believe that federal copyright preempts all contract law and contracts relating to information. However, that is not true and no cases have held that to be true. There are many cases holding to the contrary.

• *But some people say that end-users will give up all of their "fair use" rights if UCITA passes - is that true?* **No.** First, "fair use" is a defense to copyright infringement: if you are sued for infringement and your use was limited, you can raise the defense of "fair use" which, if accepted by a court, means that there was no infringement. Fair use means that you have copied a work, but that federal law insulates your copying from infringement liability. Second, under current law you may contract with respect to fair use rights if you choose to do so -- nothing in UCITA requires it. Third, if we are talking about quotation, criticism, reverse engineering, rather than general fair use, what we have said above applies. Terms contrary to fundamental public policy are unenforceable under UCITA.

Consumer Issues

• *UCITA blame consumers doesn't it?* **No.** UCITA preserves existing state consumer protection statutes and regulations and does not alter federal consumer law. It applies new rules only where change is needed to facilitate electronic commerce. UCITA preserves or extends to information the consumer protections that exist under UCC Article 2 for the sale of goods and adds new protections. A

consumer is better off under UCITA than under existing Article 2 law for the sale of goods or current law for sale of services.

• *So what consumer protections are in UCITA?* UCITA keeps all consumer protections from existing Article 2 and extends them to many new transactions. It prevents a choice of law contract from changing any mandatory consumer rule, requires clearer language to disclaim a warranty, gives consumers a right to avoid consequences of errors on-line, prevents shortening the statute of limitations for consumers, and creates a right to a cost free refund if a consumer rejects license terms it did not see until after it received the software.

• *So why did Consumer's Union oppose UCITA?* It depends on your view of consumers. All consumers benefit from a vibrant and competitive economy, which for over 50 years has depended on the contract choice and flexibility that the UCC codified and UCITA preserves. But attorneys who represent some consumer organizations believe that contract law should outlaw contract terms or practices and not rely on traditional doctrines such as unconscionability, good faith enforcement, estoppel, fraud, misrepresentation, waiver and the like to protect parties. UCITA follows traditional contract law, which does not create a long list of detailed restrictions. The traditional view of general contract law, such as UCITA and the UCC, is that such restrictions are better left to individual state consumer protection laws, which UCITA expressly provides override UCITA provisions. This is a philosophical difference that cannot be resolved short of pervasive and fundamental changes to the UCC, U.S. common law, and UCITA. That is not the task set for UCITA.

Most existing state consumer protections do not seem to be failing of their goals in computer information transactions.

• *Does UCITA really remove software from existing consumer laws on goods?* **No.** Existing consumer laws have their own scope. Some apply to databases, some apply to services, some apply to software, and some do not. UCITA changes none of this. Each state must make their own choices as they have done for many years.

• *Does UCITA eliminate a consumer's warranty of merchantability?* **No.** UCITA adopts the implied warranty of merchantability essentially as it exists in existing Article 2. But that warranty is not present today in many transactions currently governed by common law. Common law has no warranty of merchantability. UCITA increases the scope of coverage of that warranty.

• *Does UCITA take away a consumer's right to inspect before accepting goods?* **No.** UCITA retains that right for consumers and for anyone else who acquires computer information. The inspection right in UCITA follows the right given under Article 2.

• *Does UCITA take away a consumer's right to reject goods?* **No.** UCITA follows the current law of goods on this issue.

Warranties

• *Does UCITA reduce the warranties that are given to licensees?* **No.** In fact, UCITA creates several new warranties, and adopts existing warranties from Article 2, thus expanding the scope of their coverage in some cases.

• *What warranties does UCITA provide?*

- **Express warranties.** Express commitments that are part of the basis of bargain are warranties under the same standard as Article 2, except UCITA benefits licensees by explicitly indicating that an express warranty can be created by advertising. It also retains current law as to published informational content. Section 402.
- **"Implied" warranty of non-infringement.** A warranty of non-infringement paralleling Article 2 or 2A, but gives greater protection to a licensee who provides specifications to the licensor. There is no warranty of good title since, with information products, licensors often do not have title (since they may be also licensees) and because in computer information transactions, the warranty of non-infringement is its equivalent. Section 401.
- **Implied warranty of quiet enjoyment.** A new warranty consistent with Article 2A on

leases that licensor will not interfere with enjoyment of the license. Article 2 parties do not give this warranty. Section 401.

- Implied warranty of merchantability. An implied obligation that a computer program will be fit for the ordinary purposes for which it is used. UCITA makes this warranty applicable to all computer programs, thus expanding the scope to software currently governed by common law, which does not have this warranty. Section 403.

- Implied warranty of fitness for a purpose. Implied obligation that the product will meet the licensee's known needs. UCITA applies the same rule as existing Article 2 except for cases that involve services contract obligations. Section 405.

- Implied warranty of system integration. New warranty. Implied obligation that group of elements will function as a system. Neither Article 2, nor Article 2A has this warranty. Section 405.

- Implied warranty of data accuracy. New warranty for information products that does not exist under current law. Section 404.

- * *Is it true that UCITA allows infringement warranties to be disclaimed but that Article 2 does not?* No. The disclaimer of implied warranties follows existing Articles 2 and 2A for sales and leases of goods.

- * *Is it true that UCITA eliminates a consumer's implied warranty of merchantability?* No. Section 403 parallels the implied warranty of merchantability in Article 2, applying it to software instead of goods (e.g., grain, toasters and the myriad different products) to which Article 2 applies. Common law has no implied warranty of merchantability. UCITA thus expands beyond common law to provide for such warranties.

- * *Is it true that UCITA makes it easier to disclaim warranties?* No. Actually, UCITA requires more informative language of disclaimer than does current Article 2. As in Article 2, if the disclaimer is in a writing, it must be conspicuous.

- * *Is it true that UCITA takes away protections that I have under current law where the licensor knows that the software contains serious defects?* No. Under Article 2, common law, and UCITA, that problem, when it exists, is a question of whether the licensor committed fraud. UCITA has the same rules as Article 2 on this issue. The law of fraud is not changed by UCITA.

Published Information Content

- * *What is "published information content?"* This is the information we read, listen to, enjoy and communicate. It is the content of digital newsletters, multimedia encyclopedias, and on-line databases. This is the material of the First Amendment. It is published and made available generally, in contrast to the type of information that a consultant or lawyer provides for its specific client.

- * *Why does UCITA deal with this type of information?* This type of information is an important feature of the "information age." Digital systems and changes in our economy have made this information a focus of significant commercial activity. Courts have recognized that digital information deserves protection just like traditional newspapers and magazines. UCITA ensures that First Amendment concepts protecting distribution of such information are recognized in contract law.

- * *So, what does UCITA do about this information, does it give me a right to sue if the information is wrong?* UCITA recognizes that excessive liability risk would stifle and harmfully chill the vibrant expansion of this type of commercial information service. UCITA adapts a rule that has been followed in most states under the *Restatement (Second) of Torts* § 552. This does not give members of the public a right to sue simply because information is incorrect. Think about the liability of your favorite newspaper or author if the result were otherwise. Liability for errors in informational content only occurs if the content provider is in a special relationship of reliance with its client. UCITA expresses this in a rule which says that there is no warranty of accuracy of data for published information content.

- * *So, does this mean that I have no rights whenever I buy or license published*

informational content?" No. You have the same rights that you have today. It means that there is no implied warranty for published informational content and that digital information is treated just like published print information in this respect. If a publisher promises to give you information about the sale price of racehorses, but the information is actually about cars, it has breached its contract.

• What does UCITA do with other types of informational content? UCITA creates a new implied warranty for information provided in a special relationship of reliance. The implied warranty is that there are no errors in data caused by failure of the information provider to use reasonable care. This parallels how many states deal with the liability of consultants and how the Restatement (Second) of Torts § 552 treats information providers under tort law. In contract law, it is a new warranty that benefits licensees.

Perfect Tender Material Breach of Substantial Performance

• How does UCITA determine when a person can refuse a performance by the other party? Generally, UCITA uses the same standard used in the Restatement (Second) of Contracts, in common law, and in international law. That rule says that you can refuse the performance and cancel the contract if the performance is a material breach of the contract or if your agreement allows you to do so. Another way courts say this is that you cannot cancel a contract if the other person's conduct was a substantial performance of its contract. If the breach is not material, you can collect damages, but cannot cancel and entirely refuse to pay or perform. Article 2 and Article 2A dealing with tangible goods and contracts that generally involve a one-time performance are alone using a different rule, but do so only in some cases. Even so, UCITA uses the Article 2 standard in mass-market transactions.

• Doesn't current law give a licensee a right to insist on a perfect product, but UCITA takes that away? No. In most contracts, the material breach rule already applies. More important, there is no law that requires a product to be literally perfect. That's impossible for complex products.

Article 2 (and 2A), unlike any other law, in some cases allows a buyer to refuse a product if the product does not "conform to the contract." That is actually the rule that some call the "perfect" tender rule.

But remember, a contract is interpreted in light of trade use (e.g., what's normal in the business) and the warranty of merchantability only requires products that fit the *ordinary* meaning of their description. The rule is also hemmed in by other rules in Article 2. The authors of a leading treatise on Article 2 state they are aware of no cases in which a court actually allowed rejection for minor defects.

• What does the substantial performance rule mean? Basically, this is a rule that prevents one party from ending a contract for minor problems. Think about a debtor who is one day late in a payment or a delivery company that delivers one hour late. Common law says that small problems should not be a basis for ending a contract. On the other hand, if the breach is material in that it eliminates a significant part of the value of the performance, refusing the performance and ending the contract are permitted. The fact that a computer cannot communicate to its hard disk is material, but the fact that a drill press is delivered to a factory with a small scratch on the outside of the press, is not. What is material depends on the context - a scratch in an expensive painting would most likely be material. UCITA says: a breach is material if the "breach substantially deprived or is likely substantially to deprive the aggrieved party of a significant benefit it reasonably expected under the contract." Courts have been applying this standard for years and seldom get it wrong, using it as a way to protect the injured party, but to avoid unwarranted forfeitures.

• Why does UCITA adopt the substantial performance standard? Licenses traditionally have been governed by the common law, which uses this standard. Also, the standard has been adopted in international law and even applies in Article 2 where more than a single delivery is contemplated. It applies in all services contracts. Many UCITA transactions are currently governed by it. Article 2 and 2A stand essentially alone in modern law in requiring so-called 'perfect tender,' in reference to a single fact situation only: a single delivery of goods. The substantial performance standard is, in short, the generally applicable rule because it is generally the best rule.

The rule also reflects that the complexity of software products makes them inherently imperfect. In fact, the idea of perfect software is a goal or aspiration not presently attainable, at least not without exorbitant costs that would drive many thousands of small companies out of the business. That last point is critical. By far, most software companies are small companies who simply cannot afford the cost to produce a "perfect"

software product and do not have the resources to do so. In the late 1990's, a popular program for small computers used by both consumers and commercial licensees contained over ten million lines of code or instructions. In the computer these instructions interact with each other and with other programs. This contrasts with a popular commercial airliner that contained approximately six million parts, many of which had no interactive function. Typical consumer goods contain fewer than one hundred parts. A typical book has fewer than one hundred fifty thousand words.

Finally, this rule prevents unwarranted forfeiture. For example, assume that you agree to develop software or a database using specified pictures. You spend several thousand hours over six months and deliver your work, but it has a minor nonconformity. The other party says there's no "perfect" tender and cancels the contract, refusing to pay anything. Under common law and UCITA, your breach would have to be material for the other party to do that: it can obtain damages from you for the breach, but it cannot terminate the entire contract and leave you with nothing.

If you have to accept substantial performance, how are you made whole for the difference between "substantial" and "perfect" performance? You have a right to damages and to offset the amount you lose against the amount you owe. Much more often, of course, you expect and receive a cure of the problem.

Does UCITA deprive consumers and other mass-market licensees of the perfect tender rule? No. Despite the above, valid reasons for not using a perfect tender rule, UCITA takes the "perfect tender" rule from Article 2 and applies it to mass market contracts, including consumer and retail business licensees.

Electronic Commerce Rules

What is the relationship between UCITA and the Uniform Electronic Transactions Act (UETA)? Basically, they are consistent statutes. The committees worked hard to maintain consistency, with both acts taking ideas from the other.

On what topics are they fully consistent?

- Both recognize the equivalency of electronic records and writings
- Both recognize the validity of electronic signatures
- Both recognize that contracts can be formed by electronic agents
- Both recognize that contracts can be formed by interaction of an electronic agent and a human being
- Both say a person is attributed with an electronic act if the other person can prove that the act was the result of the person or its agent
- Both make it clear that they do not require parties to use electronic commerce

How do UETA and UCITA differ? UCITA and UETA have different scope and purposes. UETA deals with all electronic "transactions," which it defines very broadly, but within that scope it is a procedural statute. UCITA focuses on contracts involving computer information, and within that scope it is a substantive contract law statute. Differences in rules result from those differences. UETA excludes from its scope substantive e-commerce contract rules in the UCC and substantive issues for computer information transactions. UCITA covers these substantive questions for computer information transactions.

UETA does not apply unless the parties agree to use electronic commerce as to that transaction. UCITA applies to all agreements within its scope.

UCITA addresses electronic commerce issues that UETA, as a procedural statute, does not: how terms of an electronic contract are established, what does conspicuous mean in this context, when is an on-screen click adequate to establish a contract, what state's law applies to an electronic contract, what is the effect of a choice of forum clause, what warranties attach to published information, what are default rules for information obtained by contract online, what are the rules for performing on-line, how are changes in on-going contracts made, how are contract terms decided as between electronic agents, what remedies are available contracts, etc.

Are UCITA liability rules the same as rules to credit cards? No, but credit card rules are not changed by UCITA since they are federal law. The credit card rules place risk of unauthorized use of a card on the card issuer (who passes it to the merchant, who passes it on to all its customers in pricing). The rule works well in controlled systems run by large entities. Internet commerce is not controlled and those

using it include both large and very small entities.

In looking at a similar issue, the Federal Reserve Board concluded after a year's study, that it would be premature to apply the "credit card" rules. The Clinton Administration echoes this approach and cautions against imposing a single model that would prevent the market from testing different possible approaches and that would restrict growth.

• *What are UCITA's rules for when I am bound by an electronic message?* UCITA provides that you are bound if it is proven that the message came from you or your agent. In addition, you are bound if you have agreed to be bound (e.g., if I agree with Westlaw that I am liable for any use of my access code).

• *Does UCITA alter a state's digital or electronic signature statutes?* No. Those statutes and their effect remain unchanged under UCITA.

Assent & Opportunity to Review

• *Why does UCITA create this new idea of "manifesting assent?"* Actually, it's not a new idea. It comes from the Restatement (Second) of Contracts § 19, which was written in 1971. The UCITA section on this concept essentially follows the Restatement idea, adding some important procedural concepts to it.

• *Does the Restatement will repeat it in UCITA?* Several reasons. First, like all Restatement rules, this term has not been adopted as a statute. The concepts are generally applied, but the cases are non-uniform. Putting the concept in a uniform statute helps everyone understand it and thus promotes commerce. Second, UCITA adds some procedural concepts that clarify manifesting assent in important ways. For example, there must be a clear "opportunity to review" the contract before assenting. Also, the UCITA section on assent gives guidance on how to safely obtain assent on-line by using an extra step confirming the initial indication of assent.

• *Since the Restatement does not use any software illustrations of manifesting assent, does UCITA wrongly apply this idea to software?* Certainly not. The Restatement was published in 1971 and, at that time, commercial software was no more than a glimmer in anyone's eye. More to the point, the Restatement does not try to cite cases for all areas of contract - if it did so, it would be hopelessly long. The concept of assent by conduct is quite clearly part of contract law and as applicable to software licenses as to other contracts.

• *What does "manifesting assent" mean?* There have always been many ways to make a contract: parties can orally agree, they may do something that indicates agreement, or a party may sign an agreement. Section 19 of the Restatement (Second) of Contracts uses the term "manifestation of assent" to describe some of these methods that involve conduct and UCITA follows that approach.

In UCITA, you "manifest assent" to a contract when, having had an opportunity to review the written terms, you act or fail to act and you have reason to know that the other party will infer from your conduct or lack of conduct that you agree to the contract. For example, let's say that I offer to sell you my television for \$500. I give you the television and the terms of a contract. Without saying that you agree, you take the television home and begin to use it. You had reason to know that I would think that you had agreed to the contract and your actions manifested assent to the agreement.

• *What is an opportunity to review?* An "opportunity to review" essentially means that you've had a chance to look at the contract before you assent to it. When you don't see the contract until after you've paid for your order, you aren't deemed to have had an opportunity to review unless you have reason to know terms will follow and you are offered a right of return after you have a chance to read the license. In other words, you don't have to keep the item if you don't like the contract terms once you see them. In UCITA, manifest assent rules address procedural criticisms often made about adhesion contracts.

• *What if I don't read the contract, am I still bound by it?* Yes. UCITA and common law both require only that you have a chance to read the contract, not that you actually read it. Many of us sign and accept contracts without reading them in full. This is not good practice, but it does not mean that this

failure by one party can change the terms that the other party is relying on.

Mass Market Licenses

• *What is a mass market license?* A mass market license (MML) is a standard form contract used for transactions with the general public in a retail setting where the information is generic and the customer can be anyone. A license for "W-Perfection" is an example: it can be purchased by anyone at a retail store and the license and software is the same for every customer, i.e., an accountant or your retired mother. The term "MML" also includes all consumer contracts.

• *Is the concept revolutionary?* **Yes.** This is a concept created in UCITA that recognizes that the retail market is a context unto itself and one in which both consumers and businesses (especially small businesses) routinely participate as purchasers. Although this pattern also exists in transactions in goods, Article 2 does not use this concept. In UCITA, MML provisions protect consumers, but those protections also extend to businesses, no matter how large, that make retail purchases. This is a radical departure from existing law, which typically limits consumer protections to consumers.

• *Why should we permit MMLs?* The idea that you can contract with standard forms in the mass market is not new. You make contracts when you rent a car, buy a car, lease furniture, or purchase an airplane ticket. In information transactions, the contracts are even more important because they deal with intellectual property rights and rights of access to information. If you access AOL's computer system without a contract, in most states, you are committing a crime. If you use a clip art program to make public displays of the clips without a license, you are probably infringing a copyright. If you copy a word processing program for your house, your office, and your laptop computer without a license, you are infringing. The license is important to convey rights to the licensee and to allow publishers to create and market the variety of products that characterize the information industry today.

• *What are the rules for creating a MML?* The mass market license rules follow general contract law. An MML is effective only if the licensee manifests assent to it, after having an opportunity to review the terms of the contract (special rules apply to shrinkwrap licenses, not discussed here). Even if you agree to the license, however, the terms of the license are limited by the following rules:

- (i) *Unconscionable terms are unenforceable*
- (ii) *Terms that violate a fundamental public policy are unenforceable.*
- (iii) *Terms that conflict with the actual agreement of the parties are unenforceable (e.g., you are promised a 90 day refund right, but the license only provides 30 days).*

• *When does UCITA use this concept?* The following indicates the provisions where this concept ("MML") or a consumer concept ("CON") is used to limit the contract.

MML	CON	AGREEMENT THAT ACT GOVERNS; OPT-IN OR OPT-OUT OF UCITA
	CON	TRANSACTIONS SUBJECT TO OTHER STATE LAW
	CON	APPLICABLE LAW; CONTRACTUAL CHOICE OF LAW.
MML		ADOPTING TERMS OF MASS-MARKET LICENSES.
	CON	ELECTRONIC ERRORS: CONSUMER DEFENSES.
	CON	MODIFICATION AND RESCISSION.
MML		CONTINUING CONTRACTUAL TERMS.
	CON	THIRD-PARTY BENEFICIARIES OF WARRANTY.
MML		EFFECT OF NO TRANSFER CLAUSE
	CON	FINANCING ARRANGEMENTS: OBLIGATIONS IRREVOCABLE.
MML		COPY: REFUSAL OF DEFECTIVE TENDER.
	CON	CONTRACTUAL MODIFICATION OF REMEDY.
	CON	STATUTE OF LIMITATIONS.

Shrinkwrap Licenses

• *What is a "shrinkwrap?"* The term "shrinkwrap" refers to a contract that you do not see until after you initially agree to acquire a product and receive it. You might order a product over the phone or by mail: once it is delivered and you open the box, a contract might be contained in the box or in the start-up screen for the software. You are asked to agree to the contract by taking some act such as clicking on an "I accept" screen. In retail software licenses, a shrinkwrap is ordinarily a contract between the software publisher and the end user; the retail vendor is not involved. In goods transactions, a similar transaction occurs with "in the box" terms that are normally read only after opening the box.

• *Isn't it true that the only reason for UCITA is to validate shrinkwraps?* No. UCITA deals primarily with a wide range of other commercial contract issues that, prior to UCITA, have never been codified or clarified by law that is relevant to the actual type of contracts that are involved. This includes computer information transactions on the Internet. By far, the largest part of the computer information industry does not involve shrinkwrap contracts.

• *Isn't it true that shrinkwraps are always adverse to the licensee?* No. While a shrinkwrap often disclaims warranties in return for a limited express warranty, without it, the customer ordinarily has no contract rights against the software publisher at all. More important, most shrinkwrap licenses give rights to the licensee that it does not get if it buys a copy without a license. Often, if the license with the software publisher is unenforceable, the customer's use of the software is unauthorized and copyright infringement.

• *But isn't it true that shrinkwrap licenses are unenforceable under current law, and UCITA will enforce them?* No. Most courts hold that shrinkwraps are enforceable or simply enforce their terms without any contest of their enforceability. Some courts have invalidated such contracts where the deal was clearly closed before the shrinkwrap was presented and was not an agreed modification. However, shrinkwrap contracting is a standard method of doing business in both software and various types of hard goods. Billions of dollars of commerce rely on it. UCITA adopts, as uniform law, the position of the majority of the cases and adds procedural and substantive protections for the licensee that might be inferred, but are not made explicit in the decisions.

• *But doesn't UCITA allow shrinkwraps?* Yes, but only with limits. A mass market shrinkwrap license is unenforceable unless: (1) you had reason to know that more terms would be coming; (2) you are given a right to return the product if you don't like the terms; (3) your right of return is cost-free, and (4) you are reimbursed any reasonable costs of restoring your system if it was altered when you tried to read the license terms. Even then, under UCITA, the shrinkwrap cannot alter terms to which the parties actually agreed.

UCITA does give guidance on when and how these contracts are enforceable. However, one critic has alleged that UCITA adopts the least protective approach with respect to these contracts. In fact, it uniformly enacts greater restrictions on these contracts than case law or current Article 2.

• *Why would law want to allow such contracts?* That's easy. This is an efficient means of doing business that benefits both parties and is used in billions of dollars of transactions.

A number of leading contract law scholars have written in support of similar practices in criticizing proposals in Article 2 revisions. Professor Randy Barnett, Boston University School of Law, explained why when commenting on a proposal that would have invalidated this distribution method:

Though the idea of consumers paying for goods before they examine all the terms of the agreement has spooked some academics, their concerns [do not result from] any real impairment of contractual consent. [I] speak here not only as a contracts professor who has written extensively on the importance of contractual consent, but as a frequent consumer of such goods as electronics and software. It is not a bother in the slightest to pay for a good in a store, or on-line, and then examine the terms in the comfort of my own home provided that I can return the good should I reject the terms. To the contrary, I cannot imagine anything other than an aesthetic objection to this practice. True, consumers who dislike a term in the agreement are put to some inconvenience when they must return a good, as they would in returning any good with which they are not completely satisfied upon inspection, though even they benefit from the lower prices and more specifically tailored terms that result from the practice. But this minor inconvenience in no way warrants a frontal attack on this form of contracting on the grounds of lack of assent. There is certainly assent, though it happens after

initial payment. There need be no law against that.

Professor Hal S. Scott, Harvard Law School, in a letter to the Article 2 committee, described this type of contracting as an "established retail practice of sending the full legal terms of a purchased product with the shipped product, after payment has already been made. This practice is of great value to both sellers and buyers. [Invalidating or curtailing it would create] a costly and unworkable system of contract administration. These costs will be passed on to consumers in the form of higher product costs."

Self-help Repossession

UCITA Section 816 substantially limits licensor repossession of information, while Articles 2, 2A and 9 impose no limitations beyond trespass and breach of peace. Yet this section of UCITA has been quite controversial. What does it really say and how does it work?

• *Does it really allow self-help for any tiny default?* **No.** Section 816 only applies on cancellation of a license. Under Section 802, cancellation only occurs on a material breach of contract or a breach that the agreement makes sufficient to cancel the license. An Article 9 secured party, an Article 2 seller realizing on a retained security interest, and an Article 2A lessor, all are free to use their self-help rights upon any default, material or not.

• *Is it true that UCITA provisions are greatly imbalanced against the licensee?* **No.** Both Citibank and the Federal Reserve Bank of New York, who have great concerns about any availability of a self-help alternative and who participated extensively in the UCITA debates, have expressed their belief that the Act fairly balances the interests of the parties. In fact, UCITA creates protections for licensees that do not exist under current law and can seldom be negotiated.

• *Do any parties have self-help rights outside of UCITA?* **Yes**, and those rights are not subject to the many UCITA restrictions. An Article 2A lessor may repossess the leased item (e.g., a computer loaded with software); an Article 9 secured party may repossess a computer and software that secures a loan. In both of these statutes, the lessor (or secured party) can disable goods without notice. In cases not governed by UCITA, it is likely that electronic methods to do this will become increasingly frequent. Article 2 sellers who retain title obtain a security interest and thus have the same rights as a secured party.

• *Does UCITA create a right that does not exist under current law?* **No.** Self-help is allowed by statute to non-UCITA parties, including licensors who retain a security interest, and no statute or court has held that it is prohibited. The limited case law suggests that it can be done under current law, at least if the licensee had reason to know the remedy is available. In the ordinary case where software is copyrighted, the right to prevent copying is a copyright right; cases hold copying occurs when the software is used. Recent amendments to the federal copyright act authorize, and prevent circumvention of, technological access controls, devices (programs) that limit access to copyrighted works. This is the ordinary method of electronic self help.

• *What new restrictions does UCITA impose on the self-help rights that are not imposed on lenders, sellers and lessors?* UCITA offers extensive protections for the licensee that do not exist today and that could not be negotiated by most companies. These include:

- There can be no self-help without an express assent by the licensee to the self-help clause (i.e., it cannot be buried in an agreement)
- It must provide for 15 days prior notice to a place and person that must be specifically designated by the licensee
- When given, the notice must state the nature of the breach
- The licensee may recover direct and incidental damages, and also consequential damages caused by improper use (disclaimers in the agreement cannot eliminate this) as long as the licensee notifies the licensor about the possibility of the damages (or the licensor has reason to know about them)
- No self-help may be used even under agreement, if the licensor has reason to know that there is substantial risk to public health or safety or grave harm to third parties
- A court must give prompt consideration to an application for injunction against the self-help even if the licensee has agreed to its use.

• *Is it true that non-UCITA vendors can't really exercise self-help effectively?* **No.** While the argument has emotional appeal, it simply is not true in light of modern product design. Lenders are free to require borrowers to install "turn-off" software that will allow the lender to disable financed equipment in place and from a distance. Vendors may do so as a form of product design choice. Lessors may do so as part of readying their product for lease. No restrictions are imposed under Article 9, Article 2 or Article 2A.

• *Why do any licensors care about self-help?* This right is of primary concern to small licensors. Over half of all software companies employ fewer than 12 people, yet these companies often license software to much larger company licensees. Given the greater financial resources of these licensees and their ability to sustain a long court battle, often the only practical way for a small developer to get paid or even get the attention of a licensee is to have a self-help remedy.

Duration of a license

• *Does UCITA make a license subject to termination "at will" even if the parties agree to a license term?* **Definitely no.** The duration of a license is whatever the parties agree to. In the modern mass market, many software licenses are for a "perpetual term." UCITA enforces that agreement. In other cases, especially on-line licenses, license terms are for different, specified periods.

• *Well, then, when does it say that a license can be terminated at will?* **Only if the parties did not agree on how long it lasts.** UCITA follows current law (but adds new rules that benefit licensees). As in UCITA, both Article 2 and the common law say that either party can terminate at will when no contract duration is agreed. In UCITA, a court can find an agreement on duration based on trade use or course of dealing, so this rule only comes into play when there is no other basis to determine how long the license lasts. Then, UCITA says "for a reasonable time," but subject to termination at will.

• *Doesn't UCITA pay any attention to the fact that many software licenses today are perpetual licenses?* **Yes it does.** First off, under UCITA, like under Article 2, if it is normal for the duration to be perpetual, a court could find that this was the parties' agreement even if they didn't say so in writing. Second, UCITA creates two entirely new rules that greatly benefit a licensee. It says that in cases where title to a copy is transferred or where the license is for a single fee, the license is presumed to be perpetual even though the parties did not say so. There is no equivalent rule under current law.

• *Isn't a licensee better off with current law than UCITA?* **No.** Without UCITA, the licensee is in a worse position in any software license that does not state its term of duration.

Transferability of the License

• *Does UCITA make it harder for a licensee to transfer a nonexclusive license?* **No.** UCITA creates transferability rules that go far further in favoring transferability than does current law. Whether these are effective depends on federal copyright and patent law, which place important limits on the transferability of software and other nonexclusive licenses.

• *Does UCITA change the law on transferability of a software license?* It retains most current state law. The basic UCITA rule is identical to the current rule in Article 2 for goods: it presumes transferability unless a transfer would have a serious negative effect on the other party. But state law is not the only law here. An unbroken line of federal cases hold that nonexclusive patent and copyright licenses are not transferable without the consent of the licensor. UCITA cannot change that federal law rule. It provides a state law rule that applies whenever the federal law rule does not.

• *Does UCITA make financing software licenses more or less difficult because of its transferability rules?* **It makes financing less difficult.** UCITA creates an entirely new special rule that

allows a financier supporting the acquisition of software under a leasing arrangement to obtain a financing interest effectively without formal consent from the licensor. If the financing involves a security interest, Article 9 controls to the extent it is not preempted by federal law. The Article 9 rules, which also attempt to make financing more possible, were developed in tandem and are consistent with UCITA.

• *What about contract restrictions on transfer: are they enforceable?* **Yes.** UCITA does not change the law here, but follows both the theme of contract freedom and the view of the Restatement (Second) of Contracts. UCITA does require, however, that such a restriction in a mass market license be conspicuous so that the mass market purchaser has notice of what it is and is not acquiring.

The issue is not whether a person can transfer a diskette, but whether a person can transfer the license rights to use the computer information. As the Restatement says, ideas about free alienability of tangible property are not relevant to contracts. The Restatement recognizes a person has a right to insist on the terms of their contract, including a term that makes that contract only useable by a designated person. For computer information, this is buttressed by the general federal policy on transferability. Federal cases routinely enforce license restrictions limiting who can use the rights granted under a license.

• *Does UCITA make all restrictions on transfer of a license enforceable?* **No.** It creates important new rules that make it easier to transfer in some cases. For example, UCITA provides that a restriction cannot prevent the creation of a financier's interest and that a restriction is not enforceable to prevent transfer of a work into which the originally licensed computer information was incorporated pursuant to the license. These are important expansions on transferability that are effective if not preempted by federal law.

Choice of Law

• *What is meant by choice of law?* There are two things. One is about the effect given to an agreement choosing what state's law applies ("agreed choice"). The second deals with how to decide which state's law applies if the parties have not agreed on a choice ("court choice"). This subject is dealt with in almost all contracts simply because the law in the absence of a contract choice is so uncertain.

• *Why does UCITA deal with this when UCC Article 2 does not?* Article 2 does deal with this issue. It uses rules in UCC Article 1 which make agreed choices unenforceable unless they choose a state that has a reasonable relationship to the transaction. The reason for dealing with "agreed choice" and "court choice" in UCITA is that, in Internet transactions and the multistate and international business environment that is our current economy, these are critical commercial issues. Current law, including Article 1, is uncertain. By dealing with these issues in a statute, needless and costly litigation is avoided. The Clinton administration has said that: "[The] global community must address complex issues involving choice of law and jurisdiction – how to decide where a virtual transaction takes place and what consumer protection laws apply."

• *Does UCITA allow the licensor to choose any law it wishes?* **No.** UCITA allows the agreement to control in most cases. This is also the rule in Article 1 and the Restatement (Second) of Conflicts of Law. It is followed by the vast majority of all reported court decisions. Remember, contract law typically allows the parties to agree on the terms of their relationship; choosing an applicable state law is one way of doing this. The various approaches to this differ only in details about when a court should refuse to enforce the agreement. We believe that the UCITA approach is the best suited to Internet and information commerce.

• *What limitations does UCITA place on contract choice of law?* Of course, the choice must be part of an agreement. Beyond that, it is not enforceable if the contract term is unconscionable. It's not enforceable if it would violate fundamental public policy of the state. Finally, in a consumer case, an agreed choice cannot alter mandatory consumer protection law that would apply if the choice were not made. That is, the contract cannot be used to unfairly impose onerous results or to circumvent mandatory rules that otherwise could not be changed by agreement. In addition, since this is contract law, as a general principle of law, it does not affect tort law, such as claims of fraud.

• *Why isn't the "reasonable relationship" test of Article 1 good enough choice of law rule?* UCC Article 1 allows parties to choose a governing law only if the transaction bears a reasonable relationship to the chosen state. This test was drafted in an older, less mobile time and is not adopted in general common law or in other statutes, including UCC Articles 4A (wire transfers) and revised Article 5 (letters of credit). The test has many problems. It does not address questions of fundamental policy or mandatory consumer rules. In Internet information transactions, it restricts the agreement based on a rule that may be impossible to apply. What states bear a "reasonable relationship" to a transaction that occurs entirely in cyberspace where the electronic communications may not indicate either party's location and the information may be in or transferred to an entirely different place?

UCITA reflects the belief that devoting countless hours of litigation to answering such questions was not productive and should be avoided. This is especially true since the test does not consistently protect either party or any identifiable state interest. Quite clearly, simply because a state has a reasonable relationship to a transaction does not mean its law is better or worse for the licensee or licensor. If two companies in the U.S. and Iran agree that British law should govern their contract, why is that choice invalid unless it violates fundamental policy or is unconscionable?

• *Isn't it true that software companies choose foreign law just to hurt the consumer?* No. An example that is often cited is a company that chose Irish law in a mass market license. The thing is, that was an Irish company. The fact that it was licensing in the U.S. and making agreements directly with U.S. licensees shows how global the economy is. After having looked at a large number of mass market licenses that have an agreed choice of law, it is clear that almost all the time, the choice is the home state of the licensor. This could be California, Texas, New York, Arizona, Utah, etc. These are not choices made because the law of the home state is worse for licensees, but because the choice lets the publisher focus on one state's law and, thus, reduce costs in marketing globally. In fact, many of these states have laws that are far less favorable to licensors than the law of other states.

• *What happens if there is no agreed choice under UCITA?* One treatise describes the status of choice of law rules ("court choice") as "chaos." UCITA will change this for information transactions. First, for Internet information transfers, it establishes a clear rule that will allow small and large providers to concentrate on one state's law, rather than on the law of fifty states and hundreds of countries that might otherwise apply. In Internet transactions, the choice of law where there is no agreed choice is the state of the licensor's principal place of business. Any other rule would create an endless need to learn the law of all states and all countries. Second, in consumer cases where a tangible product is delivered, UCITA specifies that the law is the law of the state where the product is to be delivered - most often, this is the consumer's residence or the place where the transaction physically occurred. Finally, in all other cases, UCITA enacts the rule proposed in the Restatement: the law of the state with the most significant relationship to the transaction. The goal in a contract law statute is fairness and certainty. These rules foster both.

Choice of Forum

• *What is UCITA's choice-of-forum rule?* UCITA allows choice of an exclusive judicial forum, but only if the choice is not "unreasonable and unjust." This gives courts a basis on which to invalidate abusive terms, but also recognizes that in a global, Internet economy, it is important for parties to be able to agree on where they can sue or be sued. This is especially important in information industries where the vast majority of all companies and commercial participants are small entities. Determining appropriate jurisdiction in the Internet is extremely difficult and, in other settings, has already resulted in over one hundred reported decisions. An agreement resolving this issue can be very important commercially.

• *Is it true that UCITA creates a new rule radically favorable to licensors that is not found in existing law?* No. UCITA actually follows an increasingly long line of state and federal court decisions establishing this rule, including several decisions by the U.S. Supreme Court. Many recent decisions actually hold that such a clause is "presumptively" enforceable unless shown to be unreasonable. The Restatement (Second) of Conflict of Laws provides that "The parties' agreement as to the place of action ... will be given effect unless it is unfair or unreasonable."

But doesn't this really mean that the licensor can force me to go to court in a foreign country? No, it wouldn't. Courts under a rule like the rule in UCITA have been more than capable of invalidating those agreements that are designed simply to prevent someone from suing and that have no reason or commercial basis. They will continue to do so under UCITA. If a party has no reason to select a particular jurisdiction and the effect of its selection is unjust, then the selection is invalid.

But aren't all forum clauses in standard form agreements unfair and unenforceable? No. The Supreme Court looked at that question and recognized that many times such clauses are totally reasonable. The choice of forum in that case allowed a cruise ship company to avoid the risk of being sued at any and all ports of call. Although the passenger did not have the ability to negotiate the term, the Supreme Court said:

Nevertheless, including a reasonable forum clause in such a form well may be permissible for several reasons. Because it is not unlikely that a mishap in a cruise could subject a cruise line to litigation in several different fora, the line has a special interest in limiting such fora. Moreover, a clause establishing [the forum] has the salutary effect of dispelling confusion as to where suits may be brought.... Furthermore, it is likely that passengers purchasing tickets containing a forum clause ... benefit in the form of reduced fares reflecting the savings that the cruise line enjoys...."

A recent appellate court recognized that the same considerations are present and commonplace now "in other international ventures, especially those involving the type of electronic communication and computer integration involved [here]." The same is true on the Internet: a recent appellate court decision enforced a "click-wrap" choice of forum clause in the MSN membership agreement for online services, holding that the clause did not violate any public policy.

The fact that a term is in a standard form that cannot be negotiated may be a factor, but it's not decisive. That is exactly why courts should look at this under a standard of reasonableness and fairness. UCITA requires this. Indeed, in the Supreme Court case quoted above, the choice of forum was contained in a non-negotiable standard form.

Thomas M. Quinn, *Quinn's Uniform Commercial Code Commentary And Law Digest* (Second Edition) at ¶ 1-102[A] (1991).

For example, for consumer goods, the federal Magnuson-Moss Warranty Act governs over Article 2. Yet, not a word is said in Article 2 about preemptive federal law.

DSC Communications v. Pulse Communications, -- F.3d -- (Fed. Cir. 1999) (the case involved a standard form software license used in the telecommunications industry). See also *MAI Systems Cor. v. Peak Computer, Inc.*, 991 F.2d 511 (9th Cir. 1993); *Expeditors int'l of Wash., Inc. v. Direct Line Cargo Mgmt Servs., Inc.*, 995 F. Supp. 468 (D. N.J. 1998) (licensee not an owner).

Some courts, however, use this fundamental policy idea to invalidate some contract terms. See *Consumers Union of U.S. v. General Signal Corp.*, 724 F.2d 1044 (1983) (Consumers Union restriction on quoting data from magazine unenforceable).

Two law professors (professors Perlman and McManus) who during the years of UCITA debate separately made motions designed to protect fair use and free speech interests in contracting have publicly stated that the provisions of Section 105 and its comments fairly meet their motions and resolve the concerns.

"Fair use" describes "limited and useful forms of copying and distribution that are tolerated as exceptions to copyright protection." *Pacific & Southern Co. v. Duncan*, 744 F. 2d 1490, 1494 (11th Cir. 1984), cert. den., 471 U.S. 1004 (1985). The doctrine embraces use of copyrighted work for purposes of criticism, comment, news reporting, teaching, scholarship, research or the like. It is not a wholesale privilege to use portions of copyrighted works for any purpose.

See, e.g., *Cubby, Inc. v. CompuServ, Inc.*, 3 CCH Computer Cases 46,547 (S.D.N.Y. 1991); *Daniel v. Dow*

Jones & Co., Inc., 520 N.Y.S.2d 334 (N.Y. City Ct. 1987).

Restatement (Second) of Contracts § 237. A similar standard exists in international law. The Convention on the International Sale of Goods (CISG) states: "A breach ... is fundamental if it results in such detriment to the other party as substantially to deprive him of what he is entitled to expect under the contract..." CISG Art. 25. UNIDROIT Principles of International Commercial Law state: "A party may terminate the contract where the failure of the other party to perform an obligation under the contract amounts to a fundamental non-performance." UNIDROIT art. 7.3.1(1).

Even in Article 2, however, a substantial performance standard applies to any case where more than one delivery is contemplated.

An A.B.A. Software Contract Task Force recommended that the perfect tender rule be abolished with respect to software contracts because of the complexity of the software product and the fact that minor flaws ("bugs") are common in virtually all software." UCITA, 1/20/97 Draft, Reporter's Note 8 to § 2B-108.

The following comment is illustrative. It was submitted by Matthew Dixon Cowles to Ed Foster, InfoWorld Contributing Editor, who solicited email and published a column to elicit comments on UCITA from end users:

I'm a consultant and a developer. Since I get to see things from the user's point of view and from the programmer's point of view on most days ... Think of it this way: a moderately small app [lication] these days might contain 10,000 lines of source code. Each of those lines of code is roughly analogous to a part in the product. When was the last time you could buy something other than software that has 10,000 parts and costs \$60? When was the last time you could buy something other than software that has 10,000 parts and went from conception to delivery in 12 months?

Cars make a good analogy here, I think. They're expensive, boring, and take forever to get to market but consumers are well protected. Would you like to wait three years for the testing to be done on version 2.0 of your newest piece of software? Would you like to pay for that testing in the price of the app?

When was the last time you saw a really exciting, innovative app that was written by a large software company? I haven't seen one in years. (I'm biased, I'm a small software company.) Small developers, no matter how conscientious, almost certainly can't afford the kind of testing that would ensure that no user had a problem no matter how strange the user's system. If you wanted to distribute an app for Wintel boxes, could you afford to buy enough PCs so that you were sure you had one of every version of every BIOS in use to test the thing on?

... Mind you, I'm very much in favor of developers testing their code and documenting and fixing their bugs. I try to do all of those things very carefully. But I don't think that anyone but a few giant software companies could afford the kinds of testing, returns, and insurance that you seem to suggest software developers should be required to spend money on.

See Board of Governors of the Federal Reserve System, *Report to the Congress on the Application of the Electronic Fund Transfer Act to Electronic Stored-Value Products* (March, 1997).

U.S. Government Working Group on Electronic Commerce, *First Annual Report* at 14 (11/98).

See e.g., 12 CFR § 226.3 (Regulation Z, on credit transactions, does not apply to business credit except for certain credit card provisions; even consumer credit over \$25,000 is generally exempt. Also, FRB can exempt transactions involving even consumers with an annual income exceeding \$200,000 or net assets exceeding \$1 million. See § 2104, The Economic Growth And Regulatory Paperwork Reduction Act of 1996); 12 CFR 213.2 (6) (Regulation M, which applies to leases of personal property, only applies to consumers and has a dollar limit cap); UCC Article 2A-103(1)(e) (uniform definition of "consumer lease" limits protections to consumers and contains provision for dollar cap); and see usury statutes which typically do not apply to business loans. The federal Magnuson-Moss Warranty Act is an exception, but only pertains to tangible consumer products. 15 USC § 2301.

The distinguishing element here is not that this is a standard form to which the licensor does not allow negotiation. It is the presentation of terms after the product is received. There is no question about the enforceability (subject to public policy and unconscionability issues) of standard form licenses where terms are assented to up-front in on-line or other settings. Indeed, Internet transactions depend on this. See, e.g., *Storm Impact, Inc. v. Software of the Month Club*, 44 U.S.P.Q.2d 1441 (N.D. Ill. 1997) (on-line license preventing commercial use); *Hotmail Corp. v. Van\$ Money Pie, Inc.*, 47 U.S.P.Q.2d 1020 (N.D. Cal. 1998);

Caspi v. The Microsoft Network, L.L.C. et. al., -- N.E.2d -- (NJ Super. Ct. 7/2/99) (choice of forum clause in online contract which consumer could review entire contract and click "I Agree" or "I disagree" enforceable).

See *Micro Star v. Formgen, Inc.*, 942 F. Supp. 1312, aff'd 154 F.3d 1107 (9th Cir. 1998) (court concluded that either the license barred the conduct or there was no license and therefore no defense to the claim of infringement).

See *ProCD, Inc. v. Zeidenberg*, 86 F.3d 1447 (7th Cir. 1996); *Hill vs. Gateway 2000 Inc.*, 105 F.3d 1147 (7th Cir. 1997) (enforceable based on use without objecting to contract for computer); *Brower v. Gateway 2000, Inc.*, 676 NYS2d 569 (NY AD 1998); *M.A. Mortenson Co., Inc. v. Timberline Software Corp.*, 1999 WL 39017 (Wash.App. 1999); *Arizona Retail Sys., Inc. v. Software Link, Inc.*, 831 F.Supp. 759 (D. Ariz. 1993) (enforceable where no prior firm agreement because terms conditional, but not effective where prior telephone agreement); *Caspi v. The Microsoft Network, L.L.C. et. al.*, Superior Court of New Jersey Appellate Division, A-2182-97T5 (approved for publication 7/2/99) (choice of forum clause in online contract which consumer could review entire contract and click "I Agree" or "I disagree" enforceable). Further, other decisions not within the information industries also validate that contract terms not seen at the time of contracting can be enforceable. See *Carnival Cruise Lines, Inc.*, 499 U.S. 585 (1991). Among the cases enforcing the terms of a shrinkwrap without delving into arcane enforceability questions is *Green Book Int'l Corp. v. Inunity Corp.*, 2 F. Supp. 112 (D. Mass. 1998). See also *Micro Star v. Formgen, Inc.*, 942 F. Supp. 1312, aff'd 154 F.3d 1107 (9th Cir. 1998) (lower court enforced license buried in code; appellate court did not review this issue, concluding that either the license barred the conduct or there was no license to prevent claim of infringement). Compare, e.g., *Vault Corp. v. Quaid Software*, 655 F.Supp. 750, aff'd 847 F.2d 255 (5th Cir. 1988) (lower court held contract was invalid contract of adhesion, appellate court did not review this issue).

See *Step-Saver Data Sys., Inc. v. Wyse Technology*, 939 F.2d 91 (3d Cir. 1991); *Arizona Retail Sys., Inc. v. Software Link, Inc.*, 831 F.Supp. 759 (D. Ariz. 1993) (shrink wrap enforceable where no prior agreement because terms conditional, but not effective where prior telephone agreement).

See Article 9-503; Article 2A-525(2) and 2A-501(1) and (3) ("... default under a lease contract is determined by lease agreement and this Article."); and Article 2A-523 and Official Comment No. 2 ("the lessor and the lessee can agree . . . [that] the lessor can exercise the rights and remedies referred to . . . whether or not the default would otherwise be held to substantially impair the value of the lease contract. . .").

See *American Computer Trust Leasing v. Jack Farrell Implement Co.*, 763 F. Supp. 1473 (D. Minn. 1991) (use of remote deactivation device after a payment default permitted and not a tort); *Franks & Son, Inc. v. Information Solutions, Comp. Indus. Litig. Rep.* ¶¶ 8927-8935 (N.D. Okla. 1988) (use of disabling code enjoined where existence was not previously disclosed to buyer); *North Texas Preventive Imaging, LLC v. Eisenberg*, SA CV 96-71 AHS (C.D. Cal 8/19/96, unpublished), 1996 U.S. Dist. LEXIS 19990, where the licensor included, without notice, a disabling code in a disk labeled as an "update" to an existing program. There is no suggestion that the parties could not have initially contracted for the disabling code. To the contrary, in determining whether an action existed under the federal Computer Fraud and Abuse Act, the court quoted the legislative history wherein Senator Leahy stated that the act "would not criminalize the use of disabling codes 'when their use is pursuant to a lawful licensing agreement that specifies the conditions for reentry or software disablement.'" *Id.* at 11.

See, e.g., U.C.C. § 2-309. See also *Rano v. Sipa Press*, 987 F.2d 580 (9th Cir. 1993) (but this rule preempted with respect to a copyright license); *Walthal v. Rusk*, 172 F.3d 481 (7th Cir. 1999) (terminate a will; no preemption); *Ticketron, Ltd. v. Flip Side, Inc.*, 1993 WL 214164 (N.D. Ill. 1993); *Soderholm v. Chicago Nat'l League Ball Club*, 587 N.E.2d 517 (Ill. App. 1992).

--- This is the same rule suggested in the Restatement(Second) of Contracts and adopted in common law in most states.

See, e.g., *Everex Sys., Inc. v. Cadetrax Corp.*, 89 F.3d 673 (9th Cir. 1996) (patent license); *Harris v. Emus Records Corp.*, 734 F.2d 1329 (9th Cir. 1984) (copyright); *Michaels v. Internet Entertainment Group, Inc.*, 5 F. Supp. 823 (C.D. Cal. 1998) (license in videotape); *In re Patient Education Media, Inc.*, 210 B.R. 237 (Bankr. S.D.N.Y. 1997) (license in photographs); *Microsoft Corp. v. Harmony Computers & Elecs., Inc.*, 846 F. Supp. 208 (E.D.N.Y. 1994) (software license); *In re Altech Plastics*, 71 B.R. 686 (Bankr. W.D. Tenn. 1987). A limited exception may exist in some circuits which allow a reorganized debtor in bankruptcy Chapter 11 to assume a pre-existing license. See *Institute Pasteur v. Cambridge Biotech Corp.*, 104 F.3d 489 (1st Cir. 1997).

See e.g., *MAI Systems Corp. v. Peak Computer, Inc.*, 991 F.2d 511 (9th Cir. 1993); *Microsoft Corp. v. Harmony Computers & Elecs., Inc.*, 846 F. Supp. 208 (E.D.N.Y. 1994).

U.S. Government Working Group on Electronic Commerce, *First Annual Report* at 27 (11/98)
<http://www.doe.gov/e-commerce/E-comm.pdf> (visited 12/26/98).

Restatement (Second) of Conflict of Laws § 187 (may be invalid if not resolvable by contract and either there was no "reasonable basis" for the choice of that state's law, or "application of the law of the chosen state would be contrary to a fundamental policy of a state which has a materially greater interest than the chosen state in the determination of the particular issue.").

See, e.g., *Finch v. Hughes Aircraft Co.*, 57 Md. App. 190, 469 A.2d 867, 887, cert den 298 Md. 310, 469 A.2d 864 (1984), reh. den. 471 U.S. 1049 (1985); *Medtronic Inc. v. Janss*, 729 F.2d 1395 (11th Cir. 1984); *Universal Gym Equipment, Inc. v. Atlantic Health & Fitness Products*, 229 U.S.P.Q. 335 (D. Md. 1985); *Northeast Data Sys., Inc. v. McDonnell Douglas Computer Sys. Co.*, 986 F.2d 607 (1st Cir. 1993).

Some courts already use this principle in some cases to avoid use of an agreed choice to circumvent important state interests. See *Application Group, Inc. v. Hunter Group, Inc.*, 61 Cal. App.4th 881, 72 Cal. Rptr.2d 73 (Cal. App. 1998); *Wolfe v. Protégé' Sys., Inc.*, 506 S.E.2d 429 (Ga. App. 1998).

See, e.g., *Northeast Data Sys., Inc. v. McDonnell Douglas Computer Sys. Co.*, 986 F.2d 607 (1st Cir. 1993) (agreed choice of law enforceable and determines law applicable to claims under contract or claims that are disguised contract claims; does not alter law in reference to claim of fraud).

UCC § 1-105(1).

See, e.g., *MS Bremen v. Zapata Offshore Co.*, 407 U.S. 1, 10 (1972) ("prima facie valid"); *Carnival Cruise Lines, Inc. v. Shute*, 499 U.S. 585 (1991); *Evolution Online Sys., Inc. v. Koninklijke Neferlan NV*, 145 F.3d 505 (2d Cir. 1998); *Sterling Forest Assocs, Ltd. v. Barnett-Range Corp.*, 840 F.2d 249 (4th Cir. 1988); *Republic Leasing Co., Inc. v. Haywood*, 495 S.E.2d 804 (S.C. App. 1998); *Proteva Inc v. Warrantech Help Desk, Inc.*, 1999 WL 90638 (ND Ill. 1999) (choice of forum in software agreement enforced).

See, e.g., *Gilman v. Whear, First Securities, Inc.*, 692 A.2d 454 (Md. App. 1997); *Texas Source Group, Inc. v. CCH, Inc.*, 967 F. Supp.2d 1114 (S.D. Tex. 1997).

Restatement (Second) of Conflict of Laws § 80.

See *Mellon First United Leasing v. Hansen*, 1998 WL 907954 (Ill. App. 1998).

Carnival Cruise Lines, Inc., 111 S.Ct. 1522, 1527 499 U.S. 585 (1991).

Evolution Online Sys., Inc. v. Koninklijke Neferlan NV, 145 F.3d 505 (2d Cir. 1998).

Caspi v. The Microsoft Network, L.L.C. et. al., A-2182-97T5 (N.J. Super A.D. 1999) (choice of forum in online "click-screen" contract was enforceable and did not conflict with public policy given that class would involve many different domestic and international domiciles; nothing about the presentation or placement of the clause indicated that it was proffered unfairly or with a design to conceal or de-emphasize it).

HOUSE SPECIAL COMMITTEE ON ECONOMIC DEVELOPMENT & TOURISM

Review of E-commerce Issues

Wednesday, March 15th, 2000 5:00 p.m. – First Meeting Capitol Room 124

List of Participants

Representative Gail Phillips – Introduction

Representative Sharon Cissna - Discussion of e-commerce issues

Lt. Governor Fran Ulmer – State of Alaska

**E-commerce in the State of Alaska and the Technology Information Council
(TIC)**

Jamie Kenworthy - Alaska Science and Technology Foundation (ASTF)

**Availability of capital for E-commerce businesses and partnering
opportunities across the State**

ED Neuman – Hollis Alaska Resident

“SE Alaska - A new Appalachia?”

Robin Naughton – Seattle Web Developer

An Alaskan who went south to find success – Her Story.

Ted Quinn – Capitol Office Supplies

A Juneau Success Story



The EMERGING DIGITAL ECONOMY II

**ECONOMICS AND STATISTICS ADMINISTRATION
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The EMERGING DIGITAL ECONOMY II



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The EMERGING DIGITAL ECONOMY I

CHAPTER I

ELECTRONIC COMMERCE IN THE DIGITAL ECONOMY*

"The newest innovations, which we label information technologies, have begun to alter the manner in which we do business and create value, often in ways not readily foreseeable even five years ago."

Alan Greenspan
Chairman, Federal Reserve Board
May 6, 1999

Two facets of the "digital economy," electronic commerce (i.e., business processes which shift transactions to the Internet or some other non-proprietary, Web-based system) and the information technology (IT) industries that make e-commerce possible, are growing and changing at breathtaking speed. Not only were we unable to foresee five years ago how advances in information technology would "alter the manner in which we do business and create value," but the rate of change is racing ahead of estimates that only a year ago appeared optimistic. This chapter looks at the dimensions and growth of e-commerce, while the following chapters examine IT industries and their impact on various facets of the U.S. economy.

The value of e-commerce transactions, while still small relative to the size of the economy, continues to grow at a remarkable rate. More significant than the dollar amount of these transactions, however, are the new business processes e-commerce enables and the new business models it is generating. Both the new Internet-based companies and the traditional producers of goods and services are transforming their business processes into e-commerce processes in an effort to lower costs, improve customer service, and increase productivity.

Driven by customer demand and business imperatives, the digital economy is becoming truly global. The United States continues to lead the world in many measures of the utilization of digital technology. However, this lead is diminishing.

Gauging the Growth of E-Commerce

Electronic commerce is a means of conducting transactions that, prior to the evolution of the Internet as a business tool in 1995, would have been completed in more traditional ways—by telephone, mail, facsimile, proprietary electronic data interchange systems, or face-to-face contact. Indicators gathered from a variety of private sources show rapid growth, not only in current e-commerce, but in the infrastructure that will support future e-commerce development.

Setting the Stage for E-Commerce: An Increasingly Wired World

While individual private estimates of Internet access and size vary significantly from each other, taken together they indicate remarkable growth. [1] For example, *The Industry Standard* reports that from 1998 to 1999 the number of web users world-wide increased by 55 percent, the number of Internet hosts rose by 46 percent, the number of web servers increased by 128 percent, and the number of new web address registrations rose by 137 percent. [2] In addition, according to a recent study by International Data Corporation (IDC), between 1998 and 1999 revenues of U.S. Internet service providers (ISPs) will rise by 41 percent. IDC projects that these ISP revenues will continue growing at a compound annual rate of

when compared to the higher income countries included in Figure 1.2. In Mexico, a nation of close to 100 million, for example, only about 1 million people have access to computers and only 10 percent of those presently access the Internet.[7]

Not only is the Internet growing larger, but the ways it is used are changing. According to Media Matrix, as recently as 1996, education sites dominated the top 15 list of most visited sites. The top 15 that year included *no* e-commerce sites. Today, nearly all of the top web-site destinations offer content, communications, community, and commerce.[8] Sending or receiving email, obtaining information about a hobby, general news, and information for business continue to outrank online shopping as popular online activities.[9] The fact that Internet advertising revenues more than doubled between 1997 and 1998 suggests the growing importance that businesses are placing on this new way of reaching customers.[10]

The Rise in E-Commerce

Public and private efforts to develop economy-wide measures of e-commerce are continuing. Available evidence of the growth in e-commerce comes primarily from the industry and firm sources. This evidence is impressive:

- Dell Computer's online sales more than doubled during 1998 rising to more than \$14 million per day and accounts for 25 percent of the company's total revenues. During the quarter ended April 30, 1999, online sales rose further to an average of \$18 million per day and now account for 30 percent of the company's \$5.5 billion first quarter revenues. Dell expects this percentage to increase to 50 percent by 2000.

[11]

- During first quarter 1999, Travelocity.com had gross sales of more than \$128 million, a 156 percent increase over the same period last year, and registered 1.2 million new members.[12]
- Users of Quicken Mortgage, Intuit's online mortgage provider, arranged for \$400 million in loans in the first three months of 1999 compared to \$600 million in mortgage loans for all of 1998.[13]
- During the first quarter of 1999, according to Piper Jaffray, online brokerages broke their fourth quarter 1998 records by adding another 1.2 million accounts and \$100 billion in new assets, and increasing the average number of daily trades by 49 percent.[14]

In light of the recent growth in e-commerce, many private forecasts made just a year ago have been revised upward. As we cited in last year's *Emerging Digital Economy Report*, in early 1998, forecasters were suggesting that business-to-business e-commerce might rise to \$300 billion by 2002. Most forecasters now consider that estimate to be too low. For example, Forrester Research estimates that business-to-business e-commerce will rise to \$1.3 trillion by 2003.[15] Similarly, early 1998 estimates suggested that Internet retailing might reach \$7 billion by 2000. In all likelihood, this level was exceeded *last year*; current private estimates of 1998 online retail trade range between \$7.0 billion and \$15 billion. Forecasters now project online retail sales in the range of \$40 billion to \$80 billion by 2002. And even these increased forecasts of both business-to-business and business-to-consumer e-commerce may prove to be low if a recent study financed by Cisco Systems, which estimates that 1998 total e-commerce (business-to-business plus business-to-consumer) was \$102 billion, is a more accurate estimate.[16]

Standard definitions of e-commerce must still be established. Current market research estimates of aggregate online retail trade generally purport to include only those transactions ordered *and* paid for online. But they must rely on data supplied by individual companies who may not keep information that way. Individual companies sometimes include as online sales transactions those transactions that were conducted *substantially* online, but which also include a critical non-Internet component. For example, although eBay encourages sellers to establish an account tied to a credit card, they will accept one-time payments by check or money order. Similarly, Dell Computer's online revenues include sales where, although the majority of the transaction occurred online, the final steps were conducted over the telephone.

The Internet plays an important role in a much larger number of transactions than those completed online. In addition to the shoppers who choose items online, but pay for them off-line, the Internet is an important source of research that influences

addition, the White House has directed that an initiative be developed to help accelerate the spread of the Internet and e-commerce to developing countries.[28]

Just as rates of Internet access are uneven within the United States, so too will global expansion of Internet access occur unevenly. Even in Europe, which is cited by a recent study as the "fastest growing and most interesting market for Internet development" outside of North America, transition to the global digital economy may be highly diverse.[29]

Recognition of the benefits that can arise from full participation in the information economy is not limited to the world's developed nations. For much of the world, however, e-commerce and the movement to a digital economy in general are constrained by a lack of critical infrastructure. Both on national and transnational levels, developing countries are struggling to determine how they too can benefit from the emerging digital economy, given other needs and the condition of their electric and telephonic infrastructure. Even in a country such as South Africa, which has made great strides in recent years, the problems are formidable. In 1994, less than 40 percent of South African households had electricity; now 63 percent of households are connected to the electricity grid. In 1994, about a quarter of all homes had telephones; now 35 percent are linked to the telephone system.[30] For developing nations, the productivity potential of the digital economy offers both hope and worry: with sufficient investment, it can provide the means to accelerated development, but without the needed investment, developing nations may find themselves falling even further behind in an increasingly wired world. It is important that governments set policies that will facilitate, not hinder, Internet development. The five principles first set out in a report released by the President and Vice President in 1997, "A Framework for Global Electronic Commerce,"--private sector leadership, avoidance of undue restrictions, establishment of a legal environment based on a contractual model of law, recognition of the unique qualities of the Internet, and facilitation of global e-commerce--have provided a useful starting point for national and international discussions of how to foster e-commerce development. [31]

Recognizing the global shift to e-commerce, providers are responding. One estimate indicates that the amount of non-English language material available on the Web is growing so quickly that by 2003 more than half the content will be in a language other than English, up from 20 percent today. In addition, improvements in translation services (by people and machines) and browsers that recognize characters of different languages will greatly expand the amount of content usable by the entire worldwide Internet citizenry.[32]

As the Internet moves the world toward truly global markets, it seems likely that Internet transactions will grow large enough to measurably impact trade flows. However, the size and direction of those impacts remain uncertain. It is clear that the opportunity the Internet offers to access new markets has attracted attention, and Web-sites are being developed specifically, in some cases, to expand global reach. Recently, US-Style.com launched the first online community-based shopping mall targeting Japanese consumers seeking American goods and services. This e-commerce site is written in Japanese and features a Japanese user interface and customized versions of select U.S. retailers' existing web sites.[33]

Many U.S. companies have been able to leverage their position in the U.S. market into strong global positions by customizing their goods and services to local markets and, in many cases, joining with local partners. However, U.S. businesses also face real competition as evidenced by the many new products and services coming from firms outside of the United States. For example, Japan is the launch site for the world's first integrated credit/debit/cash card[34] and the Nordic countries are pioneering the market for wireless e-commerce. [35] Notwithstanding this growth in global competition, U.S. producers of everything from infrastructure equipment to Internet content should continue to experience strong advantages in the worldwide information technology market--advantages conferred by continued improvements in the production of high-quality, innovative goods and services.

E-Business: Defining New Business Models

The impact of e-commerce on the economy extends far beyond the dollar value of e-commerce

card used in conjunction with an e-purchasing system can help companies streamline the purchasing process for a total savings of up to 95 percent compared with manual purchase orders.[40]

In addition, e-commerce capabilities are giving birth to entirely new classes of business intermediaries. Forrester Research groups the new business activities under three headings: aggregators, auctions, and exchanges. These new activities attack different inefficiencies and provide different opportunities:

- **Aggregators create a business community:** Aggregators pool supplier content to create a searchable one-stop shopping mall with predefined prices for buyers within a business community. For example, Chemdex serves this function for the buyer community of research scientists. These cyber-stores help geographically dispersed buyers and sellers find each other fast.
- **Auctions create markets and reduce sellers' losses:** Auctions pit buyers against each other to purchase seller surplus. On the Web, sellers and buyers can participate in multiple, real-time auctions simultaneously—without accruing physical-world search and travel costs.
- **Exchanges create stable online trading markets:** Like stock exchanges, online exchanges provide vetted players with a trading venue defined by clear rules, industry-wide pricing, and open market information. An online industry spot market can operate at a fraction of physical-world cost.[41]

Government Data Collection Activities

Federal statistical agencies are working to understand and measure e-commerce more effectively, but many issues remain that must be resolved. Some of the measurement issues, such as those related to the difficulty in measuring output and quality changes in services industries, are not new. Questions such as, "what is the output of a lawyer?" or "how does the existence of ATM machines improve the quality of the services banks can deliver?" have been the subject of much research. Finding solutions to the services measurement issues has taken on a new urgency, however, as the move toward a digital economy has increased the importance of these industries to the economy. Further, the digital economy is blurring definitions. Some products, such as CD's, that are now considered goods, have the potential of becoming services in the process of being downloaded. Finally, the rapid rate at which the digital economy is evolving, has businesses themselves changing faster than our ability to capture them in particular categories.[42]

In response, the Census Bureau has launched a multi-faceted initiative to deliver the first official measures of U.S. e-business; document the effects of e-business on key economic performance measures; and propose a flexible data collection program to meet future e-business statistical needs. The Bureau will ask about the dollar value of e-commerce sales to the *Annual Survey of Retail Trade* and publish in late 2000 or early 2001, the first official U.S. data on e-commerce, covering online retail trade for the calendar years 1998 and 1999.

The Bureau of Economic Analysis (BEA) has also established an action plan to develop new measures reflecting e-commerce and to take account of the effects of the digital economy on overall economic activity. BEA is focusing specifically on improving price indexes and real output measures, developing new estimates of software investment, improving its measures of output for financial and other services that are major IT-using industries, and working to strengthen estimates of capital stock to reflect the growing importance of high-tech equipment.[43]

The initiatives of both the Census Bureau and BEA include plans to work more closely with the private sector to better understand the impacts of the digital economy on process changes and output. In addition, the agencies are exploring ways to supplement their data collection efforts with data collected privately and are examining new opportunities to move to online data collection.

On a more general level, the Federal statistical agencies are in the process of shifting industry groupings

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The EMERGING DIGITAL ECONOMY II

A LOOK AHEAD

Although we have learned much in the year since we published the first *Emerging Digital Economy* report, there is much more to be discovered and understood. We better appreciate the growing impact of the digital revolution on America and the world's consumers and businesses, we have begun to gauge the economic importance and impact of the IT sector, and our federal statistical agencies have formulated plans to effectively measure and analyze e-commerce.

During the recent Department of Commerce conference on these subjects, *Understanding the Digital Economy: Data, Tools, and Research*, (May 25 and 26, 1999), a range of public and private experts explored many important issues for the digital economy. The conference included discussions of the macroeconomic implications of IT; its impact on business organizations, market structure and small firms; new issues of access and competition for the digital economy, and the effects of IT on employment and the workforce. Immediately following this Conference, the Berkeley Roundtable on the International Economy held another conference on IT's global aspects, *The Digital Economy in International Perspective: Common Construction or Regional Rivalry?*^[1] Both conferences served not only to expand our understanding of the digital economy, but also to highlight where more research is urgently needed.

The decision by the Department of Commerce to publish the *Emerging Digital Economy* report every year signifies our commitment to ongoing research. Thus far, we understand and can measure only a few of the pieces of the digital economy. Even as we do, many of those pieces are changing, more are emerging, and the shape of the whole is rapidly evolving. Future reports will be devoted to developing a coherent picture of the digital economy, to help both American businesses and government do their best in this critical area.

^[1]Information on *Understanding the Digital Economy* can be found at <http://www.ecommerce.gov/ede/lookahead.html> and information on *The Digital Economy in International Perspective* can be found at <http://e-economy.berkeley.edu>.

APPENDIX TO CHAPTER II

INFORMATION TECHNOLOGY PRODUCING INDUSTRIES

This Appendix describes the sources of data and methods used to assess the economic impacts of Information Technology (IT) Producing industries represented in Chapter II of the *Emerging Digital Economy II* (EDE II) report.

DEFINING INFORMATION TECHNOLOGY PRODUCING INDUSTRIES

IT-producing industries selected for EDE II are the same as selected for last year's (1998) *Emerging Digital Economy* report. (Table A-2.1) As in last year's analysis, the criteria for selection were "industries that produce, process, or transmit information goods and services as either intermediate demand (inputs to production of other industries) or as final products (demand by consumers, investors, government, or exports) or industries that provided the infrastructure necessary to operate the Internet and electronic commerce (e-commerce).

IT-producing industries were selected according to their definition in the Office of Management and Budget's 1987 Standard Industrial Classification (SIC) Manual. Next year's report will use the new North American Industry Classification System (NAICS). The NAICS provides for an expansion of the number of industries classified, particularly in the new Information Sector.

Finally, industries presented here, in no way, represent an *official* U.S. government listing of IT-producing industries. Industries were selected as objectively as possible for this particular economic assessment. International organizations such as the Organization for Economic Co-operation and Development and private industry associations such as the American Electronics Association and the Information Technology Institute also maintain lists of what they consider to be IT-producing industries, which vary from the one used here.¹

¹See last year's *Emerging Digital Economy* report for a comparison of industries used in this analysis with those used by the AEA and ITI.

MEASURING INFORMATION TECHNOLOGY PRODUCING INDUSTRIES

IT-producing industries were measured in terms of their Gross Product Originating (GPO). GPO by industry is the contribution of each private industry and government to Gross Domestic Product (GDP). An industry's GPO, often referred to as its "value added" (the term used in last year's report) is equal to its gross output (sales or receipts and other operating income, commodity taxes, and inventory change) minus its intermediate inputs (consumption of goods and services purchased from other industries or imported). GPO and value added can be thought of more directly as the sum of the costs incurred by an industry, such as compensation of employees, net interest and indirect business taxes, and profits earned in production.

The analysis of IT-producing industries was made consistent with the Gross Product by Industry series published by the Bureau of Economic Analysis (BEA) which adds to GDP. Although GPO and value added are considered to be the same, value added data for manufacturing industries published by the Census are not the same as the BEA's published GPO series, *i.e.*, BEA excludes an industry's purchases of "other services" (SIC 89) in its GPO by industry measurement, not excluded by the Census value added measurement. For example, in 1996, the Census value added for the Electronic and electric equipment industry (SIC 36) was \$184.0 billion. The BEA GPO for SIC 36 was \$141.6 billion, a \$42.4 billion difference. This difference becomes a factor in the estimate of GPO for 4-digit SIC IT-producing industries, as discussed in the next section. In this analysis, the value added data from the Census was made consistent with the GPO series and is described below.

Annual production data were used to determine the effect on prices and contribution to overall economic (GDP) growth of IT-producing industries, *whether or not* all of the industry's production was finally used as an information product or by the Internet or electronic commerce. For example, not all production from the semiconductor industry is used by the computer industry and other industries considered to be IT-producing. Semiconductors are also used in autos, home appliances, and a variety of other goods. However, it would be difficult, if not impossible, to differentiate the industry's sales by users. Therefore, total annual production data of the semiconductor industry are used in this analysis.

GPO by industry avoids the duplication (double-counting) resulting from adding an industry's value of shipments, sales, or revenues to that of another industry. For example, the value of shipments of the computer industry already includes cost of semiconductors which is included in the semiconductor value of shipments. Adding the nominal GPO of the two industries avoids this double-counting. The sum of GPO for all industries and Government is GDP.

GPO of IT-Producing Industries: 1990-96

The following is a description of the data and the methods used to derive GPO at the 4-digit SIC industry level for 1990 through 1996 for the IT-producing industries. (Table A-2.2) Published data from the Census at the 2, 3, and 4-digit SIC industry level and BEA at the 2-digit SIC level were used to derive these 1990-

1996 estimates of GPO. Published 4-digit SIC industry level data were not available for 1997-99 where industry growth estimates were used to determine GPO. This method is explained in the next section.

GPO for Hardware and Communications equipment IT-producing industries, all in manufacturing, were derived from Census value added data, at the 4-digit SIC level, and then made consistent with BEA's Gross Product by Industry data. Census sources for value added of these 4-digit SIC IT-producing sectors were from the 1990-91 and 1993-96 *Annual Survey of Manufactures* and from the 1992 *Census of Manufactures*.

The Census 4-digit industry value added data for IT-producing industries were adjusted by BEA's Gross Product by industry series at the 2-digit SIC level, within the same overall industry categories. For example, the Census published value added of Semiconductors (SIC 3674) of \$56.3 billion was reduced by a factor of 0.77 in 1996 (the ratio of BEA's GPO for Electronic and electric equipment (SIC 36) of \$141.6 billion compared with the Census value added of \$184.0 billion). Thus, nominal GPO in 1996 for semiconductors was estimated to be \$43.3 billion.

GPO for wholesale trade of computer equipment (part of SIC 5045) was added to the category called IT-producing hardware industries since over half of wholesale trade of computers came directly from computer manufacturers' branch offices. Although counted by the Census as a wholesale sale and not a manufacturer's shipment, the actual sale is primarily a direct manufacturer's sale. The nominal value of computer sales from branch offices of manufacturers has been twice that of computer sales directly from manufacturing facilities through the 1990s.

Annual source data for 1990-91 and 1993-96 for wholesale trade of computers and equipment were available at the 3-digit SIC industry level in the Census' Current Business Report called the *Annual Benchmark Report for Wholesale Trade*. In this report, gross margins (sales less costs of goods sold) by wholesale industries were reported under SIC 504, Wholesale sales of professional and commercial equipment and supplies.

Source data for wholesale trade of computers and computer equipment in 1992, at the 4-digit SIC industry level are available from the Census' 1992 *Economic Census of Wholesale Trade* and were used to derive the GPO for SIC 5045, Wholesale sales of computer equipment (and software). In this report, data for SIC 5045 include sales and purchased operating expenses from merchant wholesalers, manufacturer's sales from branch offices, and agents, brokers, and commission merchants. This Census report also separates sales and purchased operating expenses for computers, both equipment and software.

The ratio of manufacturer-branch office sales to total wholesale sales of computer equipment (part of SIC 5045) and their corresponding purchased operating expenses were taken directly from the 1992 report. This ratio was then used to distribute the gross margin data of the annual reports (SIC 504) to derive final estimates of GPO of manufacturer sales of computer equipment from branch offices for 1990-91 and 1993-1996 at the 4-digit SIC level.

GPO for retail trade of computer equipment and software (SIC 5734) was derived in much the same way

**LT. GOVERNOR
FRAN ULMER**

Telecommunications Information Council Activities Update

Office of the Lt. Governor/Feb. 23, 2000

The Telecommunications Information Council (TIC), created by statute in 1988, is charged with developing policies related to telecommunications and information technology. Membership includes the Governor, commissioners of all departments, representatives of the Alaska Court System and the Legislative Affairs Agency, and one member of the public. Two legislators, one from the House and one from the Senate, serve as non-voting members. In 1995 Governor Knowles designated Lt. Governor Ulmer to chair the TIC, which meets quarterly.

TIC Committees

TIC Policy Committee: This is an executive committee of the TIC that sets the agendas for the TIC and its advisory committees and serves as a driving force behind major policy initiatives. Members are Lt. Governor Ulmer, Annalee McConnell of OMB, Commissioner Shively, Commissioner Poe, Commissioner Cross, Deputy Commissioner Smith of DPS, Deputy Commissioner Chase of DMVA and Chancellor John Pugh of the University of Alaska Southeast. Staff advisers include the director of the Department of Administration's Information Technology Group and the Lt. Governor's chief of staff and special assistant for telecommunications. The Policy Committee meets approximately twice a month.

TIC Technical Advisory Committee: Each department has designed one of their top information technology specialists to serve on the TAC. The committee is asked to advise the TIC on a variety of technical issues, such as standards, security and evaluations of capital projects proposed by state agencies. The TAC, chaired by John Lindback, chief of staff to the Lt. Governor, meets monthly.

TIC Advisory Committee on Emergency Communications: This group, chaired by Deputy Commissioner Del Smith of Public Safety, meets as needed for departments with an interest in emergency communications (DPS, DMVA, DH&SS, DOA) to make recommendations on issues that cross department lines. The current focus of this group is the migration of land mobile radios to a new federally mandated standard.

TIC Advisory Committee on Geographic Information: This recently appointed group will concentrate on geographic information systems and how the state can work in partnership with federal agencies and the private sector. The full range of geographic information issues will be discussed, including the emergence of high-resolution satellite imagery and its potential uses by state agencies and the University of Alaska.

TIC Initiatives

Creation of a State Telecommunications and Information Technology Plan: In 1996 the TIC developed and adopted a state plan that provided a blueprint for agencies, the public and telecommunications providers. An update of that plan is scheduled for early 2001.

Boosting the State of Alaska's presence on the Internet: At the direction of TIC, the State of Alaska's offerings of information, services and transactions on the internet has dramatically increased. Alaskans can now go to the web to read public notices of all kinds, check the ferry and railroad schedules, view the latest election results, check on the status of their Permanent Fund dividend application, apply for state job, purchase a fishing license, renew a car registration, purchase a special license plate, review campaign contribution information, download an application for a business license, and much, much more.

Setting standards for state government: The TIC promotes efficiencies within state government by setting technology standards for state agencies. As a result of TIC actions, all state agencies are now using the same suite of desktop software products, which makes it easier for state employees to communicate with each other. State government now has a statewide email system, allowing technicians in most agencies to spend time on other priorities.

Online training of state employees: A partnership between the Gartner Group, a leading technology consulting firm, the state of Alaska and the University of Alaska, led to creation of a unique online technology training program for state employees and University of Alaska students. State employees can now access hundreds of online training courses from home or work, provides obvious benefits to the state and improves the long-term "employability" of workers.

Special projects and initiatives:

- The potential uses of satellite imagery by state agencies was the focus of a TIC-sponsored conference last December.
- A telecommunications partnership project that involves seeking proposals from telecommunications providers to take over portions of the state-owned telecommunications network is now underway.
- The TIC, in partnership with the University of Alaska, created a videoconferencing system to service state agencies.
- Cost efficiencies for public television and rural television (ARCS) were achieved when the TIC directed implementation of a digital system.

Other Telecommunications/IT Related Projects and Initiatives

FCC State and Local Advisory Committee on Universal Service: Lt. Governor Ulmer was appointed to serve on this committee, which provides advice to the Federal Communications Commission on state and local communications issues, such as continuation of the education rate for educational institutions, state and local authority over location of transmission towers, etc.

Denali Commission survey on rural telecommunications services: The Denali Commission, co-chaired by Lt. Governor Ulmer, recently approved up to \$50,000 for a survey of the telecommunications services available in rural Alaska communities and what residents they pay for them. When the survey is completed, policy makers will be able to determine the price and availability of services such as telephones, cable television, internet for each village in rural Alaska.

Digital signatures: Regulations to implement Alaska's new digital signature will take effect shortly. Certification authorities, the businesses that sell digital signature certificates to the public, will soon be able to register with the state of Alaska.

Jobs for Alaskans in the technology industry: The Alaska Science and Technology Foundation last week approved a pilot project to identify, recruit, and place 50 new information technology apprentices into a minimum of 20 Alaska companies. This will be done through formation of a consortium composed of businesses, educational institutions and other organizations with an interest in economic development and training.

Telemedicine: The State of Alaska is participating in partnership with federal agencies, telecommunications providers and health care providers to assess the best uses of telemedicine applications in Alaska, how to break the barriers to effective use of telemedicine in our state, and strategies to finance development costs.

National Recognition for Alaska

The State of Alaska has just been ranked second in the nation among all 50 states for facilitating electronic commerce. The Digital State Award is granted by the Center for Digital Government. Last year, the state placed 9th overall. The State also won a coveted "Best of the Web" award from Government Technology Magazine. The National Association of State Chief Administrators selected Workplace Alaska and the Alaska Division of Motor Vehicles Partnership Program for its 1999 Overall Award for Innovation. In addition, the DMV program earned an innovator in technology award from the Smithsonian and *Computerworld* Magazine.

JAMIE KENWORTHY
ASTF

ALASKA INFORMATION TECHNOLOGY WORKERS

Job Function	Problem Addressed	Alaska Providers Education/ Training	# Graduates '97-'98-'99	Certification	Likely Employer	Career Objective	Current Entry Salary/ 5-yr. Goal	Alaska Demand
Next Generation System, Product Development, or customized application	Basic knowledge of underlying technology to create new application, system, or integrated application including code development.	Computer science and software engineer grads at UAF/UAA	UA: 16/17/11 Charter: AVTEC: MicroAge:	System Engineer	IBM, software development firms, Research-university CS/EE engineering department Integrators (Microage, NBS, SAIC, Digitech, CTG, etc.)	Corporate-tech track-project leader management - CIO, MIS Director if MBA/exp Research- university dept head/center director	Corporate \$40-70K entry/ 80-120 K 5-year Goal University-35-40 entry/80-100 K 5 year	Low No lead hardware software producers do R&D in AK-IBM, MS, Novell etc.
Project Management	Manage other IT projects	PMI management technology experience	UA: Charter: AVTEC: MicroAge:	IT Experience & Management Ability	Both contractual and consultants	Management	\$50K/entry \$50-120K 5-year Goal	Moderate
Software Engineer	Customized programming and data manipulation	Software engineering with industry background/MBA	UA: Charter: AVTEC: MicroAge:	System Engineer Microsoft, Novell, 3 Com, Engineer (MCSE, etc.)	Private-Entrepreneurial or corporate product dev or gov University -SE dept	Entrepreneurial firms + CIO/MIS University-Center Director	Corporate - \$35-50 K entry/\$65-120 K 5-year Goal Univ-\$35-45K entry/65-95 K 5 yr	Moderate to High Increasing with entrepreneurial activity
Computer Engineer	Hardware emphasis to system design	usually CS/EE major, UA, APU, Charter	UA: 2/3/1 Charter: AVTEC: MicroAge:	Cisco & Novell Network Professional	Consulting-CTG, etc.	Corporate-VP Engineering	\$40-70K entry/ \$80-120 K 5 yr	Low-Moderate
System/Network Design/Administrator, MIS	Design overall system for hard/soft installation and operations	generally university grads in CS/EE/math/etc Certified -by NBS, Microage, Compu sa	UA:32/48/35 Charter: AVTEC: MicroAge:	CNE/MCSE Network Administrator Microsoft, Novell, Cisco	systems consultants like CTG,NBS who have IT processing contracts with oil companies, others	high position in consulting firm less likely corporate CIO	\$50-70 K entry/ \$100-150 K 5 year	High
Security & Audit Management	Oversee security and audit ISEAC, CISA	Some certification	UA: Charter:	ISEAC CISA	Vendors, internal audit		\$35K \$50-\$70K 5-year Goal	Moderate

Job Function	Problem Addressed	Alaska Providers Education/ Training	# Graduates '97/'98/'99	Certification	Likely Employer	Career Objective	Current Entry Salary/ 5 yr Goal	Alaska Demand
			AVTEC: MicroAge:					
Data Communications Technicians	Set up, maintain, install, and operate data communications in public telephone ex A7m, frame relay, sonet, fiber optics, voice over IP	U.S. Military; in-house training, IBEW apprenticeship program	UA: Charter: AVTEC: MicroAge:		All phone companies (ATU, GCI, AT&T, etc.), Alaska Fiber Star Interconnect companies (commerce)	Telephone company info managers at private firms, objective is technology mastery	\$30-35K/entry \$75-90K/5 years	High
Certified Hardware LAN/WANS	Maintain & Upgrade LAN/WAN Hardware	Trained by vendors, local packager like Microage, or Charter College on UA regional campuses	UA: Charter: AVTEC:14/14/14 MicroAge:	Cisco, Novell, 3 Com Certified Professional Microsoft Professional	IT providers to perform to maintain systems: Microage, CTG, NBS etc. or free lance	Move up to higher certification	\$30-435K \$80-490K/5-year Goal	High
Certified Desktops	Maintain and upgrade systems	Trained by vendors, local packager like Microage, or Charter College on UA regional campuses	UA: 38/40/25 Charter: AVTEC: MicroAge:	Professional Certified Microsoft	IT providers to perform to maintain systems: Microage, CTG, NBS etc. or free lance	Move up to higher certification	\$30-35 K entry/ \$70-90 K 5 year	Very High
Non-certified Applications Consultants	Set up customized apps, optimum use of installed base, or web design & build	Not certified. Many self-taught, hackers and ex-teachers, military, lib arts. Com College	UA: Charter: AVTEC: MicroAge:	No	usually self-employed or consulting firms or ISPs	Driven by variety of challenges and frontier practical know how	\$25-40 K entry/ \$50-70 K 5 years	High

Soft Skills for Specific IT Job Functions

Job Function	Highest Priority Soft Skills*	High Priority Soft Skills
Next Generation System, Product Development, or Customized Application	Demonstrate ability to: ▪ Communicate with a variety of audiences ▪ Understand goals and constraints, generate alternatives, consider risks and evaluate opinions. ▪ Diagnose problems and propose comprehensive plans of action. ▪ Suggest application modifications and improvements.	Demonstrate ability to: ▪ Generate unique solutions, work outside the box. ▪ Show commitment to customer. ▪ Use logic to draw conclusions. ▪ Relate intent to desired results. ▪ Write technical documents.
Project Management	Demonstrate ability to: ▪ Interpret or clarify communication with all stakeholders in a clear, concise and objective manner. ▪ Manage time and resources, develop schedules and organize processes. ▪ Actively participate and predict outcomes based on experience or prior knowledge.	Demonstrate ability to: ▪ Prioritize needs. ▪ Analyze situation and formulate plan of action. ▪ Accept responsibility for project outcomes. ▪ Adapt to change, be flexible. ▪ Integrate systems technology resources. ▪ Logic and math abilities. ▪ Create detailed supporting documents.
Software Engineer	Demonstrate ability to: ▪ Interpret, clarify, and influence communications. ▪ Analyze customer needs and summarize information and requirements. ▪ Predict technological results. ▪ See patterns and relationships between separate pieces/parts. ▪ Pose critical questions to judge logical consistency and product quality.	Demonstrate ability to: ▪ Identify and resolve conflicts. ▪ Relate intent to desired results. ▪ Evaluate options and make decisions. ▪ Manage time, negotiate resources, formulate schedules. ▪ Establish rapport with co-workers and customers. ▪ Collaborate with a team. ▪ Break down technical terms and concepts. ▪ Coach others to adopt and apply new concepts.
Computer Engineer	Demonstrate ability to: ▪ Analyze customer needs and relate to concerns and fears. ▪ Predict technological results. ▪ Interpret, clarify, and influence communications. ▪ Establish rapport with co-workers and customers, breaking down technical barriers. ▪ See patterns and relationships between separate pieces/parts.	Demonstrate ability to: ▪ Judge product service/quality. ▪ Pose critical questions. ▪ Identify and resolve conflicts. ▪ Manage time, negotiate resources, and formulate schedules. ▪ Summarize information and requirements. ▪ Evaluate options and make decisions. ▪ Coach others to adopt and apply new concepts.

Job Function	Highest Priority Soft Skills*	High Priority Soft Skills
System Network Design/Administration	Demonstrate ability to: ▪ Create supporting documents, clearly summarizing information and requirements. ▪ Communicate with variety of audiences and diverse groups. ▪ Think logically and sequentially to troubleshoot and maintain system. ▪ Recognize and prioritize problems, devise and implement plans of action. ▪ Encourage cooperation among different groups, internal and external.	Demonstrate ability to: ▪ Follow proper rules/policies/procedures. ▪ Ask open-ended and confirming questions. ▪ Be reliable and available. ▪ Evaluate project timeframes. ▪ Understand how users interact with the system. ▪ Analyze industry trends and forecast future needs.
Security & Audit Management	Demonstrate ability to: ▪ Recognize abnormal system performance. ▪ Create detailed support documentation. ▪ Identify, evaluate and resolve environmental problems. ▪ Consider risks and implications. ▪ Judge system effectiveness and efficiency. ▪ Responsibly challenge unethical practices/decisions.	Demonstrate ability to: ▪ Follow proper rules/policies/procedures. ▪ Utilize logic and math to solve problems. ▪ Communicate with diverse groups and encourage cooperation.
Data Communications	Demonstrate ability to: ▪ Communicate technical terms. ▪ Critically analyze details and needs and recommend a plan of action. ▪ Present alternatives in clear and concise language. ▪ Troubleshoot and solve problems. ▪ Analyze information and develop theories about interdependencies.	Demonstrate ability to: ▪ Resolve conflicts. ▪ Stay focused on desired outcomes. ▪ Implement and integrate new systems, continually improving processes. ▪ Participate in team tasks. ▪ Predict outcomes. ▪ Communicate and negotiate with diverse groups.
Certified Hardware LAN/WAN	Demonstrate ability to: ▪ Communicate technical terms. ▪ Critically analyze details and needs and recommend a plan of action. ▪ Present alternatives in clear and concise language. ▪ Troubleshoot and solve problems. ▪ Analyze information and develop theories about interdependencies.	Demonstrate ability to: ▪ Resolve conflicts. ▪ Work with minimal supervision. ▪ Stay focused on outcomes. ▪ Communicate and negotiate with diverse groups. ▪ Participate in team tasks. ▪ Predict outcomes.

Job Function	Highest Priority Soft Skills*	High Priority Soft Skills
Certified Desktops	Demonstrate ability to: ▪ Communicate at the appropriate audience level. ▪ Identify and solve problems, detecting underlying issues and probable causes. ▪ Resolve conflict to customer's satisfaction. ▪ Summarize /paraphrase information and requirements in a clear and concise manner. ▪ Listen attentively, observing verbal and nonverbal communication.	Demonstrate ability to: ▪ Encourage cooperation/negotiation. ▪ Work with minimal supervision. ▪ Collaborate with internal and external customers. ▪ Accept responsibility for own behavior and impact on others.
Non-certified Applications Consultants	Demonstrate ability to: ▪ Communicate at the appropriate audience level. ▪ Identify and solve problems, detecting underlying issues and probable causes. ▪ Resolve conflict to customer's satisfaction. ▪ Summarize /paraphrase information and requirements in a clear and concise manner.	Demonstrate ability to: ▪ Encourage cooperation/negotiation. ▪ Listen attentively. ▪ Accept responsibility for own behavior and impact on others. ▪ Apply reasoning skills to identify potential solutions. ▪ Make exceptional effort on customer's behalf.
Internet Web Applications/Digital Media Development	Demonstrate ability to: ▪ Predict and communicate outcomes to customers. ▪ Communicate and negotiate with customer in clear concise language. ▪ Value differences of opinion and make reasonable compromises. ▪ Visually organize information and judge product quality and appeal.	Demonstrate ability to: ▪ Apply creative thinking and innovation while problem solving. ▪ Manage project resources and timelines. ▪ Define customer needs. ▪ Communicate in public, excellent presentation skills.
Database Administration	Demonstrate ability to: ▪ Work cooperatively with others and contribute ideas, suggestions, and assistance. ▪ Understand and respond to customer concerns. ▪ Pay attention to details. ▪ Think logically and organize information. ▪ Interpret, clarify and influence communication with diverse issues and groups.	Demonstrate the ability to: ▪ Negotiate and resolve conflicts. ▪ Work with minimum supervision. ▪ Visually analyze relationship between parts and whole. ▪ Manage resources to maximize effectiveness and minimize installation time. ▪ Solve problems with innovation thinking. ▪ Understand procedures and work processes.

*Highest priority was given to the soft skills cited by five or more of the surveyed respondents.

**ED NEUMAN
HOLLIS RESIDENT**

ARE YOU READY? The internet in Southeast Alaska.

As I watch the rest of the world on my satellite TV system (I can't get much news about Alaska); I am bombarded with internet ads showing cute kids from third-world countries asking, "Are You Ready?". My answer is "**YES, I'M READY!**".

From here on it gets complicated and out of balance, so, I will lay out the pieces of the puzzle, then, try to put them together. The following are issues and positions as I have found them.

1. Southeast Alaska is filled with small and often remote communities.
 2. Prior to the death of logging (thank you, Washington, DC) we enjoyed growth and prosperity.
 3. Internet access is available to only the larger of our communities.
 4. Phone service quality is proportional to the economy of the community. And it is QUALITY that dictates your ability to access the data stream.
 5. Equal Access is a term that relates to the phone service providers NOT to telephone users.
 6. The cost of long distance service (\$.74 to \$1.40 per minute) precludes the use of internet by the majority of schools and nearly all home schoolers. Note: The majority of students are in the larger communities.
 7. The new GCI satellite, according to the *EMPIRE*, was launched with the ability to service ALL OF ALASKA. What they neglected to say in the announcement was that it would cost the school at Thorne Bay \$800.00 per month for access. Oh yes, and this was after an 85% discount they established due to the severely depressed income levels in their post-logging period.
 8. Southeast Alaska is deemed less desirable, less viable and a greater investment risk for local, long distance and international communications companies than Zaire, Uganda, Pakistan or Bangladesh.
- So what is my point? What does this mean to a lot of us in Southeast Alaska?
- It means, that as our economy continues to falter and our revenues shrink we are destined to be the NEW APPALACHIA. Our children, our business and our opportunities are doomed to fall behind even the poorest of the worlds inner-cities and remote locations.

Ed Neumann
Hollis area resident



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Sincerely

A handwritten signature in black ink, appearing to read 'L. Quinn'.

Lewis Quinn

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VARIOUS ARTICLES

Telecommunications 2000 in Alaska

AND BEYOND

BY TOM BRADY

Clark James Meshier

Most of us think of telecommunications in terms of the end product and the most common product we think of is the telephone. Normally we don't even consider television or the Internet in the same sentence. Even so, telecommunications is not just about telephones, television or the Internet. It's about bandwidth (bits of data) and how to get more of it. Whether you log onto your computer or watch TV, the core business of telecommunications is delivering bandwidth to consumers.

In Alaska, any discussion of telecommunications must look at urban and rural parts of the state as being distinctly separate markets and technological areas. More importantly, when you get to rural Alaska you encounter a regulatory structure for distribution and sale of telecommunications services.

Types of Bandwidth

Broadcast Bandwidth: Most people associate this with television but as television has moved into the digital world, lead by satellite television providers, this also has come to mean broadcast data. This type of bandwidth provides one-way service only, so it is not suitable for telephone. Coaxial cable or some type of wireless system is normally the source of broadcast bandwidth.

Two-way symmetrical: The best example of this is the plain old telephone. Most telecommunications are developed in the two-way symmetrical model, that is the bandwidth in both directions is equal.

Two-way asymmetrical: The Internet is driving this form of bandwidth because at the consumer end a 10-kilobit request for a Web page can result in a megabit of multimedia content. It's

called asymmetrical because the bandwidth from the consumer to the network (Internet) is typically much less than the bandwidth from the network to the consumer. For example, some forms of digital subscriber line services offer 768 kilobits-per-second to the network (upstream) and up to 6 megabits from the network (downstream). Cable modem service is asymmetrical also.

Providing Bandwidth to the Consumer

Telephone Cable: This is where it all started and it hasn't fundamentally changed since Alexander Graham Bell. Most consumers are getting their two-way bandwidth this way. In capacity terms, the telephone line in your home today can download at 56 kilobits per second. Digital Subscriber Line service is the newest technology using copper telephone cable. A DSL line can download up to 6 megabits per second—or in other words, can pack a little over 100 pounds of sugar in today's one pound bag.

Coaxial Cable: This is how cable television is typically delivered to the home. Normally associated with broadcast bandwidth, cable systems can be upgraded to support two-way bandwidth. Today's cable modem service is the most common example of two-way bandwidth over cable.

Fiber Optic: Fiber is the workhorse of wide-band telecommunications. It is fiber that normally feeds the telephone cable, coaxial cable and wireless networks. Many large business consumers have direct access to fiber, but even then the final delivery to the individual is normally over a telephone-type or coaxial cable.

Wireless: Most people think of this as cell phones but it is really a lot more. There are two distinct forms of wireless bandwidth. The first is terrestrial radio systems that provide telephone, Internet and television services from transmitters in the local area. The second is satellite systems that cover large areas. Satellite systems are the workhorses of the television industry and have a special niche in providing communication networks for large national retailers such as Wal-Mart, Chevron and Safeway.

Urban Bandwidth 2000 and Beyond

Broadcast Bandwidth: Look for a significant increase in broadcast bandwidth and more programming or channels as companies become more efficient in using the bandwidth. Today most broadcast bandwidth is used to bring analog television signals to the home.

As GCI Cable and Alaska Choice Television convert from analog to digital service, there will be a several-fold increase in the number of available channels, and the introduction of television enhanced by broadcast Internet content. With two-way Internet services available over these same networks, entertainment should be a rapidly evolving experience.

With local broadcasters putting in digital television transmitters, plan on an increase in the number of off-the-air channels (channels you can pick up free with cable or rabbit ears), but also plan on some type of pay broadcast television service to offer more than the basic fare. The largest increase in raw bandwidth and content will probably come from satellite providers.

Direct Broadcast Satellite Services have always been digital, and as newer generation satellites come into service allowing smaller receive antennas, even urban users will have an expanded choice of television providers. As more providers are capable of serving the market the price will probably not decline, but future price increases by cable operators will be held in check by competition from other providers.

Two-Way Bandwidth: Most consumers don't really care whether they get service over asymmetrical or symmetrical bandwidth. The main issue is price. Consequently, most of the new bandwidth coming into service over the next five years is likely to be asymmetrical.

The prime driver in this is the basic asymmetry of the Internet from the user's perspective. Unless you are hosting a large Web site and have a large telecommuting work force, the economy of digital subscriber line services and possibly cable modems in providing both voice and Internet service will drive both business and residential sectors to look at a DSL or cable modem alternatives.



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Since DSL can use the same wire for both telephone and Internet service, a logical price point for entry-level DSL service would be two home telephone lines plus Internet service (about \$49 per month). GCI's first DSL-like offering is considerably more than that, but when ATU (ACS) enters the DSL market, this price should change substantially.

DSL does have a significant limitation. If your home or business is located more than 18,000 cable feet (not as the crow flies) from a telephone central office, then DSL may not be an option. Technology may push this limit outward, but not in the near future.

Terrestrial wireless services operating in frequencies ranging from 2 to 32 gigahertz frequency bands could also have a significant effect on the prices for bandwidth. Currently the only publicly available wireless Internet service is provided by Spectrum Wireless in the unlicensed ISM (Industrial, Scientific and Medical) frequency band. This is not likely to be the only wireless, high-speed data alternative over the next five years.

We should anticipate the frequencies employed by Choice Television and WantTV will eventually be used for services other than television. In addition, there are other licensed wireless services just now emerging. These wireless services will be especially valuable for consumers too far away from telephone central offices to use DSL, and those not on an existing cable system. Traditional cellular services will roll out new data services to complement their existing voice offerings, but the speed will be limited compared to other services. Maybe we will even get integrated messaging where e-mail and voice mail go to the same point (hopefully with better junk mail filters).

Intrastate and interstate two-way bandwidth for private networks should see a significant price decline over the next five years as competition between Alaska FiberStar, KANAS and GCI heats up. However, this bandwidth will still cost between three to four times as much as its Lower 48 counterpart for interstate service. While intrastate bandwidth will on the surface be less expensive due to competition, the price of a telephone call in state may not decline much due mainly to the regulatory structure.

While I can call Queen of England for 10 cents a minute, it still costs me at least 14 cents a minute to call the governor. Until the regulatory structure changes its ways, this disparity will remain. The major future issue is the pricing model for bandwidth. Today, the regulatory structure not withstanding, the cost of telecommunications is distance sensitive. Generally speaking, the further the distance the higher the price. The Internet is chipping away at this model and replacing it with another. The new model is speed of access and quality of service.

Rural Bandwidth 2000 and Beyond

While fiber optic bandwidth is the main source for two-way bandwidth distributed in urban areas, most of rural Alaska has only one source and that is satellite. Unfortunately, satellite bandwidth is the most expensive two-way bandwidth you can buy and good satellite bandwidth in rural Alaska is hard to find.

Cable systems will probably be the first to distribute high bandwidth two-way services since they are the most capable systems in place. After that, DSL and wireless alternatives will probably be the next to develop.

None of these can progress unless there is a source of broadband services to feed the local distribution system. At today's prices of \$1,500 for 64 kilobits provided to schools and libraries, broadband service may mean 128 kilobits for many smaller villages. The \$1,500 price is extremely low given the price structure of the satellite industry in general and the probability of this price changing significantly is not very great.

The most likely development in rural bandwidth is augmenting the basic 64-kilobit service with some form of asymmetrical Internet service. This could substantially improve the quality of rural Internet service while keeping it affordable.

All is not bleak or expensive in rural Alaska. Broadcast bandwidth from multiple satellites has dramatically changed the world of television in rural homes. While initial adopters spent \$1,000 or more for their systems, the next generation of Direct Broadcast Satellites, coupled with the satellite providers' incentive programs, should bring the

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initial investment price to under \$500 for 200 or more channels of video. The downside of this DBS product is the pressure it will place on rural cable systems to add channels or lose subscribers and it doesn't have Alaska content. However, rural cable systems have the opportunity for new revenue from Internet services.

The final unknown in rural Alaska is the regulatory structure at both the state and federal level. In the near-term, this structure will probably limit the entry of new players trying to provide conventional voice services through new technology such as the Internet because it is geared to subsidize switched telephone networks. In the largely unregulated world, this type of switched network design is being replaced by packet-based (Internet type) networks. In addition, the same regulatory structure will limit Internet deployment in the small villages to schools because service to schools is subsidized and service to the village is not.

Unless the regulatory structure and the businesses it supports evolve, in five to seven years they could be rendered largely obsolete by deployment of Ka

band satellite systems such as Teledesic and Spaceway. This will give individual users a competitive alternative the regulators are unable to control. In addition, these systems offer the greatest promise of putting urban and rural Alaska on somewhat equal footing for access to bandwidth.

Conclusion

Bandwidth in Alaska for the next five years is going to be a function of where you live. In Anchorage I can listen to Internet radio stations from around the world but I can't tune in Ketchikan because the speed and quality of their connection to the Internet isn't good enough. Providing affordable, high-speed access to the Internet in rural Alaska will be one of the dominant issues in Alaska telecommunications over the next few years and will become a major topic in the rural versus urban debate. The impact on the state can be substantial both in terms of the cost of providing state services in rural Alaska and in developing rural economies in an age where what you have access to is more important than where you live. □



For the last six years, Tom Brady has worked in small business as general manager of AmRussCom and manager of Data Services for Microcom. Brady has assisted in developing a successful telecommunications business in Russia and in developing new satellite television and data alternatives for rural Alaska. In addition, he is the project manager for Microcom's technical support contract with the State of Alaska for the Satellite Interconnection Project. Having been an Alaska resident since 1975, Brady has seen the development of technology over time throughout Alaska and was a pioneer for cable television in state when he laid the groundwork for the first cable system at Eielson Air Force Base in 1976.

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Alaska online access among top in nation

The State of Alaska has been ranked second in the nation for facilitating electronic commerce according to the Center for Digital Government. The ranking will appear in the January edition of Government Technology magazine.

Gov. Tony Knowles made increasing the state's Internet presence one of the goals of his administration shortly after taking office, noting that Alaska has one of the highest per capita rates of Internet usage and number of personal computers in homes in the nation. Now, the State of Alaska web page www.state.ak.us receives over 200,000 hits per month.

The one-stop shopping center for state online transactions is the "Alaska Webmart." There Alaskans can obtain a business license, register a car, or order a personalized license plates. Alaskans can also get a hunting or fishing license through the Department of Fish and Game's online license site.

State hiring is conducted through the nationally recognized program Workplace Alaska. State recreational cabin availability can be checked online, and university students and state employees can take online technical training courses. "Online Public Notices" allow Alaskans access to all public notices, agency meeting schedules, competitive bids, and a host of other legal notices.

All State of Alaska forms can be downloaded on the Web including applications for Alaska's annual Permanent Fund Dividend. Many state application processes are now available as an online service.

Lt. Gov. Fran Ulmer said occupational business licenses and Alaska Marine Highway System reservations will become available online this year.

Subject: ADN and Empire Feb 19
Date: Sat, 19 Feb 2000 13:15:10 -0900
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Organization: Alaska State Legislature
To: Contains all House Majority Staff <lhscgjr+housemajoritystaff@legis.state.ak.us>
House Majority Members <lhscgjr+housemajoritymembers@legis.state.ak.us>



Web posted **Friday, February 18, 2000**

Financier: Alaska could be at turning point for investment

Founder of country's biggest venture capital group visits Juneau

By **BILL McALLISTER**
THE JUNEAU EMPIRE

Alaska has the talent, though perhaps not yet the mind-set, to create a vibrant high-technology sector through "angel" investments in homegrown business start-ups, says Dr. George Kozmetsky, founder of the nation's largest venture capital organization.

Kozmetsky, 82, a multi-millionaire entrepreneur, investor, academic and author, brought his message of "civic and social entrepreneurship" to Juneau this week. He's a board member of the Alaska Science and Technology Foundation and mentor to Alaska InvestNet, the Juneau Economic Development Council program inspired by The Capital Network, Kozmetsky's nonprofit group in Austin, Texas.

In an interview this morning, Kozmetsky said the next three years could mark the dawn of a new era in which Alaska's wealth is more heavily invested in local, high-tech start-ups. Wealthy Alaskans, who have made timely profits in real estate, retail or natural resources enterprises, must learn the economic and social value of long-term investment within a community, he said.

"I think we're at a critical turning point," said Kozmetsky, a Texas and California resident who nonetheless often uses "we," "us" and "our" in speaking of Alaska.

``People have to be ready. We're getting there. People are beginning to buy in. . . . And yes, I'm very confident and optimistic."

Kozmetsky is a co-founder of electronics giant Teledyne Inc., holds several positions in the University of Texas system, has been involved in more than 100 business start-ups in service, manufacturing and technology, and has written or edited a dozen books on business and the economy. His personal wealth exceeds \$100 million.

Kozmetsky was appointed to the Alaska Science and Technology Foundation board 11 years ago by former Gov. Steve Cowper and has since adopted the state.

The Capital Network, which makes blind matches of investors and entrepreneurs, has attracted \$500 million from venture capitalists looking for opportunities.

Its success inspired the creation of InvestNet through an ASTF grant 18 months ago, and Kozmetsky met in Juneau on Wednesday with potential investors.

Like The Capital Network, InvestNet doesn't actually broker deals but matches ``angel" investors with projects that are typically midway between research-and-development and traditional financing.

Allan Johnston of Anchorage, an InvestNet board member, said Kozmetsky sets a standard for Alaska CEOs.

``He doesn't play golf," Johnston said.

Deborah Marshall, who administers InvestNet for JEDC, introduced Kozmetsky to half a dozen potential investors at a reception in her home Wednesday evening.

``I think he's very inspiring," Marshall said. ``He gets up early and works all day. He doesn't need to be doing this."

On Thursday, Kozmetsky met with legislators and Gov. Tony Knowles, and participated in the ASTF board meeting, which continued into today.

Although reticent about what advice he might have given in the closed sessions, Kozmetsky emphasized encouraging trends in Alaska.

The use of computers in schools is among the highest in the nation, the state is well-wired into the Internet, Alaskans who have left the state are returning and the ``middle-aged leadership" in the business community is committed to the state, he said.

``Now the question is, how do we take knowledge and create value? .
.. We've got most everything going, except we need more knowhow."

The challenge is not to develop technology, but to make use of cutting-edge innovations as they occur, Kozmetsky said.

And while he wouldn't call it philanthropy, Kozmetsky said ``a sharing and caring society" would be the end result of the investment attitude he's encouraging. ``Those are women qualities men have to learn."

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E-economics Problem

With Congress' Internet tax commission deadlocked, governors and mayors are desperately seeking solutions to their e-commerce sales-tax dilemma.

BY CHRISTOPHER SWOPE

As Michigan taxpayers sit down to fill out their tax forms this year, many are in for an unwelcome surprise. When they get to Line 30, they will see something they've never seen before: a space in which to tally their Internet taxes.

By now, a lot of folks in Michigan, as elsewhere around the country, have come to conclude that buying stuff online is tax-free. And with good reason. Most Internet retailers don't bother to collect sales taxes, except in a very few states where they have to. That was OK for a while. In the early days of electronic commerce, the tax revenues that Michigan lost to Internet retail amounted to a pittance.

Not anymore. State revenue experts estimate that Michigan is losing \$21 million a year in tax-free Internet sales—and growing fast.

On Line 30, Michigan is asking taxpayers to add up all of the tax-free purchases they made last year, both on the Internet and through mail order catalogs. Then multiply by 6 percent. For the most avid of online shoppers, this could come to hundreds, if not thousands, of dollars. It is likely, however, that most taxpayers will just skip Line 30. After all, there's no way that Michigan can track what they bought.

The 6 percent tax that Michigan is asking residents to pay is not actually sales tax. It is something called "use tax," which for decades residents have ostensibly owed when they buy things from out of state. But like the 44 other states that have use taxes

in place, Michigan has never before made much effort to collect it. "We've never had broad compliance from consumers," says Michigan Treasurer Mark Murray.

The point of Line 30 is not, however, to raise cash. It is to prepare taxpayers for a permanent response to the Internet tax problem. Michigan is gearing up to test new technology that would automatically collect sales and use taxes on Internet purchases. And that pilot, which could begin as early as this year in several other states as well, is itself a prelude to much bigger plans to come.

The "Big Seven" associations representing state and local officials, led by the National Governors' Association, are sketching out a sweeping strategy to completely overhaul the way in which state

and local governments collect sales and use taxes. The explosion in tax-free e-commerce sales, they say, is putting traditional retailers who do collect sales taxes—on America's Main Streets and in its shopping malls—at a competitive disadvantage. It also threatens the budgets of 45 states and hundreds of cities, which count on sales and use taxes to pay for the essential government services. "Ten years from now, the typical person will be all wired," Dallas Mayor Ron Kirk says, launching into a popular joke. "He'll have his high-speed Internet link, buying everything online. His life will be dependent on computers and the Internet. Then one day, in all that electronic equipment, he'll have a short, and it will start a fire in his house. And when he calls 911, we'll fax him a picture of a fire truck."

The irony, however, is that if technology, through the Internet, is bringing state and local budgeteers' concerns to a crisis point, then it is technology that also may bail them out. State and local officials want Internet retailers to use software that would automatically calculate and charge sales and use taxes. The system would be run by a third party—meaning that collection of sales and use taxes would essentially be privatized. To make the system work, states would proba-



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bly have to simplify the myriad complexities of their sales-tax codes. In essence, they would be creating a national sales tax, implemented on a state-by-state basis.

This idea is one of several to come out of a commission that Congress appointed in 1998 to study Internet taxes. With one meeting remaining, the Advisory Commission on Electronic Commerce is deadlocked. One faction on the commission, led by Utah Governor Michael Leavitt, generally supports the privatized software solution. On the other side is a group, led by Virginia Governor James Gilmore, that proposes making all online purchases tax-free for consumers. Gilmore disagrees with the notion that making the Internet tax-free would put traditional retailers at a disadvantage. "I just don't start from the assumption that everything in America ought to be taxed," he says. "And therefore, to not tax it is somehow implying some type of privilege."

In Congress, there is a lot of support for Gilmore's position—especially from anti-tax conservatives. But other members of Congress are pushing a national sales tax in which the federal government would pass the revenues back to the states and cities.

The good news for state and local officials, many of whom aren't happy with



either approach, is that Congress is likely to be as stalemated as the commission. That means many eyes will be watching the circle gathering around Governor Leavitt. Leavitt insists that the states can put their privatized tax regime in place without Congress' blessing. The approach has the support of at least half of the nation's governors, including high-profile Republicans such as John Engler from Michigan and Wisconsin's Tommy Thompson. This year, perhaps a dozen legislatures will consider proposals to have their states' top revenue officials meet to start pounding out details.

They are in for a monumental undertaking. The effort will require an unprecedented amount of interstate cooperation to keep all the states and cities moving in one direction—while fending off Congress in the meantime.

There is fair reason to doubt that the governors can pull off their gambit. Overhauling all the states' tax codes on a state-by-state basis is bound to be a political mess. Along the way, they will have to do battle with the myth of the tax-free Internet, which is already ingrained in many people's minds. Although the governors

are only proposing to collect use taxes already on the books, people will inevitably interpret the move as a tax increase. Then there is the question of whether this is something the governors should be pursuing. A privatized tax-collection system is enough to make even the most committed privatization advocates nervous. And anything the states try to do on this would likely be challenged in the courts. Critics make a strong argument that the states are wading too far into matters of interstate commerce. "Somebody has to lay down the law here," says Robert Strauss, an economist at Carnegie Mellon University. "And that's Congress."

If this debate has a familiar ring, it is because it is essentially a replay of the feud that states have had for decades with mail-order companies. In both Congress and the courts, state and local governments have fought to make catalog retailers collect taxes for them. And for the most part, they've lost. "This is an old wound aggravated," says David Hardesty, author of the book *Electronic Commerce: Taxation and Planning*. "They used the debate surrounding e-commerce to reopen this argument."

The main obstacle is a 1992 Supreme Court decision on taxing mail-order sales, known as *Quill Corp. v. North Dakota*. The *Quill* decision said that states cannot force



Dallas Mayor Ron Kirk likes to use humor to illustrate his view of the problems untaxed Internet sales would create.

DON MASON/STOCK MARKET

Governing.com

catalog companies to collect taxes for them—unless the retailer has a physical presence, or “nexus” in that state. In other words, L.L. Bean, the Maine catalog company with stores in no-sales-tax states, must only collect sales taxes from its customers in Maine. It would be an “undue burden,” the court said, for L.L. Bean or any other seller to have to keep tabs on the sales-tax rates in each state and every city, as well as all the numerous exemptions and special rules those jurisdictions impose.

In the wake of *Quill* and a similar earlier ruling, state and local governments feared that they would lose a lot of revenue. They went to Congress and proposed a bargain: If Congress would make catalog companies collect taxes for them, they would simplify their tax codes to make collection easier. But nothing ever came of it.

So the states and cities learned to live with *Quill*. Instead of asking sellers to collect taxes, they tried to collect the tax themselves. It wasn't hard on business-to-business purchases, because businesses are audited regularly. But collecting taxes from household consumers was a nightmare. By the mid-1990s, state and local governments were losing as much as \$1 billion a year in revenue on tax-free mail-order sales.

Comparatively, electronic commerce is still small, but it is growing exponentially. According to Forrester Research, Internet sales topped \$18 billion in 1999, and could reach \$108 billion by 2003. Multiply those numbers by, say, a 6 percent sales tax, and the budgetary threat of e-commerce dwarfs the damage that mail order did.

Taxware, a small computer software company, is sitting in the right place at the right time. Since 1980, the company has been developing computer systems that help businesses comply with state sales- and use-tax laws. At Taxware's Salem, Massachusetts, headquarters, a brigade of more than three dozen employees is dedicated to an unconscionably complex task: keeping track of how 7,600 different state and local jurisdictions tax some 1,500 different products.

The state and local strategy for taxing electronic commerce relies heavily on the research and technology produced by companies such as Taxware. A software solution would do more than create technological wizardry. It would help the states circumvent the *Quill* decision. After all, the court had said it would be too burdensome for remote sellers to keep track of all the

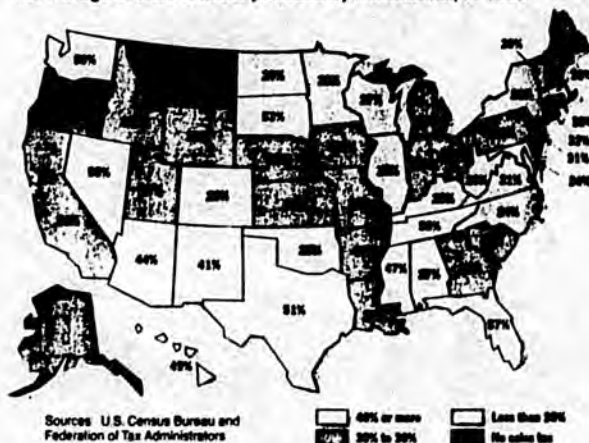
different state and local tax rates—but technology could ease that burden for them.

The governors propose making banks or credit-card companies responsible for collecting sales taxes. These so-called “trusted third parties” would embed tax-collection software into the Web sites of e-commerce vendors. When a customer buys a product online, the third party would automati-

Beyond the privacy factor, local sales-tax rates sometimes vary from one neighborhood to neighborhood. In these cases, pegging exactly which tax district a shopper and her computer are in would be a easy task. Spelling errors and other glitches could easily muck things up. A computer can do a lot of things, but it can't figure out what it is that you really meant to spell,” says David Sjostrom, a

Tax Dependency

Percentage of state revenue provided by the sales tax, FY 1998



ically calculate and charge the proper sales or use tax and then pass the revenue back to the right state or city.

State and local governments would pay for the system through a small fee on each transaction. A profit margin built into that fee would aim to attract private-sector partners.

Should governments be turning over one of their most basic functions—tax collection—to small private shops? Even the conservative Heritage Foundation, which has advocated privatization of everything from adoption services to airports, thinks the NGA plan goes too far. “How trustworthy are the trusted third parties?” asks Adam Thierer, a Heritage scholar who testified before the e-commerce commission. Thierer’s main concern is maintaining taxpayer privacy in a system where private parties know what people are buying, where they live, and what their credit-card number is.

expert on state and local taxation at Georgia State University.

A bigger problem is that no two states share the same tax base, with different states exempting different products from the sales tax. Unique rules abound. For example, in Massachusetts, the first \$11 of an article of clothing is tax exempt. In Connecticut, only the first \$50 is tax exempt. In New Jersey, clothing is completely tax-exempt. Then there is the question of what constitutes clothing. “The real problem is the varying definitions,” says Tennessee state Representative Matt Kider. “It’s difficult without software that understands whether a shirt is for decorative purposes and is taxable if it’s clothing intended for warmth and tax-free.”

A diligently programmed software package could handle this. But state and local officials are coming to understand that they need to simplify and harmonize the

sales taxes. This year, revenue officials from a dozen or so states are expected to come together to start working out a plan to do just that. “If the system remains as complex and burdensome as it is today, the software will cost a whole hell of a lot of money,” says Frank Shafroth, chief architect of the plan at NGA. “The greater the simplicity, the cheaper it will be.”

As the simplification debate moves off of dry-erase boards and into state legislatures, it is likely to open a political Pandora’s box. Local governments, for one, are skeptical of simplification. Some ideas on the table, for instance, call for one tax rate per state. That would effectively lock cities and counties out of using sales taxes in the future. Given how much local governments rely on sales taxes to fund roads and arenas and to pay off bonds, they will be a powerful force in the debate.

Other special interests could get involved, just as they have whenever sales-tax issues have come up. For example, Georgia’s sales tax exempts the bulk used by its lucrative shipping industry. The simplification debate could end up as lobbyists’ free-for-all as lawmakers unpeel the shipping exemption and hundreds of others like it.

Some critics fear that, given the complex politics involved, legislatures won’t confront the political challenge but will lean on the software solution as a golden crutch. “The NGA proposal leaves a lot of the complexity in place,” says Charles McLure, a tax expert at Stanford University’s Hoover Institution and a longtime simplification advocate. “It says we’ll transfer the costs of that complexity to the trusted third party.”

Illinois state Senator Steven Rauschenberger is more optimistic. “The biggest motivating factor for states is that they’ll recognize soon that if they don’t act to modernize their tax codes and make the system work, they may not have much of a system left to be concerned about.”

There is another way that the NGA plan tries to circumvent the *Quill* decision. The court said that states could not require remote sellers to collect sales or use taxes. But the NGA plan does not demand that merchants play in this elaborate system of trusted third parties. Participation is voluntary.

The big question is: Why in the world would any Internet retailer sign up if they don’t have to? “The problem with a voluntary system is that there is a reward for holding out,” says Richard Prem, the head of e-business services at Deloitte & Touche. “By joining, businesses would be giving up sales.”

The least likely to join would be the pure e-commerce sellers. Take ValueAmerica.com, a company that sells merchandise only over the Internet. Under the current rules, ValueAmerica has nexus only in Virginia, where its headquarters are located. For ValueAmerica to join the third-party system, it would be giving up a big competitive advantage over bricks-and-mortar retailers: tax-free shopping in 49 states.

There are some retailers, however, who would be likely participants, according to Leavitt. The most promising are big national chain stores. By now, nearly every major chain retailer, from big-box stores

‘I just don’t start from the assumption that everything in America ought to be taxed.’

—Virginia Governor James Gilmore



such as Staples to mail fixtures such as Crate & Barrel, has a virtual store online. But be-

cause they have physical stores—and thus nexus—in so many states, they already have to collect taxes for almost every state. Having a third party collect taxes for them would actually relieve a major hassle for these “bricks and clicks” retailers.

But there is a loophole in that logic, one that big chain stores are tearing through like running backs. Look at Wal-Mart. With 2,500 stores in all 50 states, Wal-Mart would be a natural fit for the NGA plan. But in January, Wal-Mart followed the example of its competitor K-mart and others: It created a separate company for its Internet business. Despite close ties to the mother company, the upstart Wal-mart.com bears more resemblance to ValueAmerica. It has nexus only in California, where its headquarters are, and Arkansas and Utah.

Aware of this problem, the states are planning a number of carrots to try to persuade even sellers such as Amazon.com or Walmart.com to participate. For example, the third parties might offer financial bonuses to retailers who play. In addition, participants would receive a sort of tax amnesty. And there might also be a bureaucratic advantage to joining: Sellers would have to answer to only one state audit, rather than 45 audits by the states that assess sales and use taxes.

There is also one big stick: the courts. The states could do some legal ganging up on Amazon and Wal-Mart in the same way that they went after tobacco companies. They might have a case. Does Amazon create additional nexus for itself when it posts its link on another vendor’s Web site? Perhaps not. But these types of questions are as yet largely unsettled, and it might be more expensive for dot-com companies to litigate than to go with the program.

Critics argue that the governors’ proposed tactics are too strong-armed. “How voluntary is a system when it offers financial incentives as carrots to get sellers to join?” asks Adam Thierer. “The whole system hinges on two things: Will the trusted-third-party idea mechanically work? And is it really voluntary? If the answer to either of those questions is no, then the NGA plan falls apart.”

Besides, the states may have trouble getting merchants to play, despite the incentives. The governors’ plan amounts to “fiscal hunting in the dark,” says Carnegie Mellon’s Robert Strauss. “There has to be federal legislation here,” he adds. “There need to be some rules of the game for states to collect use taxes.”

Then, again, the system might half work: Some retailers would play, while some wouldn’t. But if the result is replacing the current inconsistent patchwork of taxes with another, it wouldn’t much satisfy anyone. “If we go down the road of a voluntary system, and we’re only partially successful, we will have lost lots of time which we can’t replace,” says Wade Anderson, who used to be the top tax collector in Texas. “It will make it that much harder to go back and change this later. But I wish them luck.”

Legislatures Will Wrestle with a Model Law for IT Transactions

TECHNOLOGY IS THE fastest-growing area of the economy, but the contract law to address computer-related transactions has been a non-starter. A handful of states are trying to remedy that by introducing legislation based on a uniform code that tackles the rules for computer information transactions.

There is existing contract law that covers the sale and lease of goods, but it doesn't quite apply to software and electronic licensing agreements. "Computer information is a unique commodity," says John McCabe, legislative director of the National Conference of Commissioners on Uniform State Laws. "No law gives us comfort about what the contract rules are."

To remedy that, the conference last summer approved its prototype for the Uniform Computer Information Transactions Act. It defines rules for contracts between computer users and the companies that make software or transmit information electronically. The proposed law addresses how binding licensing agreements are, at what point they take effect and what remedies are available if they are breached.

For instance, under existing notions for

shrink-wrapped software packages, if consumers break the wrapping, they're bound by the licensing agreement they haven't read yet because it's inside. Under the uniform state law, consumers would not be bound until they have the opportunity to read the contract.

The complex law, which is being intro-

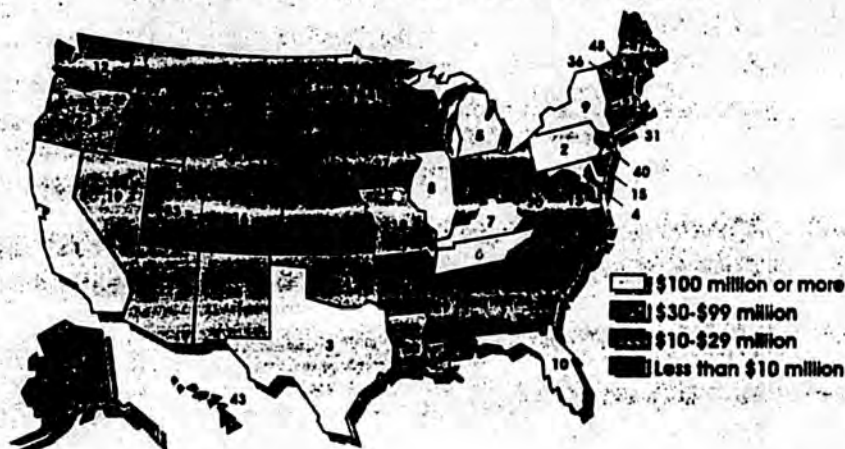
duced in several states, including Illinois and Virginia, has already stirred controversy. About half of the nation's attorneys general, as well as many consumer groups, oppose it. The concern is that the law would preempt a wide range of existing consumer-law disclosure standards and enable unscrupulous sellers to hide information.

A full copy of a letter to the conference voicing the attorneys general's concerns can be found at www.2bguide.com.

—Ellen Perlman

Putting Money Into High Tech

States ranked by total IT contract value, 1999



Source: FSI Inc.

Safety Survey

Anchorage Opts for In-Cab Cameras

AFTER A RASH of violent crimes against on-duty cabdrivers, Anchorage, Alaska's city council mandated a technological fix. The city's three cab companies had to install by December 1999 one of three safety features: surveillance cameras, a global-positioning system or bulletproof shields between drivers and passengers.

Low-tech bulletproof shields got no takers. All three companies deemed them too expensive. But two of the companies chose surveillance cameras that are about the size of a cigarette pack and are mounted behind the cab's rearview mirror. When passengers enter the car, the digital camera automatically snaps a picture of

them and saves the image on a computer disk. If a crime is committed, dispatchers can retrieve the stored image and give it to the police. One of the companies, with taxis in Houston and San Antonio as well, plans to install the cameras in its cabs in those cities, too.

The company that opted for the ability to use a satellite to track cab movements did so not just for safety reasons. The owner of the cab company said he chose the more expensive system because drivers are able to read for themselves where their calls are. With GPS, they no longer have to rely on dispatchers, who can be difficult to understand.

—Vanita Gowda





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*Scath-
FYI*

Wednesday, March 1, 2000

Time for Knowles to close Bush's digital gap

Compass

By GEORGE OWLETUCK

Gov. Tony Knowles must immediately address the "digital divide" threatening the economy of rural Alaska. The digital divide - the divide between those with access to information technologies and those without - is now one of America's leading economic issues. Information tools, such as the personal computer and the Internet, are increasingly critical to economic success. More Americans than ever have access to computers and the Internet. However, there is still a significant "digital divide" separating American information "haves" and "have nots."

According to a recent report by the National Telecommunications and Information Administration, the number of Americans connected to the nation's information infrastructure is soaring. However, the report finds that a digital divide still exists, and is actually widening over time. Minorities, low-income persons, the less educated, and rural residents lack access to information resources. American Indians, Eskimos and Aleuts rank far below the national average in their access to computers and the Internet. Rural Native American households are particularly lagging in connectivity.

Rural Native American households' access to computers (26.8 percent) is lower than the national average (42.1 percent). Overall, Native Americans are also behind in their access to the Internet (18.9 percent), compared to the national average (26.2 percent). Native Americans are unable to access the information resources via computers and the Internet that are essential for success. Traditionally, our notion of being connected to the nation's communications networks has meant having a telephone. Today, to be connected means to have access to computers and the Internet. In today's digital economy they are necessary for success. The dramatic growth of electronic commerce and the development of information technology industries are changing the way Americans work, communicate, purchase goods and obtain information. Jobs in the new economy now require information technology technical skills.

Communities have achieved high levels of telephone connectivity through the implementation of key initiatives. Pro-competition

policies at the state and national levels have resulted in lower prices for consumers of telephone services. Universal service policies have helped assure that most Americans can enjoy affordable access today. Assistance for low-income households and support for high-cost regions of the country (i.e., the Federal Communication Commission's Universal Service Fund) are examples. The U.S. Department of Agriculture's Rural Utilities Service provides targeted technical advice to ensure that advanced telecommunications infrastructure is in place for rural communities.

Policymakers should explore ways to continue to improve telephone services, particularly in rural Alaska, and to expand computer and Internet connectivity. For rural residents, it is an economic solution. Lower prices, leasing arrangements, and even free computer deals will bridge the digital gap for them. For high cost communities like those in rural Alaska, and low-income individuals, universal service policies will remain of critical importance. We need to redouble our outreach efforts, especially directed at the information disadvantaged.

Americans are embracing computers and the Internet, but there are many who do not realize information technology is relevant to their lives. We need to reach out to these communities and let them know why they should care - how new technologies can open new opportunities for them and their children.

We also need to find out why people are or are not connected. While such outreach works best at the local level, this information should be shared with local, state, tribal and federal government policymakers. Only when we have a good understanding about why different communities do or do not have access to digital tools can we fashion appropriate policies.

As we enter the Information Age, access to information resources will be critical to finding a job, communication, taking courses or finding information. Determining who has access to these resources is a critical first step toward closing the digital divide. Gov. Tony Knowles must act immediately to ensure that the rural Alaska economy does not fall through the digital divide.

* George Owletuck, an original Calista shareholder from Marshall, is chairman of the Lower Yukon Economic Development Council

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ALBUQUERQUE, N.M. (AP) - The Bill and Melinda Gates Foundation has created a new program to provide Internet access to American Indian tribes in the Southwest.

The money from the billionaire Microsoft chairman and his wife will help fund the Native American Access to Technology Program, which will provide grants for equipment and educational assistance needed to help tribes bridge the digital divide.

The program plans to provide aid to tribes in New Mexico, Arizona, Colorado and Utah.

The Gates Foundation, with an endowment of about \$21.8 billion, is the world's richest. The foundation focuses its giving on health and education. □

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907-495-1333

TO: Legislatures, Senators & Governor of Alsaka

RE: Creating steady jobs in Alaska in the Internet Age

Dear People,

I have submitted to a Venture Capital Firm outside of Alaska, in fact outside of the U.S. for funding to take my company from the R&D stage to the world market via e-commerce. The reasons are now listed as to why I chose this route when so many State & Federal Government loan programs and grants are available.

1) There is no SBIC lender listed as working with the State of Alaska. As Congress set up this program in 1958, why is it that the government of Alaska hasyet to utilize it's services. Since all of you are probably unaware that they utilize both public and private monies to help companies get going, try looking it up under >www.SBA.gov<. Click on the SBIC button and follow to lenders under this program.

2) I called the State Department for Economic Developement to ask why Alaska doesn't try to co-ordinate these benifits. I was directed to a loan officer and I told him that I will be creating about 20 employment positions right off, with possibly up to 50 within a year, some of these being high tech (this is an internet e-commerce & information business). As creating jobs in this low employment area will likely lead to qualifying to both Federal & State loan programs & grants from both plus possible private grants, along with possible Science & Technology monies, he told me that no such State ageny was available to organize such.

I then asked this loan officer that I tried to get to the director or analist and could I talk to them. Instead of trying to transfer me, he asked how much I would need to launch this venture into a business with at least \$3 billion in sales according to a 1996 U.S. Census study. And the European and Asian markets for this industry! When I told him \$6-\$8 million, he sounded like he thought that this was tremendously high.

I tried to explain that I have many proprietary items for this industry, along with an idea for a subscriber web site that interested a Venture Capital firm to commence due diligence and market analysis from just an email form. Not even a full business plan! For thode of you unfamiliar with V.C. firms, why not go to >www.bplans.com< and follow links to these firms. You will see that even little Nebraska has set up a division to tap these finances to help create jobs! The list of other States goes to Massacusetts, Indiana and New Mexico at least. I got this list from a 1997 Jian Bizplan software handbook. I do beleave that many more States are doing the same.

Why am I right to all of you? To help get businesses to Alaska. I am currently laid off from Parker 245. If any of you are familar with this rig that was featured in the ADN several

years ago, it is the first drilling rig in history to make 2 million feet of hole! It was also Arco's favorite rig, and should be Alaska's, as West Sac would not have been possible without its technology. Where is BP's \$5 billion dollars. Why aren't rigs back to work? I was present at a BP sponsored school when the head of BP North America said that they have to drill NOW just to keep the oil flowing in 8 years. That was in Dec. 1997!

Parker Drilling shut its Alaska office, Doyon, Nabors Alaska and Nordic are all hurting financially. So are Haliburton, Schlumberger, ... Need I go on? I saw this happen in Louisiana in 1984 and the State raised the income tax, etc... How much revenue is lost from these corporate taxes? I and 3,500 others lost their jobs. If one looks at what McDonald's paid to start three years ago (\$6.00), and compare to the lower rate they start now (minimum wage), starting pay for carpenters, etc.. In the ADN classifieds, along with Alaska's job bank, you will see that Alaska workers are slipping into poverty right before your eyes.

My company was started in 1991 as a fly tying and material manufacturing company. I saw that I could not afford to tie flies, or have flies tied here or in the U.S. I can manufacture my tying materials and distribute them via the internet and effectively cover these labor costs. Added into this is an advertising campaign that is within the norm for industry! While the majority of the position I create will be basically service jobs, by the right buying and distributing discounts I have arranged for worldwide distribution, along with my discounted benefit program purchases, I will pay a higher wage. This will be what I know Alaskan should make for these positions. Get off your salaries and try to make a living at \$8-\$10 an hour!

3) The gentleman from Alaska Economic Development had no idea what is involved with my request for the type of venture I wish to start. First I need to explain that this consumer specific industry is not broken down in any statistics from spin fishing. If this was so, the imports of flies compared to those tied in the U.S. would easily qualify me for excessive import loan program from the Feds. Flies are lumped with lures. As I have lived in the Midwest, and my knowledge of the complete fishing Industry, most lures are manufactured domestically.

A recent article in a fly fishing magazine had an interview with one manufacturer/wholesale distributor. In this he said they import 17,000,000 flies annually that are tied overseas. As the foreign tying firm I have made a strategic alliance with is right next door and does some business with this same firm mentioned, he has told me they are tying 1,000 dozen a day! There is also a third firm in the area approaching this amount. Now flies and materials are a significant part of this industry.

In this industry, all of the gear is tied to the fly! Yet all of the other gear, tackle, books etc., is needed by a retailer to attract customers. Either in a brick & mortar or a click & mortar. I have spent a decade developing a complete new line of fly materials and fly patterns. It will be the largest selection of new flies ever offered at once! I also have several other ideas to implement to garner other significant aspects of this industry, beside a large collection of all of the above. Almost a decade has been spent assembling these items and proprietary ideas. These item lines have been assembled from around the world, to tap each area's specific buying needs. What sells on the East Coast, might not be what sells in California!

If a business plans to tap into a GLOBAL market of at least \$3 billion, possibly double this figure or more, is a starting budget of \$6 - \$8 million even enough? This is also a dollar increase of 36% from 1991 to 1996 with a slight decline in actual fishers! One has to consider that just a 1% share of these annual sales is at least \$30 million - \$60 million if the actual figure is double. So, with the right marketing and promotions, if one were shooting for just a 10% share,

this is atleast \$300 million annual sales. This would require a second round of financing, as expansion and inventory increases (of just the amount stocked of each item) would be overwhelming. For this, an IPO would almost likely be needed to raise this revenue.

Now, why am I writing all of you? Well, figure what could happen to Alaska if Alaskans have the access to venture funds. The Polaris Fund doesn't come close, also they want a proven track record, which most seed companies in this new Internet Field doesn't have. Once these track records are their, others usually can't compete in the same retail line. Also information sales can generate substantially. If the estimates are correct that brick & mortors will fade into history, what will happen to these jobs and corporate revenue for the State?

Now, if I can use half a dozen programs like welfare to workfare and others and still need additional financing, the State can do as others are doing supply venture funds. They take some equity at the low end of stocks and sell out at the IPO's to regain monies invested and profits. What would happened if the PFD division had invested in \$.13 stocks of E-BAY? I worked with on guy who made \$43,000.00 at the IPO. Two others on 245 wimped out of \$10,000.00 investments each. One week later the one who was ready to retire told me that he would have made over \$2 million on that investment! Think of what the State can make. The Feds already do this with the SBIC program!

But, since I have to go the private investment route, the V.C. firm gets this gain of their share of my company, if they take the risk. Now as they want to be assured of the success, they will help set up the management team also, so there is a little work involved. They also take an active roll, without taking control so the company can continue to develop it's ideas for future projects, for increased revenues. Right now, if I have to go through a V.C. firm that will invest much higher than any SBA program and higher than most SBIC firms (I've checked these, my own due diligence!). If I am successfull in securing these funds the State loses. I gain as even giving away a significant percentage, my annual sales will be much higher.

So, as the State sits on it's butt as we enter the 21st century, you get 9% corporate tax and that's it. I only have a G.E.D. and can figure that the more of these business Alaska can get going, the better off it will be. Revenues from forestry is down, never to return! Revenues from fisheries are down due to big business reaping the seas and the State of Alaska selling eggs overseas! If the State looks at British Columbia and Canada's East Coast Provincial Government Records you will see revenues generated from commercial fishing verses sports fishing! The world is going to farmed fish, and Alaska is partly at fault!

The South American and Japanese farmers were started by Alaska! Any high school graduate who reads the papers and reads magazine articles knows this! Alaska cut the throats of it's own fisherman and watches as they slowly bleed to death financially! As I have lived in Juneau and have friends who fish in Kodiak and Western Alaska, they tell me themselves. Alaska can farm the new highbred in such a program that B.C. and European countries do. It has to be able to compete, along with allowing more fish into the streams to garner the much higher revenues from sports fishers! Change the law! The new Federal quotas and farming of halibut will one day hit (close now) Alaskan long liners hard! Crabs can even be farmed. Just sitting there on your hands will devastate the lives (already is) and lively hoods of Alaskans!

Mining is down. Gold will never return as currency. It's primary use now is in electronics and jewelry. Coal can be produced, but as the automakers go to hydrogen and electricity (with small diesel generators) more hydrocarbons can be produced. One reason hydrogen isn't used for power, is the low hydrocarbon price. With advancements in the hydrogen technology from auto

makers it will be put to electricity production. It's source is simply water! If it can take the shuttle into space, it can burn in a turbine.

So, as the world's economy is changing so drastically that high oil prices NO LONGER cause a recession, where does this leave Alaska? Just maybe where I have read in the paper, becoming the West Virginia of the North West! Each and everyone of you has the duty to help Alaska get off to solid financial footings in the new economy! Want to discover how to do it? If my business plan doesn't get accepted by the V.C. firm that approached (this was just the fourth one of hundreds!) I will approach Science & Technologies with an offer to look into starting these internet companies. Here is the kicker. My company on paper has around \$100,000.00 in stock.

Yet, my proprietary ideas are what I am putting up. It is what V.C. firms are looking for in a seed company. Without these a million dollar company that wants to get into a line like say E-Bay will not get funding! Why? They don't have any new ideas to take the market shares from established companies. I have product lines that will revolutionize my trade. Also an idea utilizing these products to bring it into the 21st century.

How many other Alaskans might have such ideas in the areas of their expertise? Can Alaska lure other companies from say the Silicon Valley? Hell, yes!!! Look at California's income tax, sales tax and if that area has municipal taxes! Also a corporate tax! Couple this into a package of Alaska's outdoor opportunities. And don't even think of bringing them to Juneau, Anchorage or Fairbanks municipalities! These taxes will negate savings! Also the rent or building purchases! If the company has a global market (of course much of this can and is done over the internet for info companies), Alaska sits equidistant to the world's markets. If they have a significant annual sales, think of a relocation credit to their first years corporate tax. Doing this will also help alleviate oil company fears of higher taxes, as you bring in more!

So, here is the challenge to find a pilot company. I have such a company and I am willing to give equity. If my projections are right, with proper capital and needed added staff, a 10% share might give Alaska around \$21 million annually? Along with given these people up here work! What programs are you offering the citizens? The Slope? Tell that to all of the laid off workers. Of course we got retraining and moving allowances, so how many are left here? How many will go back? Look at the 1980's when many never returned! I also can provide work for Natives in Bush communities by tying furs with polar bear hair, which only they can do! They will start their own little factories (as any fly tier really is)! I can get a higher price per fly and I am quite willing to pay a higher price that they would get from current wholesalers!

Here I sit about ready to jump into an industry that Alaska's Economic Development can't even help me with! The gentleman I talked to said that I needed to talk to my legislatures to have a whole new State Division created to co-ordinate these loan programs! Give me a break! Is the State government with so many talented people so screwed up that they can't organize these programs? Or is it that the union workers don't want to deal with people unless they persist, persist, persist!

Want to outsize State work? Go before the Federal Labor Department as an employer and show them the figures on union worker average percentage! If I recall right, if the figure is less than 25 of all workers in the State, one can petition to have the State declared right to work! It is as easy as picking up the phone to initiate the process! I lived in Juneau four years. My ex-wife worked at post secondary and her department had to catch up other departments work! Why? They screwed off trying to contact deadbeat's with student loans. I heard this from coworkers

also! When the other department installed phone call tracking devices to record the number of calls made, some would call the number for time, weather etc. And they only had to make 20 calls a day! How many other State departments have slackers?

The State still rents most buildings after how many years of Statehood? With mainly oil revenues, which are falling, this is comparable to a librarian renting an apartment from her 24 birthday until she retires at 65. Now she realizes that her meager retirement and S.S. don't cover her expenses. What is she going to do? Thankfully McDonalds will let older people like this clean tables! What is Alaska going to do? Either buy or build building! Do you rent your home or own! Wake up and get off your butts!!!! Maybe someone should look into what investors are actually renting to State offices?

Regardless, if your children intend to stay in Alaska, or you do, you better buy the Arco building and others! Think of a one stop spot to access all offices. How much worker time and citizen time could be saved, never mind rent money. I worked on many building lodging Federal offices around Washington, D.C. that were in private buildings. How can people in government run their household expenses well and screw up government (their business) expenses! Ever think of creating a five year business plan!

Well, I have to get back to my business plan, as I know it is needed. I won't put this through spell check, as I doubt if any of you will even get to read this personally. I imagine that I will get many e-mail responses like the governor's auto-response, "The wise and powerful wizard is most knowledgeable on these matters and will forward this to the person most knowledgeable sub-wizard who is even more knowledgeable in these wizard like matters". Atleast that is my interpretation. Makes one feel that we are treated like Dorothy when she finally arrives at OZ! :)

You see, I have a sense of humor. I am not a disgruntled voter. I grew up outside of Washington, D.C. I went to Congress in grade school and saw the few congressmen who even bothered to show up sleeping or reading the Washington Post! I can show you the spot Wilber Mills and Fanny Fox were skinny dipping! I pay taxes, but refuse to vote, as we never get what we pay for. Right now the roads up our way don't get plowed until before school buses are expected! Moose are right along the Parks Highway as the State Roads never cut the shrub. Left them a dinner plate. Why? The State road foreman told me that D.O.T. cut their budget so the people would think Alaska needed our PFDs!

He also said they couldn't afford to send a man to put knocked down signs back up! If warning signs are so bad that they get knocked down because of crappy conditions, think maybe the sanding stations need to be closer? Right now a truck spends more time DRIVING back to Willow THAN sanding! Look at how far apart these are! Didi Johnroe's grandmother died because of this less than adequate planning! In a real State the D.O.T. subs out extra plowing. They can get a dump truck, plow and driver for the cost of a State driver's wage! Competitive bidding. So, will the State take better care of the roads before or after someone dies and sues the State? People are driving 50 miles to work in Wasilla, leaving here starting at 5 am. I drove 90 miles to work in Anchorage this fall because of no work on the Slope and none in Wasilla at the time!

So, if any one thinks of helping Alaskans for their vote, get them jobs. Real jobs that last 12 months, not \$6-8.00 jobs for 5-6 months! Look in the ads on Alaska Job Bank. The largest (now that BP QUIT WORKING) employer, fishing is paying minimum wages for fish processors! Go back one, two five and 10 years to see what they used to pay! And the season is shorter!!!!!! I applied to the State as a Fish & Feathers tech. Oh, I got offerings. All for 13

months during construction season. I am supposed to take a temporary job at less wages knowing I have to reapply for the wildlife part come winter? Make these permant!

The way internet sales are set up, I can purchase just wholesale flies, have mined tied and add to the list, some advertising I and my wife can have jobs and never have to worry about looking for work again! Why can't you people help me to make this possible for many others. If I had the funds to go after the loans, etc., I and others wouldn't need your help to co-ordinate these programs. As my business has been in R&D (actually was started as a THIRD job to make a living in Juneau!), and hasn't turned a profit, conventional financing is out. Sure, we can put up our house and land, but as the house was built when the land was homesteaded with a small addition, and land is zoned for a farm, it wouldn't qualify for more than putting us to work.

How in the world can you guys EVEN THINK of enticing business here when you don't even have a participant in a Federal Loan/Investment program started 42 years ago? Most seed companies that WILL produce considerable revenue need alternative financing methods, even like this. Yet all of you smile and say we are helping Alaskans! Small business is intended to create jobs for more than mom & pop and maybe there kids! If I would have thought of that lodge just built in Talkeetna and tried to get financing in Alaska, I would have been shot down. Well, you don't have experience running such a place. Tell that to the person who was HIRED to run it!

The gentleman at Business Developemnet sounded like I was crazy for saying that I intended to hire a manager to run the business while I concentrated on R&D AND MARKETING! If I had experience in running this type of business (name one company that does global internet salse in Alaska in such a market share!) I wouldn't need the help of the Business Developement Department! DUH! Just go to the web and contact a national SBIC firm! Also, if few people know fly tying and fishing like I do, why should I hire a whole staff to train while starting out? Another way to dome a business! This aspect requires hiring NATIONALLY to find the person who has experience in such a venture.

Have fun down there in Juneau saving Alaska. These ideas are not my own. Go into the Triangle lounge and ask the patrons if they can walk into the bank and get a loan. Some of those people (and all over Alaska) have good ideas for smaller businesses who need help getting them going. Sure, just go down the the SBDC. Hey, many of these people need heelp getting the paper work done, as even with the best software for a business plan, I need to tweek it to fit my particular situation.

If someone has a good idea for a lodge, he has guided for years, knows the clientel, much of the operational aspects, it still takes lining up the right manager to get things going. Sure, he might be willing to take a low salery until profits run up, but most conventional loans aren't structured for an additional expence of manager right off. They look at the fact that one doesn't have experience at running it, so see ya! What happens? An out of State owner comes in and starts just such a business.

Sincerely,

Timothy P. Caillouet

Commonwealth North

The New Economy in Times of Transition: An Alaska Perspective

by

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Presentation

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The term the new economy is at best a controversial phrase. I have always felt that it was hard to justify using the word "new." It has been my experience that someone has already discovered or identified what one thought was new. What I mean by the "new economy" is to recognize the reality of changes that are happening. As I'll detail in Part II of this paper, the numbers clearly show that by 1997 America's major industry was what the American Electronics Association study regarding Cyberstates called high technology. Also the last few years have seen the internet burst across the stock market scene as well as in the marketplace. There are still more early reality changes involved with biomedicine, health, biotechnology, and genome technologies as well as distance or virtual education, telemedicine and internet marketing and selling as well as data mining.

Chart A sets forth some of the key attributes of the new economy.

Chart A

**Overview of the New Economy – Attributes
Factors of Production Information/knowledge**

**Capital Increasingly intangible and
essentially limitless**

**Money Digital/electronic – alternate
currencies on internet and
elsewhere**

**Work Knowledge predominates with
emphasis on creativity and not
interchangeability**

Innovation Constant

**Scale Small business and small work
teams more important**

Organization Virtual, anti-bureaucratic

**Infrastructure Emphasis on communication/
networks**

Transactional speed Near real time

The term new economy can be discussed from at least two points of view. One based on global, regional and national fiscal monetary and stock markets and the second from structural changes. The first point of view based on fiscal and monetary and stock market aspects of the new economy deals with relative performance between nations, between industries and between firms. That will not be part of my talk this morning. Those of you interested will find some of my comments on the IC_ Institute web site: www.utexas.edu/depts/ic2 and the Commonwealth North web site: www.alaska.net/~cwnorth/.

The focus of my talk today will be on the structural changes of the new economy. More specifically, the new economy's structural change within the United States and then how it relates to Alaska.

The double title of the new economy in a structural sense and "times of transition" imply a double meaning. First, that things have been happening to our economy. Namely, it is transforming from a post-industrial society to technology/knowledge-based economy. But also, in times of transition suggests the need to broaden our sense of marshalling and developing technologies from their generation, to their transformation as "good" choices to create jobs, create wealth and prosperity through the marketplace for all people.

In the post-industrial society a nation's and/or state's comparative advantage was based on its natural endowments, such as land, minerals, climate, and other factors related to simple technologies. On the other hand, the new economy has been built on advanced technologies which have made production factors move toward knowledge and human resources-based investments, dependent on highly skilled personnel, and abundant financial assets. Key productive factors no longer rely on natural endowments or the value-added chain but more on how technologies, the economy, and society are blended by entrepreneurial leadership in all sectors – academic, business and government.

The remainder of my talk will concentrate on the U.S. new economy transition in three parts. Part One will be a review of the growing importance of the high technology in the United States, the new economy and the power shift. Part Two will benchmark how Alaska is positioned for the new economy and Part Three will cover options and possibilities for Alaska based on civic leadership actions for the 21st century new economy.

Part I. The U.S. New Economy

In the past decade and a half the United States has gone through the "3 Rs" in terms of its economy. By the 3 Rs, I mean reshaping, rethinking, and restructuring. The net result is that high technology is driving the U.S. society and is dominating the United States' new economy. As the American Electronics Association report "Cyberstates Update" for 1996 stated:

"... America's high tech industry has arrived and is driving the U.S. economy, creating jobs, wealth, and exports.

More than ever, high-tech manufacturing, communications services, and software services are the major components driving today's new economy. ... High technology means jobs, high-paid workers, and exports for all fifty states and the District of Columbia."

In that same report William T. Archey, President and CEO of the AEA wrote:

" We were not surprised to find that California leads the nation in most [high tech] segments: but who knew that Minnesota was the nation's second ranked cyberstate in electromedical equipment manufacturing employment or that Indiana ranked second in consumer electronics manufacturing? Also surprising, New York ranked first in photonics manufacturing. ... Texas was the country's leading cyberstate by employment in data processing and information services with nearly 5,000 more jobs than California. And Arizona ranks third in semiconductor manufacturing employment behind California and Texas."

Let me now review the macro level of the United States' new economy. High technology is the single largest industry by sales. In 1996 total high tech sales were \$866 billion in five industry clusters. (See Charts B and C.) U.S. high tech sales have increased 37 percent from 1990 to 1996. U.S. high tech sales surpass U.S. auto manufacturing and construction revenues. (See Chart D.) U.S. high technology service revenues have surpassed electronics manufacturing since 1991, software and computer-related services are the most dynamic segments. All high technology manufacturing segments except defense electronics continue to grow. High technology is the nation's leader in R&D expenditures -- \$40 billion in 1995 or thirty percent of all R&D expenditures. The high tech R&D growth since 1990 is 42 percent.

A more recent aspect of the new economy is the emergence of internet business in the new economy. There are over 64 million users of the internet in the United States. By the year 2000 over 56 percent of the U.S. companies will be selling their products on line. Small businesses that use the internet grow 46 percent faster than those that do not. Internet advertising generated \$1.92 billion in 1998 -- double 1997 figures. What is surprising is that small and home offices spent \$51.1 billion on high tech goods in 1998. Also internet service providers will generate \$15.1 billion in 1999 -- a 45 percent increase over 1997. Many expect in the new economy the global e-commerce market in 2001 to reach \$2.1 trillion of sales.

Under the new economy the internet business model major factors are as follows:

- * Based on technology standard, internet business promotes broad and massive market participation while encouraging "market anarchy."
- * The model is more like a web of interrelationships than the "command-and-control" model of the post industrial society.
- * The process of selection takes place around profits to

companies and value to customers as well as their customers' values.

* A technical infrastructure over \$1 trillion is in place, ready, and available for anyone to use at any time – free of charge.

Part II. Alaska Positioned for Transformation?

It is appropriate to ask if Alaska is positioned for transformation. There is little question that Alaska's economy from its very beginning was based on its natural endowments of minerals, timber, oil, and gas, fish, and the environment. Many of you and other Alaska leaders have made it possible to develop a post-industrial society based on your unique resources. There is little question that the Alaska Science and Technology Foundation has and is providing a base to develop and transition a technology-based infrastructure. But a California or a Massachusetts or even a Texas you are not. Nor is it necessary for Alaska to play catch up. Nor does it make sense to me for Alaska to duplicate Silicon Valley or Boston's Route 128 by creating an Alaska Silicon Mountain or Glacier.

On the other hand, Alaska can become a leader for what Jessica T. Mathews called a "power shift." She defined power shift as follows:

"A competing notion of "human security" is creeping around the edges of official thinking, suggesting that the security be viewed as emerging from the conditions of daily life – food, shelter, employment, health, public safety – rather than flowing downward from a country's foreign relations and military strength."

In short, Alaska needs to determine its own status and its various communities' future. The most significant lesson that I have learned from IC_ studies for the past twenty-two years in generating wealth and prosperity at home and abroad is that civic entrepreneurial leadership makes it possible to get on and stay on the leading edges of technology for transforming an economy – local and state. Civic entrepreneurship is a collaborative partnership of community leaders in academia, business, and government. Until there is such a cooperative partnership there is little transformation even while each sector is within itself excellent or world class. Under sectorial excellence, at best there can be only a gradual transition. What many of us have observed is that it takes a state or region some twenty to forty years to develop technology-based industries. For example, it took at least thirty-four years under a hot/cold war for the United States and California to develop Silicon Valley. Alaska cannot take that long to transform itself into today's new economy.

Let's see if it is possible to benchmark Alaska within the United States' newer economy. If I were to use high tech employment of 1996 to identify the ten top states in the new economy they would be in rank order California, Texas, New York, Illinois, Massachusetts, Florida, New Jersey, Pennsylvania, Virginia, and Ohio. (See Chart 10.) It makes no sense to me to build Alaska along their lines. We don't have the population or skills or access to Federal and private funds of those states. And we are living in other times.

For many reasons I thought it would be more practical to benchmark Alaska with the ten bottom states. In inverse order – lowest of the ten to the tenth largest state in the group – they

are Wyoming, Alaska, Montana, North Dakota, Hawaii, Delaware, West Virginia, Maine, Vermont, and South Dakota. Alaska had in 1996 high tech employment of 3,243. This was about 300 more than Wyoming or 10,218 less than South Dakota. What is surprising is that Alaska's high tech average wages were \$17,000 more than South Dakota and only Delaware's average high tech wages were about \$8,000 more than Alaska's. In other words the two high tech salary states of the bottom ten were Delaware and Alaska. The highest total high tech payroll state was Vermont with \$625 million but Alaska's total high tech payroll of \$153 million was more than Wyoming, Montana, and North Dakota. Alaska had only 153 high tech firms compared to 612 in West Virginia, 525 in Maine, and 423 in Vermont. The exports of high tech from Alaska as you would expect were \$61 million or the second smallest and it was only two percent of Alaska's total exports. On the other hand, Vermont and South Dakota's high tech exports were 56 percent and 53 percent respectively. And the high tech worker concentration of 1000 of all private sector workers was 17 in Alaska compared to 59 for Vermont and 49 for South Dakota.

Comparing Alaska within the ten lowest states shows that it is possible to get more high technology workers into our state. The least number of high tech workers per 1000 private sector workers were 12 in Wyoming, 13 in Montana, and 15 in Hawaii. On the other hand, Alaska's percentage change in high tech employment from 1990 – 1996 was 32 percent while Maine lost 2 percent, and Vermont only gained 10 percent. Only North Dakota (+66 percent), South Dakota (+ 153 percent), and Delaware (+42 percent) gained more high tech jobs than Alaska. The bulk of Alaska's 1996 high tech jobs were in the communication (2,600) and software and computer-related service jobs (700).

Table 2 deals with high technology manufacturing sectors. Of the ten bottom states in high technology employment two states – Alaska and Hawaii – had no employment in high tech manufacturing.

Alaska's 1996 high tech employment was in high tech services. See Table 3. Alaska's communication services employment is larger than Wyoming, Montana, North Dakota, Delaware, Vermont, and South Dakota. Software services are second to the lowest, some sixteen more than Wyoming. Data processing and information services employment in Alaska is third smallest to South Dakota and Wyoming. Alaska is the third lowest state for rental, maintenance, and other computer-related services employment. Wyoming and Montana respectively employ 170 and 12 less than Alaska.

Of the ten lowest states in terms of high tech employment, Alaska has room for growth. If we could do as well as Hawaii or Delaware, Alaska could double its high tech employment base. If Alaska could start a computer manufacturing company such as Gateway in South Dakota, it could create several thousand jobs. Even software companies or internet companies could add hundreds of jobs as the ten lowest states' benchmark indicates.

To transition to the new economy, Alaska needs more than simply adding more employment in high tech services or manufacturing or internet. What is needed is to develop a current vision that makes it possible to generate potential options and possibilities for transitioning from an industrial economy based on natural resources to one based on a high tech/knowledge economy.

Part III. Alaska's Potential, Options, and Possibilities

The Alaska Science and Foundation Draft Strategic Plan Report of February 6, 1998 had this

to say about Alaska's options and possibilities:

"If the remote prospect of higher oil prices doesn't materialize, if cutting the size of the state and local government doesn't automatically make Alaska's economy grow, and if events do not make the cards history has dealt the state – Alaska's resources and location – more valuable, what choices do Alaskans have?"

Examining the dynamics of the state's economy leaves Alaska with three realistic options – getting smaller, getting poorer or getting smarter."

The choice for Alaska, in my opinion, is "getting smarter" by utilization of high technology and knowledge to transform the current economy to the new economy. There are two simple aspects for transitioning to the new economy. First, become a consumer and import or buy technology to add more value to Alaska's natural resources. Second, develop newer technologies to diversify Alaska's economic base beyond its natural resources. In short, add the necessary technology entrepreneurial infrastructure – talent, technology, capital and know-how.

In recent e-mail correspondence with former Alaskans, they have pointed out that Alaska will not attract the attention of the better venture capitalist for ages. Furthermore, Alaska-based entrepreneurs will need good coaching to prepare them for the top of the line venture capitalists. Furthermore, Alaska is an expensive place for budding entrepreneurs to be attracted to and to survive the start-up period. On the other hand, individual Alaskans are entrepreneurial and are as motivated and restless as those in Silicon Valley. However, Alaska lacks the industries to garner necessary experience for innovation nor does Alaska have the educational base to generate newer ideas for the new economy. This means that Alaska will either have to import significant talent or attract former Alaskans with talent to return. Worthwhile ideas for generating wealth are rarely developed by someone who is ignorant of the industry and its global competitive needs. Alaskan's universities by and large do not have the idea-generating technology like Stanford, MIT, Carnegie Mellon and the University of California System et al. Nor are Alaska's educational institutions prone to develop technology entrepreneurs who utilize internet commerce and other advanced managerial methodologies.

I always remind my former Alaska e-mail associates as well as others that ASTF has been a unique resource for transitioning to the New Economy in Alaska. As to venture capital, ASTF has provided financial resources through helping to establish Alaska Growth Capital BIDCO, Inc. and Alaska InvestNet. Wasn't the April 26-27 Alaska InvestNet conference really a great kick-off on how to structure and price risk so investors and entrepreneurs can make deals to grow businesses? AIN's fall meeting should really help build the "angel" side of AIN. Also ASTF has helped fund SBIR bridge programs. Industry initiatives for innovation have been established for the fishing and seafood processing, agriculture, forestry, mining, and energy industries among others. Cutting-edge innovation development programs have been established for advanced environment and sanitation projects. The University of Alaska Board of Regents and Chancellor are meeting with a subcommittee of the ASTF board to better integrate Alaska's academic efforts with industry needs. Most of Alaska's K-12 classrooms are now wired to the internet with the help of thousands of Net Day volunteers, businesses, schools and ASTF's \$10,000 per building grants. ASTF has greatly impacted Alaska's science and math capabilities by way of a unique K-12 statewide teacher grant program.

ASTF has been a significant factor in transitioning Alaska's economy to a high technology

economy. As you know, the process from idea to market results takes from 7 to 10 years. An independently commissioned survey reported the following results:

- * 100 jobs a year since 1995 have been added by ASTF programs
- * \$13 million in additional sales

Let me get to the point that I'd like to make. After ten years on the Alaska Science and Technology Foundation board, I am devoted to doing my darndest to help transform Alaska into the new economy of the 21st century. An economy based on technology and knowledge as well as the internet.

I don't think the transformation is lacking in alternative opportunities. After all, Alaska has a number of resources and natural resources to generate its wealth and prosperity in a globally competitive market. Alaska's Permanent Fund is also a unique resource. The state has a number of untapped natural resources such as natural gas and coal. Certainly Alaska's tourism is a growth industry.

What I find lacking in Alaska is what a number of us call grassroots leaders for civic entrepreneurship for the new economy. These are Alaskan grassroots leaders who are asking themselves what will happen to our communities as well as our firms and us as individuals in times of hyper change and transforming of America's know-how economy to high tech based on knowledge. Civic leadership deals with issues that evaluate how communities collaborate economically to compete globally, how to restore a civil society, how to build the grounds upon which one can help link business and government within successful economic communities. Grassroots entrepreneurship is involved in transforming a community's economic structure as well as providing the necessary civil, community, and technology infrastructure.

Civic entrepreneurs are separate from business entrepreneurs and economic development professionals. They are not doers in the sense of building firms to provide for jobs and wealth generation in the community through stock appreciation or job creation. Rather they are catalysts for building and developing their communities through teaming the public, private, academic, and civic sectors. Civic entrepreneurs are people of vision, passion and energy who help to encourage and bring the best out in other people in business, government, and academia. As Henton, Melville and Walesh wrote:

Civic entrepreneurs have five common traits. They:

- * See new opportunities in the new economy.
- * Possess an entrepreneurial personality.
- * Provide collaborative leadership to connect the the economy and the community.
- * Are motivated by broad, enlightened, long-term interests.
- * Work in teams, playing complementary roles.

Alaska does not lack for potential civic leadership. In the past ten years, I have served with a number of Alaskans on the Alaska Science and Technology Foundation board with the above traits. What is needed is to find a vehicle to form a team and/or a community to do this for Alaska and its future economy.

There are a number of ways to establish civic entrepreneurship leadership. For example, Florida utilized its Chamber of Commerce on a state-wide basis to remake the state and community levels. Silicon Valley Inc. was formed in the early 1990s for the region between Palo Alto and San Jose to revitalize a stagnant economy. Hundreds of people from high-tech firms, local government, and education were formed into twenty or more select committees to deal with the problems and issues. After fiscal default, business leaders joined with local government and with the community to transform Cleveland into "The Comeback City."

Alaska needs to do civic entrepreneurship in its own way. After all, there are less than 600,000 Alaskans in the geographically largest state in the nation. Its economy needs to be globally competitive in the new economy. I'd like to explore if it is possible to build a state-wide virtual civic entrepreneurship or a regional civic entrepreneurship or a series of community-oriented civic entrepreneurship in Alaska.

Alaska's civic entrepreneurship is important to help identify, evaluate, and confirm turning points for Alaska's economic structure in a coordinated and collaborative manner. Change of fundamental economic opportunities as well as markets, impacts of technologies on processes, dropping world market prices for natural resources; oil and gas, coal, gold etc.; changing consumer choices such as in fish products and species is not easy to predict. That is why a civic entrepreneurial group from all sectors of Alaska makes some sense to me. My work in Florida, California, Singapore, China, Washington, and Texas has confirmed that civic entrepreneurship can better face the facts, step back from daily, weekly, seasonal pursuits and ask critical key questions. Key questions such as what is going to happen to the Alaska fish market over the next two to five years or more? Who will buy our natural resources and in what form that will result in a satisfactory projected investment return? Is it possible to build home-grown companies in Alaska that will be sold over the stock exchanges? How do we generate "home-grown" capital in Alaska? In times of peace and prosperity is it possible for private sector leadership to emerge in Alaska to complement public sector and academic sector leadership?

Optimistically I know that Alaska has the talent, the resources, and the ability to transform its economy to the new economy of the 21st century. The only question which you in this room and other Alaskan leaders can answer by appropriate action is do you have the vision, the passion, the teamwork, the values, and the fire in the belly to start your own civic entrepreneurship? I'm ready to help when asked.

Let me end with my favorite quote:

"The richness of a community is no longer tied to natural resources or the industrial base, but to how well its leadership takes advantage of human potential.

A community's ability to learn not only how to create technology, but also how to turn it into a product and gain value from it will be the test that determines success in the 21st century."

-- Dr. W. Arthur Porter