LST@Stanford

Dear Friends of the Stanford Program in Law, Science & Technology,

Welcome to this issue of LST@ Stanford. Throughout the past year, LST and its constituent centers hosted numerous cutting-edge events continuing Stanford Law School's dominant role as a hub for discourse on current issues in technology law. Our website [http://lst.stanford.edu] provides a complete list of our previous programs in our event library, which includes video and audio recordings of our various events.

In the past year, we have dedicated significant energy to three new multidisciplinary and international initiatives: The Transatlantic Technology Law Forum (TTLF), CodeX: The Stanford Center for Computers and Law, and the Stanford IP Litigation Clearinghouse. The Transatlantic Technology Law Forum is a joint international venture between LST and the University of Vienna School of Law in Austria focusing on high-quality education and policy-oriented research on EU and US technology law covering IP law, IT law and biotechnology law as well as nanotechnology law and space law. TTLF's website features a comprehensive collection of links to EU and US technology laws [http://ttlf.stanford.edu]. CodeX: The Stanford Center for Computers and Law is a multidisciplinary laboratory led by LST in concert with Stanford computer scientists and other affiliates [http://codex.stanford.edu]. The Stanford Intellectual Property Litigation Clearinghouse will address the critical need for a comprehensive, online resource for scholars, policymakers, industry, lawyers, and litigation support firms in the field intellectual property litigation.

These projects are explained in further detail on pages 2-4 and 8-9 of this issue of LST@Stanford.

In August of 2006, we also welcomed our fifth class of students in the LLM program in Law, Science & Technology. These students come to Stanford Law School from around the world to focus for one academic year on the study of cutting-edge issues at the intersection of law, science, and technology. They are selected from an application pool of some of the most talented young lawyers in the world, reflecting a wide array of experience, interests and professional specializations.

We are aided greatly in our work by the annual support of our LST Venture Circle members (Cornerstone Research, Heller Ehrman, Intel, Oracle, Orrick Herrington & Sutcliffe, and Qualcomm), and our LST Program Partners and Associates (Cooley Godward, Fenwick & West LLP, Microsoft, White & Case, and O'Melveny & Myers). Their generous support places LST on a much stronger footing to carry on its exciting work.

I wish you an inspired reading. Please sign up for our mailing list at http://lst.stanford.edu. Thank you very much for supporting the Stanford Law School Program in Law, Science & Technology. Very truly yours,

Roland Vogl

Executive Director,
Stanford Program in Law, Science & Technology

Transatlantic Technology Law Forum (TTLF)

The European Union and the United States, the world's leaders in the fields of innovation and high technology, share a common set of values based on a commitment to democracy, human rights, market economics, and the rule of law. But EU and US approaches to many technology related issues in law and policy differ significantly, causing barriers to trade across the Atlantic and legal uncertainty within the Transatlantic Marketplace, which comprises about 450 million people in the EU and 300 million people in the US.

Funded by a generous grant from the Microsoft Corporation, the Transatlantic Technology Law Forum (TTLF) [http://ttlf.stanford.edu] aims to promote a balanced approach to today's and future transatlantic tech law issues and to focus scholarly attention on these issues by involving academics, businesspeople, government officials, legal professionals, legislators, policy makers, representatives of international organizations, scholars, students and the public at large from both sides of the Atlantic. The Transatlantic Technology Law Forum's institutional framework is co-sponsored and operated by the Stanford Program in Law, Science & Technology and the University of Vienna School of Law, which established TTLF jointly in a transatlantic academic partnership. The Transatlantic Technology Law Forum serves as a coordinating and working platform for a series of institutionally open transatlantic tech law projects. It is the TTLF's objective to raise professional understanding and public awareness of transatlantic challenges in the field of law, science and technology, as well as to support policy-oriented research on transatlantic issues in the field. TTLF focuses on the following five priority areas: biotechnology law, information technology law, intellectual property law, nanotechnology law, space law. A comprehensive collection of links to legislation as well as policy news in this space both on the US and the EU, can be found on our website at http://ttlf.stanford.edu.

To learn more about TTLF, please visit our website at http://ttlf.stanford.edu or contact Roland Vogl, co-director of TTLF, at rvogl@law.stanford.edu or 650 723-8532.

CodeX

Frontiers of Legal Research: How Computational Law Could Empower Ordinary Citizens and Help Non-Experts Navigate a Complex Regulatory Environment

CodeX, also known as The Stanford Center for Computers and Law, is a multidisciplinary laboratory operated by Stanford University in association with affiliated organizations from industry, government, and academia. The staff of the Center includes a core of full-time employees, together with faculty and students from Stanford and professionals from affiliated organizations.

The primary mission of the Center is to explore ways in which information technology can be used to enhance the quality and efficiency of our legal system while decreasing its cost. Its goal is "legal technology" that empowers all parties in our legal system, not the legal profession per se. Such technology should help affected individuals find, understand, and comply with regulations; it should help enforcement organizations monitor and/or enforce compliance; and it should help regulatory bodies analyze proposed regulations for cost, overlap, inconsistency, etc.

CodeX's approach to fulfilling this mission is based on Computational Law, an innovative approach to legal informatics based on the explicit representation of laws and regulations in computable form. The Center's work in this area includes theoretical research on representations of legal information, the creation of technology for processing and utilizing information expressed within these representations, and the development of legal structures for ratifying and exploiting such technology. Initial applications include systems for helping individuals navigate contractual regimes and administrative procedures, within relatively discrete e-commerce and governmental domains.

Recently, LST@Stanford conducted an interview with Joshua Walker, the Executive Director of CodeX. We hope you will find Mr. Walker's vision of the future of computer science and law as interesting as we did. *(continued next page)*

LST@Stanford: *What are the difficulties in developing a set of logical representations of the law? (I assume there are practical difficulties in compiling and sorting vast reams of legal data into a digital corpus as well as semantic difficulties in ensuring that the legal representations you come up with accurately reflect the complex analogical thought that has gone into the development of various legal regimes.)*

Josh Walker: The difficulties in developing logical representations of the law are myriad and profound. They are, nonetheless, tractable—particularly when the factual contexts themselves are somewhat formal / computationally mediated. We have made a substantial amount of progress on the representation front over the last few years.

In fact, to take the practical view, all architectures for Internet transactions must, in some respect, include logical models of the law, or embed noncompliance. From Internet protocols, to health care, to e-commerce, to privacy controls and Sarbanes-Oxley compliance, you see a lot of real-world implementation of this sort of thing. The problem is that a lot of existing representations are ad hoc—lacking a sound theoretical basis. As yet, there is no common language to standardize and communicate such legal architectures.

More frequently, there is no compliance at all. Instead, there are cataracts of Napster-esque litigations, in which ordinary people are most at risk.

I think, to be successful at logically expressing legal restrictions, one must start from a place of great humility and respect for the law. In this regard, there are several advantages to our approach:

(1) Mapping Ambiguity. One may formally represent a set of unrepresentable things. Computational Law does not seek to resolve inconsistencies and ambiguities in the law. (That is what judges do.) Rather, we seek to map them. More specifically, we want to help ordinary users: (i) understand when they are entering a legal grey zone; or (ii) avoid it entirely. This is a huge difference between CodeX and past efforts to apply "artificial intelligence" to legal domains.

Joshua Walker, Executive Director, CodeX

Director Spotlight
An Interview with Joshua Walker

Joshua Walker serves as Executive Director of CodeX and as Director of the Stanford Intellectual Property Litigation Clearinghouse. Mr. Walker received his law degree from the University of Chicago and his B.A., in Special Concentrations, from Harvard University. He has over a decade of experience in developing and implementing novel technology applications in legal domains.

A historical analogue demonstrates the utility of such representation: When early mapmakers lacked comprehensive nautical data on a given sea, they typically inserted a sea monster. The icon did two things. First, it served as a warning to seafarers generally: Stay away unless you want to expose yourself to great risk (fantastical or otherwise).

Second, it attracted explorers – those confident in the skills of their watch, those looking to expand the boundaries of the known world. Just so, if deductive reasoning cannot provide a citizen with a compliance determination for a standard action on the Internet, the system should output: (i) avoid the action; or (ii) get a lawyer.

(2) Filtering; A Cybernetic Approach. By formally distinguishing grey areas from paths of clear compliance, we can help people determine when they need an attorney, and when they do not. The more restrictive compliance determination would not allow the user to explore boundary areas of the law, but it could get the job done eighty percent of the time for eighty percent of the users—and cheaply, too. In Jewish law, we might call this Seyag La-Torah (a fence around the law). This refers to rabbinic injunctions enacted to safeguard the observance of primary commandments, where the former are broader, and more mechanically applied, than the latter. There is, to take a related case, a biblical prohibition on writing on the Sabbath. To guard against inadvertent breach of the writing prohibition, Talmudic authorities prohibited the touching of writing instruments on Shabbat. Why is there not a system online that says "don't touch that" when an online system detects positive illegality? Why can't people set "clickwrap" policy setting the way they set Internet browser privacy settings—such that invidious third party contract terms the user actually cares about are flagged and rejected. Why are mala in se not architected out of the system from the beginning? This does not mean that people should avoid the fullest exercise of their rights; it just means that they should be aware when they are entering a boundary area of the law (and, hopefully, enjoy the advice of counsel while doing so). The same is true of civil disobedience: It is only meaningful if one recognizes, in situ, the bad law one is transgressing.

Law schools tend to select away from mundane legal issues, into difficult, close questions. This bias can be explained by the need to challenge smart students, and expand the frontiers of legal understanding. However, day-to-day legal practice contains a lot of mundane, highly formal operations which can and

Intellectual Property Litigation Clearinghouse

The IP Litigation Clearinghouse which will be modeled on the Stanford Securities Class Action Clearinghouse (SCAC) will be housed within the Program in Law, Science & Technology (LST). The SCAC is a powerful research tool that provides a detailed look into the workings of federal fraud class action litigation, and has transformed the way investors, policymakers, scholars, judges, lawyers and the media access information about securities class actions.

Nearly twenty years ago, George Priest lamented the "almost complete absence" of empirical facts – as opposed to speculation – about intellectual property, and claimed that economists could tell lawyers nothing about the way intellectual property actually worked. In the past twenty years, a wealth of empirical scholarship has begun to ilzluminate the nature of the patent system. However, very little of that scholarship has focused on patent litigation, and virtually none on copyright and trademark litigation. In large part, this is because there is no reliable, comprehensive source of data or trend analysis in the area of intellectual property litigation.

With the explosion of new technologies such as the Internet and digital media, the rise in intellectual property related litigation over patent, copyright and trademark infringement, trade secret theft, and breach of technology licensing agreements has also dramatically increased. The regulatory landscape in the area of intellectual property has also become more complicated. Businesses now face complex litigation in which issues such as loss causation, lost profits, prejudgment interest, and reasonable royalties must be assessed. Yet, there are virtually no reliable resources based upon sound empirical data and analysis by which the value of intellectual property can be accurately and consistently measured by and across industries.

The IP Litigation Clearinghouse which will be modeled on the hugely successful Stanford Securities Class Action Clearinghouse (SCAC) [http://securities.stanford.edu] will be housed within the Program in Law, Science & Technology (LST). The SCAC is a powerful research tool that provides a detailed look into the workings of federal fraud class action litigation, and has transformed the way investors, policymakers, scholars, judges, lawyers and the media access information about securities class actions. Similarly, the goal for the IP Litigation Clearinghouse is to collect detailed information about every intellectual property case filed in the federal courts. Phase I of the database will focus on federal patent litigation. The clearinghouse will collect information about lawsuits when they are filed, and cross-reference them with information about the patent or trademark (if appropriate), and with information about the industry characteristics of the plaintiffs and defendants. The clearinghouse will then track the lawsuits and add information about court opinions, judgments, and settlements where available.

The resulting database will be the first comprehensive source for information about all IP law suits – not just the small subset that make the news or written opinions. The clearinghouse will digitize and link the full text of complaints, motions, dockets, judicial opinions and major IP litigation. An additional goal of the clearinghouse project is to calibrate the public and private source documents on the terms and conditions of both IP settlements and licensing agreements by industry. The clearinghouse will provide summaries, industry indices, and trend analyses with a full-text search engine – detailed and timely information that cannot be found elsewhere in the public domain.

Work on the IPLC has begun in earnest thanks to the generous support of our first round of investors – Cornerstone Research, Heller Ehrman, Intel, Oracle, Orrick Herrington & Sutcliffe, and Qualcomm. For more information about the IPLC please contact, Josh Walker, the IPLC director, at jwalker@law.stanford.edu or 650 723-9305.

The Stanford Law School Conference on Intellectual Property Law and Biosciences

On September 15, 2006 the Stanford Program in Law, Science & Technology in collaboration with Wilmer Cutler Pickering Hale and Dorr LLP, a leading international law firm and the newest member of the LST affiliate group, hosted a conference on Intellectual Property Law and Biosciences.

The goal of the conference was to address the many tough questions currently facing the U.S. patent system. The event which brought many of the nation's leading experts on IP law and policy to Stanford attracted a crowd of 150 participants. The discussions that evolved throughout the day provided a lively exchange of ideas about topics including patent litigation in the biosciences, patent eligibility post-Metabolite, Hatch Waxman and ANDA challenges by generics companies, and Reach-through royalties.

The first panel which featured the Hon. Susan Illston, Hon. Elizabeth LaPorte, Hon. Pauline Newman, and Hon. Ronald M. Whyte, offered a unique view from the bench. The panel questioned the usefulness of the presumption of validity of the patents involved in biotech patent cases and offered an interesting comparison between the U.S. system and the rules adopted in other countries.

The second and the third panel addressed the limits of patent rights and the antitrust challenges which were brought against settlements entered by brand and generic pharmaceutical companies. One of the conclusions of the panels was that patent rights can indeed as they reach through to downstream products, disturb the equilibrium of incentives to produce new inventions and incentives to develop subsequent related products.

The final panel focused on the increased interest the Supreme Court has taken in patent cases in recent years particularly with regard to the question of patentability of certain discoveries in the biosciences and the issue of injunctions granted in patent cases.

As one of the speakers remarked, the evolution of patent law seems quite uncertain in the light of the many open question elicited in the course of our conference and, two years from now, we might be facing a system substantially different from the one that we know today. An audiocapture of this event can be found in our event archive at http://lst.stanford.edu.

The Stanford Law School Event on Internet Advertising and Litigating "Click Fraud" Cases

On November13, 2006 the Stanford Program in Law, Science & Technology hosted an evening panel entitled "Internet Advertising and Litigating 'Click Fraud' Cases." The purpose of this event was to address the many questions surrounding internet advertising and click-fraud.

Search engines derive virtually all their income by selling ads that people actually want to read. Under this system, advertisers pay only when a viewer clicks on the ad link. Some advertisers, however, complain that competitors and affiliates engage in "click fraud" to drive up their rivals' costs. As a consequence, a number of class actions have been filed.

A group of experts from the world of practice, business, government and academia offered different perspectives and a thoughtful discussion on current trends, cases, and emerging issues in internet adverstising. The panel which was moderated by Prof. Mark Lemley featured Laura Sullivan, an attorney in the FTC's Division of Advertising Practices, Daralyn Durie, a partner at Keker & Van Nest, Shuman Ghosmajumder, a product manager for trust and safety at Google, and Prof. Eric Goldman at Santa Clara University School of Law. For an audio-capture of the event please visit our event archive at http://lst.stanford.edu.

Dr. Mi-Kyung Kim

Dr. Mi-Kyung Kim has been a fellow at the CLB since August 2005. Dr. Kim received her JD from the University of Washington School of Law in 2005 after having practiced medicine as a pathologist for more than 15 years in Seoul, Korea. She earned her M.D., and Ph.D. from Seoul National University.

Dr. Kim took a sabbatical at Stanford Medical School in 1996-1997. Having experienced Stanford's unique research environment, Kim understood that the CLB fellowship would provide her with an excellent environment to study some of the hard issues that at the intersection of law and medicine that she had long wanted to address. Knowing that Prof. Greely has dedicated much of his research to some of the most pressing issues in bioethics, she knew that would find a very fertile environment for her research within the CLB.

At this point, Dr. Kim is doing both legal and medical research at the CLB and Stanford Medical School. In her current conversations with various institutions in South Korea, she finds it particularly challenging to convince decision makers to recognize the need for systematic and multidisciplinary study of ethical questions surrounding new discoveries in the biosciences. However, she is also hopeful as Korea has shown its capability to transform quickly once a need is recognized. Dr. Kim would like help Korea address the challenges it faces in connection with the many societal questions raised by the discoveries in the biosciences.

Dr. Jaime S. King

Jaime S. King comes to Stanford after completing four years of a Ph.D. in Health Policy with a concentration in Ethics at Harvard University. Her research focuses on issues at the intersection of law, medicine, ethics and policy, specifically those instances when a law or public policy alters an individual's ability to make personal medical decisions. Jaime plans to complete her dissertation this spring.

Prior to pursuing her degree in Health Policy, Jaime received a B.A. in Psychology from Dartmouth College and a J.D. from Emory

CLB Fellows

The People

The Stanford Center for Law and Biosciences is privileged to have three outstanding fellows dedicating their research to various cutting-edge issues at the intersection of law and the biosciences. We are proud to present to you Mikyung Kim who continues her fellowship and our new fellows Jaime King and Simon Wakeman.

We would also like to thank last year's fellow Colleen Chien for her great work and wish her the best of luck in her next endeavors.

University. During college, she took a wide variety of courses in biology and chemistry, but it was not until law school that she truly found her passion. Following a year as an associate in both the intellectual property and environmental groups of an Atlanta-based law firm, Jaime set out to study health policy and biotechnology from a more interdisciplinary perspective.

While pursuing her Ph.D., Jaime had the opportunity to examine the intersection of law, medicine, ethics and policy both through academic coursework and in real world settings. However, by far, Jaime's biggest joy at Harvard resulted from the opportunities she had to serve as a teaching fellow and after her fellowship at Stanford, she hopes to continue to teach in the area of healthcare, biotechnology and the law by pursuing a career in legal academia.

While she is here at Stanford, Ms. King is very excited to meet and work with students and faculty interested in issues at the intersection of law, medicine, ethics and policy. Her decision to come to Stanford this year was due in large part to the opportunity to work with Hank Greely and a desire to

return to an academic legal environment. In addition to her current doctoral research, she is also interested in mental health law, psychiatric and behavioral genetics, biotechnology patents and licensing, reproductive technology and privacy rights, and the ethical, social and legal implications of new technologies. Stanford's Law, Science and Technology Program offers an unparalleled opportunity to explore a wide range of these issues with some of the world's leading experts. Ms. King also hopes to contribute to the SLS community by working with the other Law and Biosciences fellows and interested students from around the university to establish a Journal Club relating to Health Policy, Biotechnology and the Law. She has an open door policy and invites you to come visit her in the Gould Center Room 204 or to contact her by email at jsking@law.stanford.edu.

Jaime just recently got married and lives with her husband, James, and their dog, Cosi, in San Francisco.

Dr. Simon Wakeman

Simon Wakeman comes to Stanford seeking to understand the way that firms use contracts and intellectual property in the commercialization of biotechnology. He trained as lawyer at the Otago University Law School in New Zealand, but has spent the past few years working on a Ph.D. at UC Berkeley in the economics of business organization and strategy.

After being buried deep in biotech alliance and patent data, he is excited by the opportunities within the LST program to converse with legal practitioners and academics about these issues, as well as to sharpen his understanding of the law in this area. During his fellowship he is planning to focus specifically on the interaction between a firm's decision to license its technology and the issue of patents on that technology. He is preparing for an academic career at the intersection of law and business, and believes that the interdisciplinary environment at Stanford Law School is an excellent place to begin that career.

When he is not buried deep in data or debating ideas with his colleagues, he enjoys running, hiking, and backcountry skiing both in California or back home in New Zealand.

David Levine

David comes to Stanford to pursue his research interests in the operation of intellectual property law at the intersection of technology and public life, as well as the impact of copyright law in the arts. Dave's article, "Secrecy and Unaccountability: Trade Secrets in Our Public Infrastructure," will be published in Volume 59 of the Florida Law Review (January 2007), and he hosts a talk show on KZSU-FM (Stanford), 90.1 on the dial, entitled "Hearsay Culture" where he interviews people involved with technology. The show airs from 5 to 6 PM PST on Wednesdays, and is available by live stream and by iTunes podcast.

Dave also has a fully functional Commodore 64 in his office at SLS, and invites all who are interested to stop by and play "Summer Games" and "Archon."

After earning a bachelor of science degree from Cornell University's New York State School of Industrial and Labor Relations, Dave was the Legislative Aide for the Hon. Sandy Galef, New York State Assembly-woman; additionally, he was the volunteer Field Director for the New York State chapter of the Concord Coalition, with which he remains involved. During law school, Dave was a summer extern for the Hon. Adlai S. Hardin, United States Bankruptcy Judge in the Southern District of New York. Upon graduating from Case Western Reserve University School of Law, Dave practiced law in Manhattan as an associate in the litigation departments of Windels Marx Lane & Mittendorf LLP (formerly Lane & Mittendorf LLP) and thereafter Pryor Cashman Sherman & Flynn LLP. At Pryor Cashman, Dave worked on a variety of cases in the intellectual property and technology litigation fields for several entertainment and fashion industry clients.

Most recently, Dave was an Assistant Corporation Counsel for the New York City Law Department, Office of the Corporation Counsel.

CIS Fellows

The Stanford Center for Internet and Society is honored to have two outstanding fellows whose researches cover various issues at the intersection of intellectual property law and technology. We are pleased to introduce to you David Levine and David Olson.

David Olson

David Olson has been a resident fellow with the Center for Internet and Society, part of the Law Science and Technology Program, since August 2005. David spends half his time working on CIS projects including copyright fair use litigation, and the other half of the time he researches and writes in the area of patent law. He is currently very interested in the scope of patentable subject matter and questions of claim scope. His most recent paper is entitled Patentable Subject Matter: The Problem of the Absent Gatekeeper. The paper is available online at: http://ssrn.com/abstract=933167. Along with a number of patent projects that David has planned for the future, David is working on a copyright article advocating a copyright misuse test grounded in free speech interests.

David graduated from Harvard Law School in 2000 and then clerked for Judge Jerry Smith on the Federal Court of Appeals for the Fifth Circuit. He then practiced patent litigation for four years with Kirkland & Ellis LLP in New York and then San Francisco.

David says that the strong program in technology law, and the opportunity to work with Larry Lessig and Mark Lemley drew him to this fellowship. "There are a number of good fellowships out there," David says, "but the quality of the work being done by the Law Science and Technology Program and CIS, including the great conferences and speakers that both bring to Stanford, and the privilege of working with Larry Lessig, and on the patent side, Mark Lemley, really made this a fellowship that was too exciting to pass up."

When he's not busy reading patent cases, David enjoys extreme sports like playing Candyland with his 6-year-old son and 4-year-old daughter while trying to keep his two-year-old daughter from enacting a scene from Godzilla on the game board. David also enjoys skiing and whitewater kayaking, although not at the same time.

Josh Walker

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should be automated. In short, we should give that which is mechanical to machines, and focus individualized professional legal analysis on questions which actually require it. At present, attorneys handle the most mechanical of legal operations, as well as more cerebral ones. This leads to inefficiency, waste, and the further intellectual bifurcation of the law from the citizenry to whom it applies. Why train lawyers to be innovators only to let them be condemned to highly mundane operations for the rest of their professional lives? By taking a hybrid approach, and integrating bibliophiles with mathematicians, questions and methods requiring each may be routed more efficiently.

(3) Deductive, Not Analogical Reasoning.
CodeX is not attempting to create systems that can do analogical reasoning. A very simple example of the type of thing we are trying to do is the U.S. Government's Do Not Call Registry. If you truthfully and correctly enter a number into the Do Not Call registry, your submission automatically creates additional legal exclusions on that number. We know that by deduction. Compliance by marketing organizations can also be automated, to some extent. The Computational Law tools we have right now may enable far more sophisticated transactions, further enable the exercise of legal rights, further empower citizens.

LST@stanford: *What problems in the American legal system does CodeX seek to address? Who would be the primary beneficiaries of such a program? Are there particular areas such as contract law that you have targeted as ripe for computability?*

Josh Walker: The Center's mission is "legal empowerment through information technology." We hope to empower ordinary citizens. Our most immediate challenge is actually not one of representation, but of selection. The challenge is to choose domains, or projects which are technically challenging but still tractable and, most importantly, socially beneficial. The aim of CodeX is not to maximize legal paper citation rankings (which may help no one outside the academy). The ultimate goal is to maximize legal/social

utility; and our research is merely a means to that end.

Contract Law is a prime area for Computational Law experiments because there is greater relative control over the legal regime itself—and the degree to which such regime is formalized a priori.

For example, our first project is called IPX. It is an intelligent intellectual property exchange which was the brainchild of your own Roland Vogl. A literal marketplace of (instantiated) ideas, IPX would allow "citizen publishers" to enter into content related contracts at minimal to zero legal transactional cost—whether amongst themselves, with distributors/marketers, or with major content owners.

CALC, a second project lead by our fellow Harry Surden (SLS '05), explores building code compliance automation. With direct funding from Stanford's Center for Integrated Facility Engineering, Harry's project will explore ways of ameliorating legal information problems of building design professionals by exploiting existing software systems.

Our third project is called Charitopia. A kind of "eBay for charities", the Charitopia web site matches donors of equipment and supplies with charities able to use or resell those items. In addition to helping donors and charities find each other, Charitopia automates certain tax compliance and bookkeeping operations.

All three projects employ a Computational Law approach. Thus, particularly with respect to marketplace type projects, dual economies of scale may be achieved: (1) an additional user may be added for approximately zero marginal cost (or net positive cost, given sufficient network externalities); and (2) the general software components may be applied to additional legal domains with minimal modification.

LST@Stanford: *Resistance and Objections (Do you anticipate much resistance in the legal community or elsewhere to a program that would attempt to identify/resolve inconsistencies in the application of various laws?)*

Josh Walker: One objection has to do with an anticipated loss of livelihood. The reaction

we have received from some lawyers is not skepticism, but fear. They are fearful that a successful computational architecture will reduce the dependence of people on lawyers.

They are correct . . . but wrong. Such architectures will and should legally empower ordinary people. However, what they may also do is allow even more complex legal transactions (requiring more advanced and necessarily human legal advice), as well as expand the possibilities for the profession. We will become less scriveners and more logical architects, explorers, etc.

There is also skepticism on the feasibility front. However, as I mentioned previously, we can point to a lot of existing (if ad hoc) implementations. Some of the technical skepticism is also based in an under-appreciation of the flexibility and nuance of computer science tools. In the end, the best answer to technical skepticism is technical success.

Moreover, there is a philosophical objection to the very idea of what we are trying to do. One common argument is that the law is endemically and wholly resistant to formal reasoning.

This argument is provably false. For example, either something is a pharmaceutical or it is not. There may be close cases, we may not know the answer for all substances (without judicial or executive pronouncement) but still, for most cases, the characterization is binary ("yes" or "no"). Similarly, one is either subject to personal jurisdiction in a given forum or one is not. One is legally married or one is not.

Such binary legal characterizations may be formally represented. Moreover, when the relevant facts themselves have been formalized—as in certain online contexts—legal issues wholly dependent on such facts may be resolved. Again, a simple example is the U.S. Government's online Do Not Call Registry. There is no intrinsic impediment in the law to the further and more sophisticated enablement of such socially empowering tools.

In sum, there are formal elements to legal rules and standards, which may, in subsets of

Josh Walker

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cases, make the law reasonably predictable. Due process requires this. Even if Holmes was right, and the law is "a bad man," it is not a crazy man. It cannot be that the law is entirely illogical.

LST@Stanford: *How does a computational law program represent evolving legal areas such as biotechnology patent law and e-commerce? It's been said that the laws in each of these areas tend to lag several years behind technological developments. Both these and other legal fields of concern to the LST program are constantly described as being in a state of flux. How does a compu-tational representation adapt to ongoing changes in the law? Does your program have any aspirations in bringing the law up to the speed that new technology sometimes demands? [Law and Technology in Flux]*

Josh Walker: Judge Easterbrook once compared "Cyberlaw" to "Horselaw" (the point being that a new technology does not necessitate a new legal concept, but merely the application of an existing legal concept to a new factual category). I like to think of CodeX, not so much as "horselaw," but as the application of horsepower to the law.

The problem you identified is as follows: The rate of technological change is increasing but the legal system is as informationally and decisionally inefficient as ever. This systemic problem remains regardless of the individual efficiency and innovativeness of a given judge. Moreover, increasingly complex technologies (as well as the increasing number of transactions, and numerosity of parties and jurisdictions that the Internet allows) demand commensurately nuanced legal analyses. Both trends exacerbate information problems in the law.

The answer, and the real reason Easterbrook was wrong, is that the law itself is informa-tion. Existing information tools can be used to make the law more efficient, and the instant facts clearer.

I believe the above trends make the effort to apply computational tools to legal contexts not a curio, but a necessity. Thus, CodeX.

LST@Stanford: *Do you plan to collaborate*

with other Stanford departments and academic law programs such as the LST program as you develop this project? [Collaboration]

Josh Walker: Absolutely. We hope to develop this into a Stanford-wide program. Law School faculty have already made major contributions to our research, along with Computer Science faculty and students. (Our name was actually Roland Vogl's idea.)

Indeed, not one of the CodeX projects can completed wholly within a single discipline. The IPX marketplace project is currently being expanded to include Business School students with actual market experience. (One can imagine that such an artificial but real world market environment would prove a fascinating economics—or, specifically, game theory—experiment.) Similarly, the Charitopia project required extensive tax advice from pro bono counsel Orrick Herrington. The CALC project involves importing legal building code restraints into technical CAD software used by engineering professionals.

The legal pedagogical effects of such mixed project work occur as mere incidents of research goals, but they can be profound. Traditionally, lawyers are trained to communi-cate only with other lawyers about the law. Here, we are forced to synthesize legal doctrines for two sets of non-experts: (i) project partners, and (ii) system users. (Expressing even a minute doctrinal element to a computer is an even greater challenge!) Such transcription often requires that we probe the doctrine in novel ways, as in mapping ambiguities. Synaethesia requires another level of disciplinary mastery.

Inversely, non-lawyer participants are typical vocal about their perspectives on the law. What we experience as a spectacular edifice is popularly viewed as a dark thicket—to be blundered into at random. Such conversa-tions can be mutually eye-opening.

In short, the societal problem you recognize truly requires the sustained reply of a university—the syncretized attention of diverse intellectual expertise.

LST@Stanford: *Thank you very much, Mr. Walker, for this interview.*

Josh Walker: You are very welcome.

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