Notes & Comments

APPLYING TORT THEORY TO INFORMATION TECHNOLOGY

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I.   Introduction

On January 1, 2000, the world heaved a collective sigh of relief as the much publicized silicon

Armageddon of Y2K resulted in only minor inconveniences. Whether or not the Y2K crisis was ever a

serious danger will be debated for years to come. Information Technology professionals will claim that

the crisis was averted only through their diligent efforts, while skeptics will wonder if the entire episode

was merely the computer industry's rendition of Chicken Little's predictions of a falling sky.

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The legal community should be grateful for the crisis-free millennium as well. While a few computer cases have been litigated that consider the type of treatment courts should apply to computer cases, there is no clear mandate from courts on how technology cases should be handled. Various schools of thought range from the conservative (advocating the consideration of all computer cases as contractual in nature) to the radical (not only considering such cases as matters of tort, but even advocating the recognition of computer malpractice).

Perhaps legal commentators should be disappointed instead. A wave of computer cases triggered by Y2K failures might have provided additional case law and forced the courts to seriously evaluate how these cases are treated. The courts would have at least had to provide clearer guidelines on whether to classify cases as contractual or tortious, and when punitive damages might be proper. Despite the fact that an averted Y2K crisis lessened some of the urgency, now is the time during the Information Revolution for the legal community to standardize how this new breed of litigation should be handled.

II.   Traditional Application of Contract Theory

Before discussing the application of tort theory to Information Technology (hereinafter IT), it is important to consider an alternative approach that has a historical foundation and considerable support today. A substantial segment of the legal community subscribes to the theory that IT actions are not tortious, but are instead based on contract theory.

The law of contracts supports and enforces bargained-for promises that are voluntarily made.[1] A key element in formation of a contract is mutual consent.[2] The law of torts, meanwhile, is primarily concerned with the enforcement of obligations necessary for the common good of society.[3] These

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[1] John Jay Fossett, *The Development of Negligence in Computer Law*, 14 **N. Ky. L. Rev.** 289, 291 (1987).

[2] Id.

[3] Id.

obligations do not require the mutual consent element necessary for a contract.[4] Clearly, the purchase of

a computer system or software is a transaction based on mutual consent. Thus, many observers would

consider any IT cause of action to be based on contract theory, rather than tort theory. In fact, some

analysts have concluded that introducing nonconsensual elements into an obligation that is primarily

based on mutual consent is inherently wrong.[5]

Analysis of IT actions as purely contractual is somewhat problematic. Contract theory might be

adequate to address grievances that exist solely between the actual parties to a contract. However, third

parties are often injured by computers and their owners. Some of these injured parties might not have

any contractual relationship, overt or implied, with either the seller or the purchaser of these computer

systems.[6]

Contractual remedies are typically unavailable not only when the plaintiff lacks privity with the

defendant, but also when such remedies are precluded by exculpatory clauses in purchase agreements.[7]

A few states (such as Massachusetts) have extended the notion of privity to allow any reasonably

foreseeable user of goods to recover damages for direct economic loss. Still, even this broad application

would preclude recovery for those who were not users of the goods, but instead were merely third

parties injured as a result of their use (e.g., a utility customer who has his service terminated as a result

of computer error). Exculpatory clauses in contracts are enforceable unless they are deemed

unconscionable or where the limited remedy would be inadequate.[8]

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[4] Id.

[5] Id. at 292. (citing Committee Report, Tort Theories and Computer Litigation, 8 N.Y.B.A. Rec. 425, 437 (Oct. 1983) [hereinafter Committee Report]).

[6] Id. at 291.

[7] Id. at 291-92.

[8] Conley, *Much Ado About Nothing? The Evolution of Computer Malpractice*, 301 **PLI/Pat** 665, 670 (October 25-27, 1990).

Tort claims connected with contract breaches are typically limited via the economic loss doctrine.[9] Courts have defined economic losses as "damages for inadequate value, costs of repair and replacement of the defective product, or consequent loss of profits – without any claim of personal injury or damage to other property".[10] The economic loss doctrine limits liability to only those losses that are the foreseeable result of any breach of contract.[11] The doctrine makes the assumption that the potential victim has the best opportunity and lowest cost to negotiate protective arrangements (e.g., insurance) for such losses.[12] Thus, recovery is limited by this doctrine to only those losses which are reasonably foreseeable – precluding any claims for punitive damages.

The limitations of privity, exculpatory clauses, and the economic loss doctrine do not apply to personal injuries suffered by plaintiffs due to computers, however. In most states, damages for personal injury cannot be limited by exculpatory clauses. Because computers rarely cause personal injuries, manufacturers of computer products are typically protected from large damage awards in contract actions through their use of well drawn exculpatory clauses.[13]

Still, some members of the legal community, including a special committee to the Association of the Bar of the City of New York, maintain that contract theories should be applied in all computer cases where the loss is economic.[14] While a few states have allowed recovery for economic loss based on negligence (due to faulty design or manufacture), the majority view considers negligence theory to be

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[9] Richard A. Glaser and Leslie M. Lewis, *Redefining the Professional: The Policies and Unregulated Development of Consultant Malpractice Liability*, 72 **U. Det. Mercy L. Rev.** 563, 568-69 (Spring 1995).

[10] Moorman Mfg. Co. v. National Tank Co., 435 N.E.2d 443, 449 (Ill. 1982) (quoting Note, Economic Loss and Products Liability Jurisprudence, 66 Colum. L. Rev. 917, 918 (1966)).

[11] Glaser and Lewis at 569.

[12] Id.

[13] Conley at 670-71.

[14] Fossett at 292. (citing Committee Report at 437).

inappropriate in such cases.[15] Products whose malfunction results in economic loss violate only

contractual expectations, not matters in tort.[16]

The minority report issued by the same committee was more modern in its view of negligence

and the computer.[17] The minority recognized that the issues of computers and the law present many

questions never before contemplated by lawmakers or the courts.[18] In its report, the minority regarded

the majority's desire to relegate these new issues into traditional theories of law as "presumptuous" and

noted the majority's reluctance to issue a breakthrough opinion on this topic.[19]

Thus, it seems apparent that neither treatment in tort nor in contract can be singularly adequate

for adjudicating the myriad of potential IT actions. Contractual issues such as privity and exculpatory

clauses are important components in IT actions, but tortious elements such as involvement of third

parties and personal injury are vital as well. IT actions cannot be decided solely in contract; instead,

some IT actions must be considered as matters in tort.

III.   Potential Tort Treatment of Information Technology Actions

While it is generally accepted that many causes of action based on Information Technology are

grounded in contract, there are still many others based on tort theory. Cases involving personal injury or

property damage must be considered as tortious cases, since damages in contractual actions are limited

by the aforementioned privity and exculpatory clause limitations. Still others are destined for tort

consideration based on the plaintiff's lack of a contractual relationship with either the seller or purchaser

of computer systems. Additionally, cases are often based on tort theory when there are allegations of

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[15] Id. (citing Committee Report at 427).

[16] Id.

[17] Id. (citing Committee Report at 429).

[18] Id.

[19] Id.

fraud or intentional misrepresentation regarding IT. Not surprisingly, there are a variety of approaches

and theories that have been adopted by courts in applying tort theory to Information Technology.

A.   Fraud

Fraud is a tort recovery action often used as a way to avoid limits on recovery applied to actions

in contract.[20] To prove that an intentional fraud was committed, a plaintiff must prove that: (1) the seller

made false representations of fact; (2) for the purpose of inducing the buyer to enter into the contract; (3)

with knowledge of their falsity or a reckless disregard for the truth; (4) that were material to the bargain;

and (5) were reasonably relied upon by the purchaser.[21] The basis for a fraud action may consist of

concealment or nondisclosure of a material fact.[22] The primary impediment to recovery on grounds of

fraud is the difficulty of proving the defendant's knowledge of a statement's falsity or the defendant's

reckless disregard for the truth.

Nevertheless, actions for fraud regarding computer systems have been successful at times. In

VMark Software, Inc. v. EMC Corporation, the Massachusetts Court of Appeals ruled in favor of a

software licensee in the wake of the licensor's failed attempt to implement its software at the licensee's

place of business.[23] The court here held that not only did the licensor misrepresent some facts about the

software that it should have known, but also that the licensor withheld material facts that the licensee

relied upon to its detriment.[24] The court not only awarded reasonable attorneys' fees and costs,[25] but

also held that the licensee was entitled to all the damages it suffered as a proximate result of the

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[20] Conley at 671.

[21] See Gary E. Clayton, et. al, *The Year 2000 Headache "Two Thousand Zero Zero. Party's Over. Oops, Out Of Time,"* 28 **Texas Tech L. Rev.** 753, 787 (1997).

[22] Lindberg Cadillac Co. v. Aron, 371 S.W.2d 651, 653 (Mo. Ct. App. 1963).

[23] VMark Software, Inc. v. EMC Corporation, 642 N.E.2d 587 (1994).

[24] Id. at 594.

[25] Id. at 597.

licensor's misleading representations.[26] Moreover, the court found that the licensor was also be liable

for the costs of hours expended by the licensee in its failed attempt to make the defective computer

system work.[27]

Actions for IT fraud will likely continue to be rarely tried, due in large part to the heightened

burden of proof on the plaintiff and the availability of other causes in tort. But it is also possible that

technology will create new tools that might help plaintiffs prove that defendants knew or should have

known of the failings of its products or services. For example, automated testing tools and computer

environment simulators could help a vendor determine its products capabilities before, rather than after,

a contract is entered with a prospective customer.

1.   Negligent Misrepresentation

Many states have implemented negligent misrepresentation statutes that closely resemble Section

552 of the Restatement (Second) of Torts, which states:

> **One who, in the course of his business, profession or employment, or in any** other
> transaction in which he has a pecuniary interest, supplies false information for the
> guidance of others in their business transactions, is subject to liability for pecuniary loss
> caused to them by their justifiable reliance upon the information, if he fails to exercise
> reasonable care or competence in obtaining or communicating the information.[28]

While at first glance it might appear that negligent misrepresentation is available to sidestep the

compensation limits imposed on contractual actions, courts have found that Restatement Section 552

does not open the floodgates for pecuniary and punitive damages. In *Palco Linings, Inc. v. Pavey,*

Inc.,[29] the plaintiff contended that a consulting architect/engineer on its construction project provided

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[26] Id. at 587.

[27] Id.

[28] Restatement (Second) of Torts § 552, cmt. B (1977).

[29] 755 F. Supp. 1269 (N.D. Pa. 1990).

negligent misrepresentations (in the form of advice) that impeded the project and resulted in additional delays and expenses.[30] The court here found that the economic loss doctrine applies to negligent misrepresentation cases just as it applies in contractual cases.[31] If plaintiffs were entitled to recover economic losses for every misrepresentation, then all manufacturers and professionals would essentially be offering a "lifetime guarantee" for any of their work.[32]

The reluctance of courts to broadly apply negligent misrepresentation to IT actions may be based on public policy considerations. The imposition of potential billion dollar burdens on companies that negligently claim that their software is accurate when in fact it is not would certainly deter companies from developing new products or releasing them in a timely manner for the marketplace. Given a choice, it seems that the IT industry might be better suited limiting such losses in order to encourage innovation and risk-taking in the industry.

B.   Strict Liability

To date, there have been no cases alleging strict liability in tort due to computer error. This is due, in large part, to the widespread acceptance that the Restatement (Second) of Torts, Section 402A, imposes liability only for personal injury or property damage caused by unreasonably dangerous or defective products. The section reads in relevant part:

> **(1)   One who sells any product in a defective condition unreasonably** dangerous to the user or consumer or to his property is subject to liability for physical harm thereby caused to the ultimate user or consumer, or to his property, if
> **(a)   the seller is engaged in the business of selling such a product, and**
> **(b)   it is expected to and does reach the user or consumer without** substantial change in the condition in which it is sold.[33]

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[30] Id. at 1270.

[31] Id. at 1273.

[32] Id.

[33] Restatement (Second) of Torts § 402A (1977).

There are no cases on point regarding a computer system causing a physical injury. As noted

earlier, many cases involving purely economic loss have been considered as more appropriate for action

in contract.[34] Thus, strict liability has not been pursued as grounds for an IT action in tort.

Eventually, a case will arise where a computer or its programs will be alleged to have caused

physical injury to another. One such opportunity was presented in which the plaintiff based his claim on

false imprisonment, rather than strict liability.[35] The plaintiff was stopped for a routine traffic violation.

The traffic officer, following standard procedure, checked his computer system and discovered an

outstanding warrant for the plaintiff's arrest. The computer system was faulty, however, as the plaintiff

had already appeared in court and the warrant had been quashed. The officer arrested the plaintiff

despite his claims of innocence.[36]

After spending the weekend in jail, the plaintiff appeared before a judge who ordered the

plaintiff released. Rather than releasing the plaintiff immediately, the police returned the plaintiff to the

sheriff's custody and placed him back in jail, awaiting processing. The plaintiff, who was guilty of

nothing and was never charged with a crime, was placed among the general prison population for the

next 10 hours (contrary to established policies of the Illinois Administrative Rules), where he was raped

and sexually assaulted by other inmates. [37] In this case, alleging strict liability would probably have

been challenged to link causation for the rape to the computer program; however, this case illustrates

that a similar situation will eventually arise where strict liability is cited as the basis for an action in tort

regarding Information Technology.

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[34] See Daniel T. Perlman, Note, *Who Pays the Price of Computer Software Failure?,* 24 **Rutgers Computer & Tech. L.J.** 383, 396 n.78 (1998).

[35] McMurry v. Sheahan, 927 F. Supp. 1082 (N.D. Ill. 1996).

[36] Id. at 1086.

[37] Id. at 1086-87.

Claims of strict liability in IT causes of action will be hard pressed to meet the standards associated with such claims. It seems that such claims might occur, if at all, when computers are used to assist in abnormally dangerous activities, such as blasting with dynamite in urban areas. A software developer whose product causes injury in such a situation might be considered liable if the use of the software was intended for that dangerous purpose and it was foreseeable that harm might occur if the software was used in its normal operating fashion.

Use of other software not specifically designed for a dangerous activity would probably not be subject to claims of strict liability. It seems unlikely that a spreadsheet developer, for example, would be subject to an action for strict liability if an error in calculation resulted in improper detonation of explosives. The spreadsheet developer, in this example, would likely be relieved of strict liability because it was not foreseeable that his product would be relied on for protection from the particular hazard involved.

1. Products Liability

The imposition of strict products liability is supported by four general policies. First, the party responsible for damages inflicted by defective products is the party in the best position to detect and eliminate such defects.[38] Second, liability should be accorded to the party best able to absorb and spread the risk through alternative means such as insurance.[39] Third, the burden of proof for the injured party must not be excessive, since the injured party is typically not in a position to identify the cause of the

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[38] See Noel, *Manufacturers of Products – The Drift Toward Strict Liability*, 24 **Tenn. L. Rev.** 963, 1009-10 (1957).

[39] Id.

defect.[40] Finally, consumers today rely on the manufacturer's reputation and no longer are subject to the

doctrine of caveat emptor.[41]

Typically, it is appropriate to extend strict products liability doctrine to computer hardware, since

such hardware employs standard production techniques and offers ample opportunity for quality control

measures and testing. There are times, however, when even this application proves troublesome. For

example, personal computers are controlled by ROM-BIOS chips. These chips contain computer

programs (generally referred to as "firmware") that are frequently written by companies other than the

manufacturer of the physical computer unit. They are physically integrated onto the PC's motherboard

(its "brain") and cannot be modified by the user. Thus, it is unclear whether firmware products such as

these would be considered hardware (subjecting them to products liability action) or software (probably

subjecting them to negligence or contractual actions).

Nevertheless, application of products liability is rare in computer-related cases since most IT

actions concern issues of economic loss, not personal injury or property damage. It is likely, however,

that such actions will become more prevalent as members of society entrust their lives and physical

well-being to computers more frequently. Already, developers of computer systems such as those that

control the environment in confined places such as jet airplanes and skyscrapers face the likelihood of

product liability actions in the event of catastrophic failure.

C.   Negligence

Clearly, plaintiffs' attorneys are attracted to the notion of negligence theories for their clients

who are injured by computers.[42] Several procedural advantages are made available once the action is

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[40] Id.

[41] Id.

[42] Fossett at 291.

removed from the confines of contract law.[43] First, exculpatory clauses limiting liability are rendered

ineffective when the action is no longer grounded in contract.[44] Moreover, plaintiffs may be able to

introduce evidence into a tort action that would be precluded by parol evidence rules or integration

clauses if based on contract theory.[45] Additionally, longer statutes of limitations and more generous

tolling provisions are typically applicable in tort actions.[46] Finally, many of the privity issues discussed

earlier no longer apply once the action is examined under tort theory.[47]

      Three types of negligence actions might be asserted regarding Information Technology claims:

(1) computer malpractice claims against those who sell, service, or program computers; (2) claims by

third persons who are negligently harmed by those who use computers and (3) claims by third persons

who are negligently harmed by those who fail to use computers.[48] As with all other claims of

negligence, four elements must be met: (1) a duty of care which, either by one's action or failure to act;

(2) has been breached, the breach being the (3) proximate cause of (4) the plaintiff's damage or

injuries.[49]

1.   Computer Malpractice

Malpractice is defined as:

"Professional misconduct or unreasonable lack of skill. This term is usually applied to
such conduct by doctors, lawyers, and accountants. Failure of one rendering professional
services to exercise that degree of skill and learning commonly applied under all the
circumstances in the community by the average prudent reputable member of the

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[43] Id.

[44] Id.

[45] Id. at 291-92.

[46] Id. at 292.

[47] Id..

[48] Id. at 293.

[49] W. Prosser & W. Keeton, Prosser and Keeton on the Law of Torts § 30 at 164-65 (5th ed. 1984).

profession with the result of injury, loss or damage to the recipient of those services or to those entitled to rely upon them."[50]

A breach of contract is considered a tortious breach if the relationship between the parties is a "professional relationship".[51] Thus, it is apparent that in order for malpractice to be considered and for a contractual breach to also be considered a tort, the definition of "professional" is crucial.

A profession may be described according to several factors: (1) the requirement of extensive learning and training; (2) a code of ethics imposing standards above those normally tolerated in the marketplace; (3) a disciplinary system for members who breach this code; (4) a primary emphasis on social responsibility over strictly individual gain; and (5) the prerequisite of a license prior to admission to practice.[52]

Originally, the professional negligence standard was designed primarily for application to physicians.[53] Since its inception, it has branched out to include "dentists, pharmacists, psychiatrists, veterinarians, lawyers, architects and engineers, accountants, abstractors of title, and many other professions and skilled trades".[54]

Is today's computer consultant a professional? According to the criteria listed above, these technicians of varying degrees of skill could hardly be considered professionals. Today's computer consultant meets none of the five outlined criteria for treatment as a professional. Nevertheless, some courts have found that professional negligence was a proper cause of action against computer consultants.

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[50] Black's Law Dictionary 959 (6th ed. 1990).

[51] Triangle Underwriters, Inc. v. Honeywell, Inc., 604 F.2d 737 (2d. Cir. 1979).

[52] Lincoln Rochester Trust v. Freeman, 355 N.Y.S.2d 336, 339 (1971).

[53] Prosser & Keeton at 185-86.

[54] Id.

The Southern District of New York was one of the first courts to examine this issue in 1977. In

F & M Schaefer v. Electronic Data Systems[55], the court looked at the relationship between the parties

who had contracted to work together on a new computer system. [56]   The system never worked properly,

leading F & M to sue EDS.[57] The court, in its decision regarding the tolling of the statute of limitations,

found that there was substantial reliance on the part of F & M because of the technology involved.[58]

The court found that this complexity precluded F & M from giving EDS informed consent regarding the

work.[59] The court further stated that since lay people could not be expected to understand programming

languages, a special relationship existed between the parties.[60]

The court did not rule in this case on a professional negligence basis, however.[61] The parties

settled the case out of court after the statute of limitations ruling was issued.[62] Thus, the court was not

given the opportunity to decide whether professional negligence was appropriate – the matter was left

merely with the court's observance that substantial reliance existed. The Second Circuit, in 1979,[63] and

the Third Circuit, in 1982,[64] relied on the *Schaefer* court's reluctance to find professional negligence in

holding that computer consultants should not be subject to suits for professional malpractice. Other

courts followed their lead and were unwilling to apply professional negligence in computer cases for

another twelve years, with one notable exception. In *Data Processing Services, Inc. v. L.H. Smith Oil*

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[55] F & M Shaefer Corp. v. Electronic Data Systems, No. 76-3982 (S.D.N.Y. Mar. 28, 1977).

[56] Id.

[57] Id.

[58] Id.

[59] Id.

[60] Id.

[61] Joseph Condo, *Computer Malpractice: Two Alternatives to the Traditional "Professional Negligence" Standard*, 11 **Computer/L.J.** 323, 326 (April, 1991).

[62] Id. at 327.

[63] Triangle Underwriters, Inc. v. Honeywell, Inc., 604 F.2d 737 (2d. Cir. 1979).

[64] Chatlos Sys., Inc. v. National Cash Register Corp., 670 F.2d 1304 (3d. Cir. 1982).

Corp.,[65] the Indiana Court of Appeals went against the stated rule, finding that a computer consultant was indeed liable for professional negligence.[66] While many at the time considered this variance from the rule to be an anomaly, it was, instead, a harbinger of things to come.

In February of 1989, the Eighth Circuit went against precedent by deciding that a computer consultant committed professional malpractice in *Diversified Graphics, Ltd. v. Groves*.[67] Diversified, a screen printer and apparel manufacturer, contracted Ernst & Whinney (a partnership of which Groves was chairman) for advice on the purchase and installation of a computer system.[68] Ernst & Whinney selected a vendor and Diversified purchased from that vendor.[69] After the system proved inadequate and cumbersome to operate, Diversified filed suit against Ernst & Whinney for various claims including negligence.[70] The district court instructed the jury using instructions typically used against physicians in malpractice actions.[71] After the jury awarded Diversified $82,500, Ernst & Whinney appealed, arguing that the district court should have held it to an ordinary standard of care rather than the professional standard of care.[72] The Eighth Circuit determined that Ernst & Whinney had been held to an appropriate standard of care, citing two important principles.[73] The first stated that "the degree of skill and care … required of a professional is a question of fact for the jury."[74] The Court also emphasized Ernst & Whinney's affiliation with the American Institute of Certified Public Accountants (AICPA) and

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[65] 492 N.E.2d 314 (Ind.Ct.App. 1986).

[66] Id.

[67] 868 F.2d 293 (8th Cir. 1989).

[68] Id. at 294.

[69] Id. at 294-95.

[70] Id. at 295.

[71] Id.

[72] Id. at 295, 297.

[73] Id. at 296.

[74] Id.

considered the AICPA's standards when evaluating Ernst & Whinney's conduct.[75] The Court further

held that applicable industry standards could serve as an acceptable substitute when considering

professional negligence actions against software engineers, thus disposing of the lack of licensing

standards as a basis for denial of malpractice liability.[76]

In the wake of *Data Processing Services*[77] and *Diversified Graphics,*[78] it was anticipated that the

result would be the advent of a computer malpractice tort similar to the malpractice torts common to

physicians and lawyers.[79] Instead, however, other courts resisted the temptation to create a new area of

malpractice, largely in deference to the traditional approach that the lack of a licensing scheme

pertaining to the computer industry precluded the imposition of professional negligence.[80]

It is unclear whether the pendulum will swing back toward recognition of computer malpractice

as a tort in the future. Microsoft Corporation's development of a certification system for computer

engineers brings the industry closer to general acceptance as professionals. These certification programs

for developers and network administrators require continuing education as well as achieving a sufficient

score on a series of challenging exams. It is likely, if the Microsoft Certification Program becomes

widely accepted as the industry standard, that a consultant using the certification to attract business may

someday face a cause of action for computer malpractice that will reconsider the notion of the computer

industry as a profession.

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[75] Id. at 296-97.

[76] Id.

[77] 492 N.E.2d 314 (Ind.Ct.App. 1986).

[78] 868 F.2d 293 (8th Cir. 1989).

[79] William D. Horgan, *The Y2K Problem: A Proposed Statute to Guide Triers of Fact in Determinations of Negligence*, 6 **Rich. J. L. & Tech.** 15, *34 (Winter, 1999).

[80] See, e.g., Micro Data Base Sys., Inc. v. Dharma Sys., Inc., 148 F.3d 649 (7th Cir. 1998); Hospital Computer Systems, Inc. v. Staten Island Hospital, 788 F. Supp. 1351, 1361 (D.N.J. 1992); Rogers Merchandising, Inc. v. Bojangles' Corp., 1989 WL 6391, at *3 (N.D.Ill. 1989); RKB Enterprises Inc. v. Ernst & Young, 582 N.Y.S.2d 814 (1992).

2.   Negligent Use of Computers

Computers cannot, by themselves, commit acts of negligence. Much like a hammer or even a gun, they are tools controlled by their user. Accordingly, an injured plaintiff will typically look to the computer user first for remedy.[81] In most instances, there will be no contractual relationship between the injured and the computer user.[82] Thus, an action for negligence would likely be appropriate.[83] Those who use computers have a duty to use them with care.[84]

One court commented that the use of business machines like computers will not absolve a company of its responsibility to be accurate.[85] The court referred to computers as "unimaginative mechanical devices" whose failure to think like humans is ultimately the fault of the humans who program them and subsequently use them.[86]

In examining negligent use of computers, it is helpful to divide actions into three categories. A computer system consists of three components: hardware, software, and human beings.[87] Each component has its own unique weaknesses, but any of these components may perform actions that result in serious harm.[88]

One factor that complicates IT actions considerably is the tendency for vendors and users alike to "point fingers" at each other in the event of system failure. When a system "crashes", the first thought is to blame the hardware. Calls to technical support departments for the hardware vendor usually begin

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[81] Fossett at 293.

[82] Id.

[83] Id.

[84] Id. at 294.

[85] State Farm Mutual Auto Insurance Company v. Brockhurst, 453 F.2d 533, 536-37 (10th Cir. 1972).

[86] Id.

[87] Hanson, Daniel J., Note, *Easing Plaintiff's Burden of Proving Negligence for Computer Malfunction*, 69 **Iowa L. Rev.** 241, 243 (1983).

[88] Id.

with questions like "What software were you running at the time?". Inevitably, the hardware and

software vendors will look to the user for some contribution to the failure, including potential

environmental problems such as power surges, humidity, static electricity and the like. Still, third

parties have been successful in actions relating to hardware, software, and user error.

Hardware error was successfully argued in a res ipsa loquitor negligence action in *Nelson v.*

American Airlines.[89] The plaintiff in this case suffered injuries when she was thrown about the cabin of

an airplane by a sudden flight maneuver caused by a malfunctioning automatic pilot.[90] The court found

that there was insufficient evidence to rebut the presumption that the incident had been caused by the

negligence of *American's* maintenance crews.[91] The finding of res ipsa loquitor, in this case, was

assisted by the court's consideration of *American* as a public carrier.[92] Under California law, defendants

who are public carriers are under a stricter burden to show that other factors caused the injury.[93] In most

cases, however, res ipsa loquitor is unsuccessful in establishing liability in IT actions.[94]

Negligence in computer programming was found in *Thompson v. San Antonio Merchant's*

Association.[95] Here, the Fifth Circuit affirmed the trial court's finding that the defendant had failed to

exercise reasonable care in programming their computers.[96] Further, the defendant negligently failed to

perform auditing procedures to insure accuracy.[97] As a result, the plaintiff's credit report was

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[89] 70 Cal. Rptr. 33 (C.A. 1st Dist. 1968).

[90] Id.

[91] Id. at 37.

[92] Id. at 36.

[93] Id.

[94] Fossett at 296.

[95] 682 F.2d 509 (5th Cir. 1982).

[96] Id. at 513.

[97] Id.

distributed to creditors with erroneous, damaging information caused by the defendant's computer system.[98]

In England, users have even been found negligent in their use of computers.[99] In this case, human error using a computer to process stop-order checks resulted in the payment of a check that should not have been paid.[100] While there was some question as to whether the cause of the error was due to the computer or the user, the court found that the mistake was ultimately a human error, as the clerk had a duty to check the computer for inaccuracy.[101]

Many IT actions may indeed relate to negligent use of computers. The arduous task for any court considering such actions will be to determine which of the three categories (hardware, software, or human error) is ultimately at fault. It seems likely that courts will apply comparative negligence in these cases, as many times all three categories (each with multiple parties) will be partially responsible. Thus, courts may be further challenged in apportioning the liability among several parties, especially in those jurisdictions that do not apply "pure" comparative negligence.

3.   Negligent Failure to Use Computers

The foundation for finding negligence in the failure to use computers is based on the court's reasoning in the 1932 case of the *T. J. Hooper*.[102] In that case, a tugboat owner was found negligent for not equipping his boat with a radio to monitor weather forecasts.[103] Judge Learned Hand, writing for the majority, applied his famous balancing formula to find that while use of radios on tugboats was not

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[98] Id. at 511.

[99] Fossett at 298. (citing Burnet v. Westminster Bank, Ltd., 3 Weekly LR 863 (CA)).

[100] Id.

[101] Id.

[102] 60 F.2d 737 (2nd Cir. 1932).

[103] Id. at 739.

common at the time, the defendant was nevertheless negligent because the relative cost of installing the radios was low when compared to the potential benefit.[104]

Judge Hand's reasoning was later applied in the 1974 case of *Helling v. Carey*[105] Here, the Washington Supreme Court found an ophthalmologist guilty of negligence for not administering a glaucoma test to a patient, even though such tests were not considered to be required according to the generally accepted medical standards of the time.[106] Again, the court relied on the potential benefit of the procedure balanced against its comparatively minimal expense.[107]

This reasoning has since been used in IT actions such as *Torres v. North American Van Lines, Inc.*[108] In this case, the plaintiff's husband was killed when a truck owned by the defendant crashed into the decedent's parked car while he sat inside.[109] The Arizona Court of Appeals held that the defendant was liable, since it owned a computerized data processing system that could have been used to monitor driver safety.[110] Had it done so, the court reasoned, the driver fatigue which caused the accident might well have been avoided.[111]

If Judge Hand's balancing formula is applied, it stands to reason that more cases like *Torres* will be litigated as computers and software continue to decline in price. Even if the balancing formula is not used, the continued computerization of our society makes a strong argument for the use of computers to be considered customary and necessary in many instances in the years to come.

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[104] Id.

[105] 83 Wash. 2d 514 (1974).

[106] Id.

[107] Id.

[108] 132 Ariz. 35, 658 P.2d 835 (1982).

[109] Id.

[110] Id. at 38.

[111] Id. at 39.

D.   Other Tortious Claims

The emergence of the Internet has spawned a new set of computer related claims in tort that do not rely on negligence theory. Additionally, advances in the technical ability of computer programmers and developers have resulted in IT actions regarding use of technology to interfere with the trade practices of rival firms.

1.   Tortious Interference

The software industry is particularly competitive as computers emerge in more and more homes and businesses. Because stakes are so high and the rewards are so great, it should almost be expected that some of these brilliant entrepreneurs will use their skills to gain an unfair technical advantage.

Courts have been unwilling, thus far, to find that a computer expert's detailed examination of a competitor's product for use in enhancing his own product constitutes tortious interference. In *DP-Tek, Inc. v. AT & T Global Information Solutions Company*,[112] the Tenth Circuit refused to find that NCR's (a subsidiary of AT & T) examination of one of DP-TEK's prototypes in an effort to outbid DP-TEK on a contract constituted tortious interference.[113] The court ruled that for tortious interference to be present, there must be independently actionable conduct on the part of the defendant.[114] In this instance, the court held that NCR's conduct did not rise to this level.[115]

New opportunities to consider IT actions as tortious interference arise almost daily. Certainly, "attacks" on corporate websites that render them effectively inoperative would qualify as activities that financially harm both the website owner as well the company serving as website host. As technology

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[112] 100 F.3d 828 (10th Cir. 1996).

[113] Id. at 836.

[114] Id.

[115] Id.

becomes more advanced, the ominous truth is that the use of technology to improperly interfere with global commerce will only become more sophisticated as well as more frequent.

2.   Defamation

As the Internet exploded on the scene, providers of interactive computer services were faced with a novel legal dilemma. Providers such as Prodigy and America On Line (AOL) that offered electronic venues for free speech (such as chat rooms) were apprehensive that providing such venues would create a liability for them in tort. To foster the unfettered development of the Internet, Congress passed the Communications Decency Act of 1996.[116] This act effectively immunized interactive computer service providers from civil liability for material displayed by the providers but created by others (their customers).[117]

The Act was tested, albeit fleetingly, in *Ben Ezra, Weinstein, and Company v. America Online Incorporated*.[118] Here, the court acted on behalf of AOL in an action where the plaintiff claimed that AOL had negligently permitted misinformation to be published regarding its publicly traded stock.[119] The court, in granting a stay on discovery, likened AOL's rights under the statute to those of governmental employees who perform discretionary functions.[120] While the court stopped short of granting AOL complete absolution in the matter, it clearly held that the burden in future proceedings would be on the plaintiff to prove that AOL's actions were outside the protective shield provided by the Act.[121]

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[116] 47 U.S.C. §§ 230(b)(1) and (2) (1996).

[117] Id.

[118] 1998 WL 896459 (D.N.M. 1998).

[119] Id. at *1.

[120] Id. at *3.

[121] Id.

The Internet has provided a venue for a new type of terrorist, the electronic sniper. These snipers can disseminate slanderous, libelous, and defamatory statements to millions of online viewers with the push of a button. Moreover, they can do so anonymously with their identities hidden from even law enforcement personnel. The courts and the legislature are faced with the unenviable task of trying to protect the victims of such activity without infringing on First Amendment rights. While the Communications Decency Act is a good start, it is not the complete solution. It is likely that actions in tort will continue to manifest themselves against Internet Service Providers (ISPs) that do not exercise reasonable care in monitoring the material broadcast by their web servers.

3.   Trespass to Chattels

The popularity of email in today's electronic world has created its own progeny of legal issues. Not only are security and privacy issues being debated, but a novel tortious claim has arisen as well. The proliferation of "spam" (unauthorized email solicitations) has created numerous problems for Internet Service Providers (ISPs). Not only are these messages bothersome for users, they are costly to ISPs as well since these message clutter the electronic airwaves and are stored on servers throughout the world.

This issue was recently addressed by the Eastern District of Virginia in *America Online, Inc. v. IMS*.[122] In this action, AOL sued IMS for trespass to chattels for sending over 60 million unauthorized emails to its subscribers after being notified that such transmissions were unauthorized.[123] In granting AOL's motion for summary judgment, the court held that "spamming" activity such as that perpetrated by IMS diluted the distinctive quality of AOL's trademark.[124]

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[122] 24 F. Supp.2d 548 (1998).

[123] Id.

[124] Id. at 552.

Trespass to chattels is a novel approach to dealing with cyber-terrorism as well as "spam". Certainly, this tort can be applied broadly to all sorts of actions regarding the Internet. The problem lies in the assessment of damages. In most forms of Internet damage, the damage itself is typically that of inconvenience. Seldom is equipment destroyed and only rarely is financial loss incurred. Thus, a proper cause of action may exist, but with damages and penalties so slight that legal action is ineffective in deterring such activity.

E.   Standardizing Tort Application to
Information Technology – A Proposal

The legal community should take steps to formalize its approach regarding the relationship between IT and tort. The de facto treatment of most IT actions as contractual falls short of providing due process and justice in many cases, particularly involving third parties. In many cases, damage limitations that restrict recovery merely to the cost of the item purchased are woefully inadequate, especially when sensitive data is destroyed. Finally, legitimate business needs are ignored when computer consultants passing themselves as experts are immune from punitive damages for their actions that would be considered in other professions to be malpractice.

Alternatively, there are instances where an IT action should clearly be considered as contractual rather than tortious. The following four-part test should be administered to determine whether an action should be decided in tort or in contract. If the plaintiff answers "no" to any one of the four questions, the IT action is likely an action in tort, rather than in contract.

1. Contract vs. Tort – A Four Part Test

(1) Is plaintiff in privity of contract with defendant? Most of the time, the answer to this question will be simple to determine. If the plaintiff has purchased the IT item, there will typically be privity, even if the item is merely a component of a larger system. There are times, however, when the answer is not so clear. Certain states extend the concept of privity to include not only the buyer of an IT product, but also those foreseeably affected by its use. In these jurisdictions, the preponderance of IT actions will be in contract, not in tort.

(2) Did plaintiff suffer purely economic injury as a result of the IT activity? Since economic loss doctrine does not apply to physical injuries, IT actions resulting in physical harm must be considered in tort rather than in contract.

(3) Are exculpatory clauses related to the transaction consistent with fairness and public policy? Exculpatory clauses that are considered unconscionable render the contract voidable, thus destroying privity and making action in tort a viable alternative.

(4) Are the limited remedies available in a contractual action adequate? If the conduct of the defendant has been so outrageous that the damages available in contract would be insufficient, the action may be tortious rather than contractual.

2. Classifying Information Technology Torts

Once it has been determined that an action is best litigated as an action in tort, the next challenge is to determine which tort to apply, since many cases, especially complex ones, will be able to assert multiple tort theories. The following set of questions, when applied to potential IT causes of action, will help to determine which tort(s) to allege in an IT action.

Did the IT component exercise substantial control over an abnormally dangerous activity? If so, strict liability might be applicable. The burden for strict liability will be an appropriately high

standard. First, the IT component must exercise substantial control. Thus, a computer system that

merely monitors a dangerous activity (such as radiation measurement) may not meet this standard if

there are other safeguards available that can be used as a failsafe to protect against computer error.

Certainly, a risk/benefit analysis in such an instance would show that expense would not likely be an

obstacle in such an ultrahazardous activity. Moreover, the possibility of human error would have to be

completely eliminated for an IT component to be subject to strict liability.

Was the failure due exclusively to human error? If so, negligence is proper. It will be rare

that any IT failure will be attributed exclusively to human error. Failure of an IT system user to properly

operate the system could be caused by faulty instructions, inadequate documentation, or system

malfunctions that leave no evidence after the fact. A cause for negligence against a user that does not

include action against the vendor(s) would only be proper when the user was clearly experienced in the

operation of the software and had a history of using the system properly under similar circumstances.

Did the product or service provided by a vendor fail? If a failure did occur, the purchaser

must then ask a series of questions to determine which tort is most applicable:

Did the vendor fraudulently misrepresent the capabilities of the product? If the

plaintiff can show that the defendant knowingly made false or reckless representations of

material fact that were relied upon by the plaintiff, then a cause of action for intentional fraud

likely exists.

Did the vendor merely fail to exercise reasonable care or competence in

representing the capabilities of the product? If so, a cause of action for negligent

misrepresentation may exist. Damages under this cause of action are subject to the economic

loss doctrine and minor misrepresentations are typically not actionable. Generally, innocent

misrepresentations are not actionable unless the subject matter is substantially material to the purchase of the product.

Can the hardware, software, or user components of the system be absolved of any liability? If a combination of these components are found liable, a court would typically apply comparative negligence theory to determine damages. Thus, an action for negligence may involve numerous defendants, as vendors may choose to include component manufacturers, dealers, and consultants in an effort to diminish their financial exposure. Market factors may help in this regard, however, as vendors will be reluctant to alienate business partners by including them in such litigation.

3. Computer Malpractice Revisited

Most importantly, the Information Revolution has progressed to the point where the courts must reconsider the viability of the tort of computer malpractice. The need for revisiting the concept is based on three developments of the last several years that make computer malpractice more necessary and applicable: (1) the exponential growth of technology in all sectors of society; (2) the growing reliance on computer technicians as professionals; and (3) the evolution of certification programs and certifications that are generally recognized as industry standards.

Computers have integrated their way into every aspect of our lives in a way exceeding even wildly optimistic projections. Integration of radio, telephones, television, and even indoor plumbing into the lives of the typical family happened far more slowly and with less dramatic impact than the emergence of the computer as an integral part of our daily routine. This surge of computer use has made every citizen more dependent on computers than was even imaginable just 10 years ago. This reliance on the IT industry rivals only our reliance on medicine and the law in terms of its importance in our

daily lives. Because the industry is so important, we must embrace the concept of computer malpractice as a way to enable the courts to insure the integrity of the industry.

Consumers have already begun to rely on computer professionals as they do physicians and attorneys. Computer technicians make "house calls" to repair machines or alter configurations while experts dial in to computers via telephone to effect similar modifications. Companies who send sales and accounting staff home for the evening keep computer personnel on site or on call 24 hours per day to insure smooth operation of IT platforms. This reliance can be costly, however, as a technician's negligence can inflict damage and inconvenience twenty or thirty times more costly than his annual salary.

Lastly, computer professionals have begun to advertise themselves as being "Microsoft Certified Professionals". Microsoft Corporation's dominance in the industry, combined with a lack of alternative certification programs, has encouraged industry to place tremendous significance on these certifications. In the absence of a level of understanding sufficient to decipher today's technology, leaders of industry have begun to rely on a technician's certification as a measure of his skill and a substitute for informed consent regarding IT decisions.

Recognition of all certified computer technicians as professionals would be too aggressive, however. Instead, the tort of computer malpractice should be applied only to computer consultants who advertised or used their certification in a way to encourage reliance on their skills as a professional. Thus, a consultant could attain certification for educational reasons without obligating himself to the higher standards (and potential for damages) of a computer professional. He or she would only be held to a higher standard of care if he used his certification in a way that encouraged the public to rely on him in such a fashion.

IV. Conclusion

The tests and questions outlined above are merely a starting point. A method of treatment considering IT actions as both matters in contract and in tort is manageable only if courts apply tests like the ones outlined above so that a clear roadmap is provided for plaintiffs and their attorneys. The recognition of the tort of computer malpractice would result in greater security for industry and a greater degree of respect and recognition for computer professionals. Moreover, it would reassure society that certified computer professionals will be subject to a professional standard of care in their work, reducing the risk of computer catastrophe in the Y2K-like dilemmas of the new millennium.

One thing is certain, however. The rapidly evolving discipline of Information Technology will create unforeseen legal problems as quickly as it renders its silicon processors obsolete. Nevertheless, the legal community can only hope to stay current by beginning the formidable task of catching up to technology now.