

Emerging Standard of Technical Competence

Ronald L. Chichester

Advanced Evidence & Discovery Seminar

San Antonio, Texas

May 20, 2016

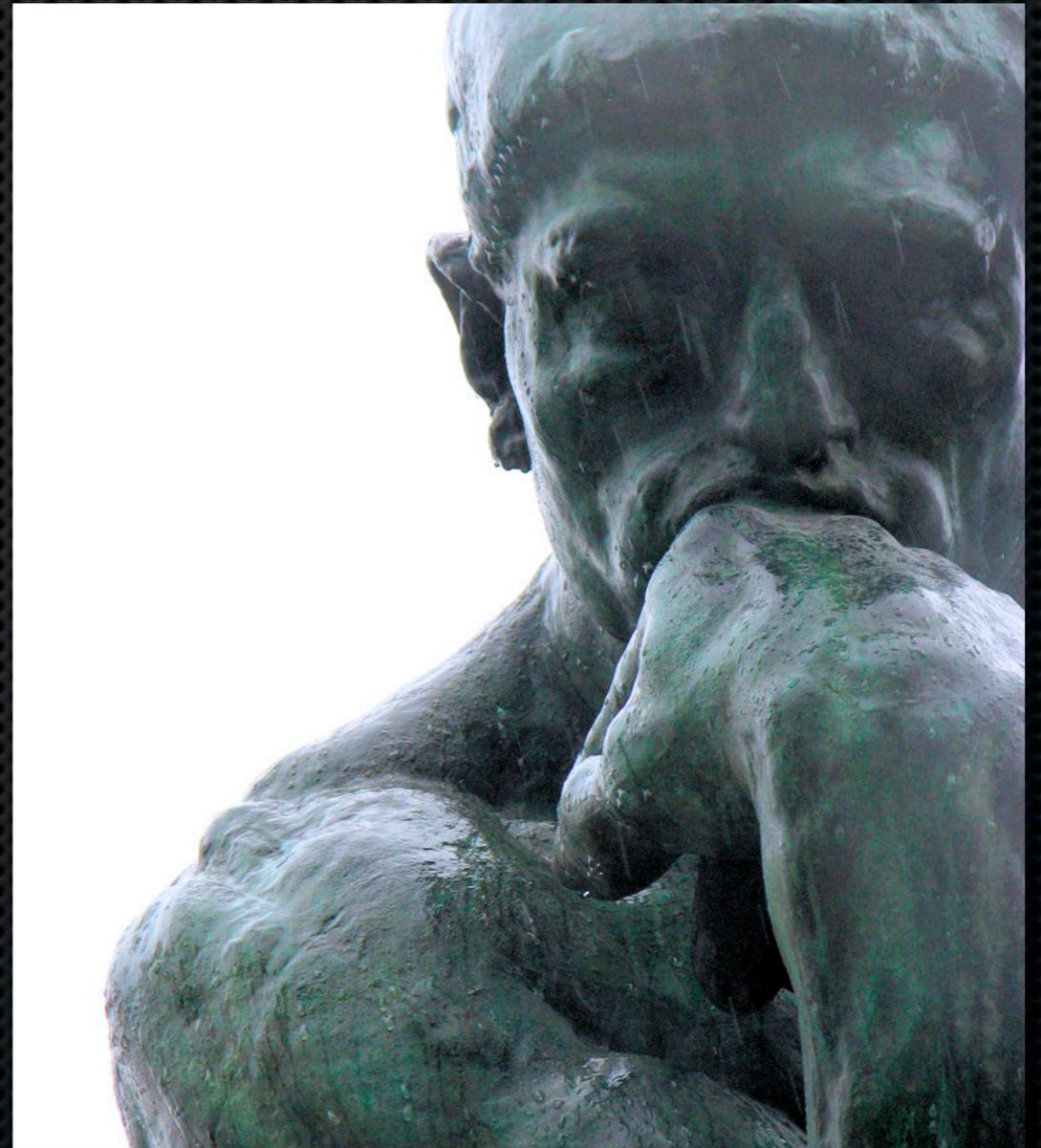
The Lawyer's Place in Society

Specialization

Requires Special Training

Lawyers are Knowledge Workers

- ✦ We “*think* for a living” and *work* with knowledge
- ✦ Two types of thinking
 - ✦ **Convergent** thinking
 - ✦ **Divergent** thinking



Types of Thinking

- ✦ **Convergent** thinking

- ✦ “I know all the cases and the law...”

- ✦ “I can apply case law in the proscribed manner...”

- ✦ **Divergent** thinking

- ✦ I can think “out of the box”

- ✦ “I can select and apply case law creatively...”

Law School & Practice

- ✦ Taught you how to **find** law and facts
- ✦ Taught you how to **think** about law and facts
- ✦ Taught you how to **apply** law and facts



With specialization comes...

...the “**Grand Bargain**” ...

...between a profession
and its society.

“We trust our health to the physician; our fortune and sometimes our life and reputation to the lawyer and attorney.”

Adam Smith, *Wealth of Nations* (1776)

Basis for the Grand Bargain

- ✦ People can't know everything so a specialist is needed. Certifications connote ability.
- ✦ Professionals resolve an uneven distribution of knowledge in society, but must do so in an ethical way (that lay people do not) for the betterment of society.
- ✦ If there wasn't exclusivity, you could not recoup the "cost of entry" of the knowledge base.
- ✦ Exclusivity by conspiracy.

What makes a profession?

- ✦ Professionals have knowledge that lay people do not.
- ✦ Admission to the profession depends on credentials.
- ✦ Activities of the profession are (usually) regulated
 - ✦ Exclusivity is granted over an aspect of life
 - ✦ Standards of conduct and ethical codes
- ✦ Professionalism and serving the common good

Why should there be occupational groups controlling the acquisition and application of various kinds of knowledge?

Yet all the *questions* and
answers are predicated on

Yet all the *questions* and
answers are predicated on
access to knowledge

Technology is the key

Access requires *technology*



Knowledge was coded
in ***buzzwords***
that were encased in (rare)
books
that were housed in (a few)
libraries.

Access required \$\$\$

The Present



Texas State Law Library

1-844-829-2843 (toll-free) | e-mail

Questions?
Ask us!



Research
from Home



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Library Resources

Collections

- [Braden's Annotated Texas Constitution](#)
- [Continuing Legal Education Materials](#)
- [Digital Collection](#) **New!**
- [Electronic Databases](#)
- [Historical Texas Statutes](#) **Updated!**
- [Law Practice Management](#)
- [Law Reviews](#)
- [Legislative Recaps](#)
- [Parole & Mandatory Supervision Law](#)
- [Print Materials](#)
- [Recommended Titles and Treatises](#)
- [Restrictions on Convicted Felons](#)
- [State of the Judiciary Messages](#)

LIBRARY SPOTLIGHT

Closing the Justice Gap

POSTED 28 MAR 2016

The Knight Foundation recently announced the [Knight News Challenge on Libraries](#). The topic this year is *How might libraries serve 21st century information needs?*

The State Law Library saw this as an opportunity to request funding to support our part in the Access to Justice movement. The library's mission is to make legal information available for all Texans. Technology allows us to make digital legal resources available statewide via the [State Law Library's web portal](#).

We invite you to read [our official proposal on the Knight News Challenge website](#), and if you like and support our proposal, please leave a comment or

Law & Legislation

Texas

- [Constitution](#)
- [Statutes](#)
- [Administrative Rules](#)
- [Attorney General Opinions](#)
- [Historical Texas Statutes](#)
- [Legislative Recaps](#)
- [Frequently Asked Legal Questions](#)
- [Texas Legislature Online](#)

Federal

- [Constitution & Statutes](#)
- [Rules and Regulations](#)

Laws of Other States

<http://www.sll.texas.gov/>



Information + Internet

invites

Automation + Innovation

NOW....

Access requires \$0.000001

The *foundation* for
Convergent thinking
now requires \$0.000001

Worse...

Artificial Intelligence

- ✦ **Convergent** thinking
 - ✦ Can be mimicked with a blend of *neural networks*
- ✦ **Divergent** thinking
 - ✦ Can be mimicked with *genetic algorithms*

Convergent and Divergent
thinking

can be automated!

Convergent and Divergent
thinking

have been automated!



Problem with the Bargain

- ✦ Recent studies have found deficiencies in professions
 - ✦ Economic
 - ✦ Technological
 - ✦ Psychological
 - ✦ Moral
 - ✦ Quality
 - ✦ Inscrutability

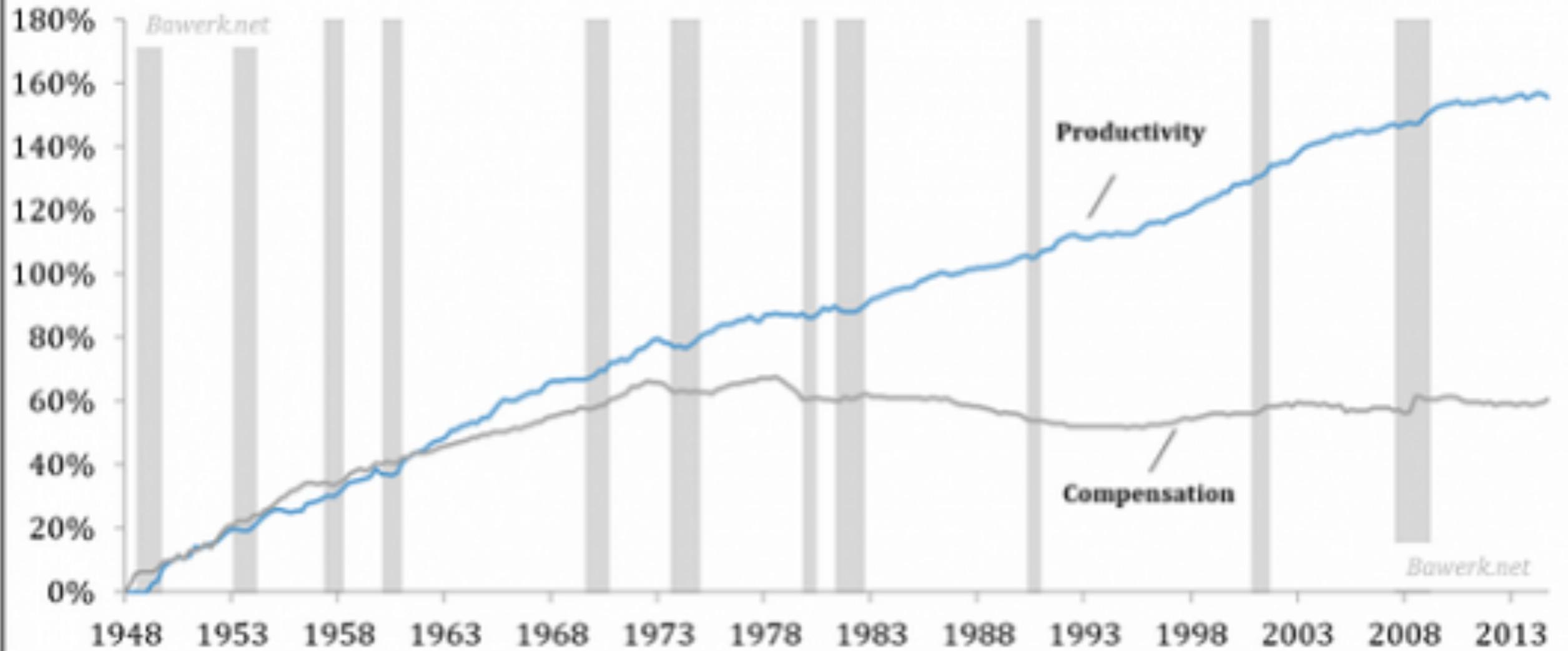
Problem with the Bargain

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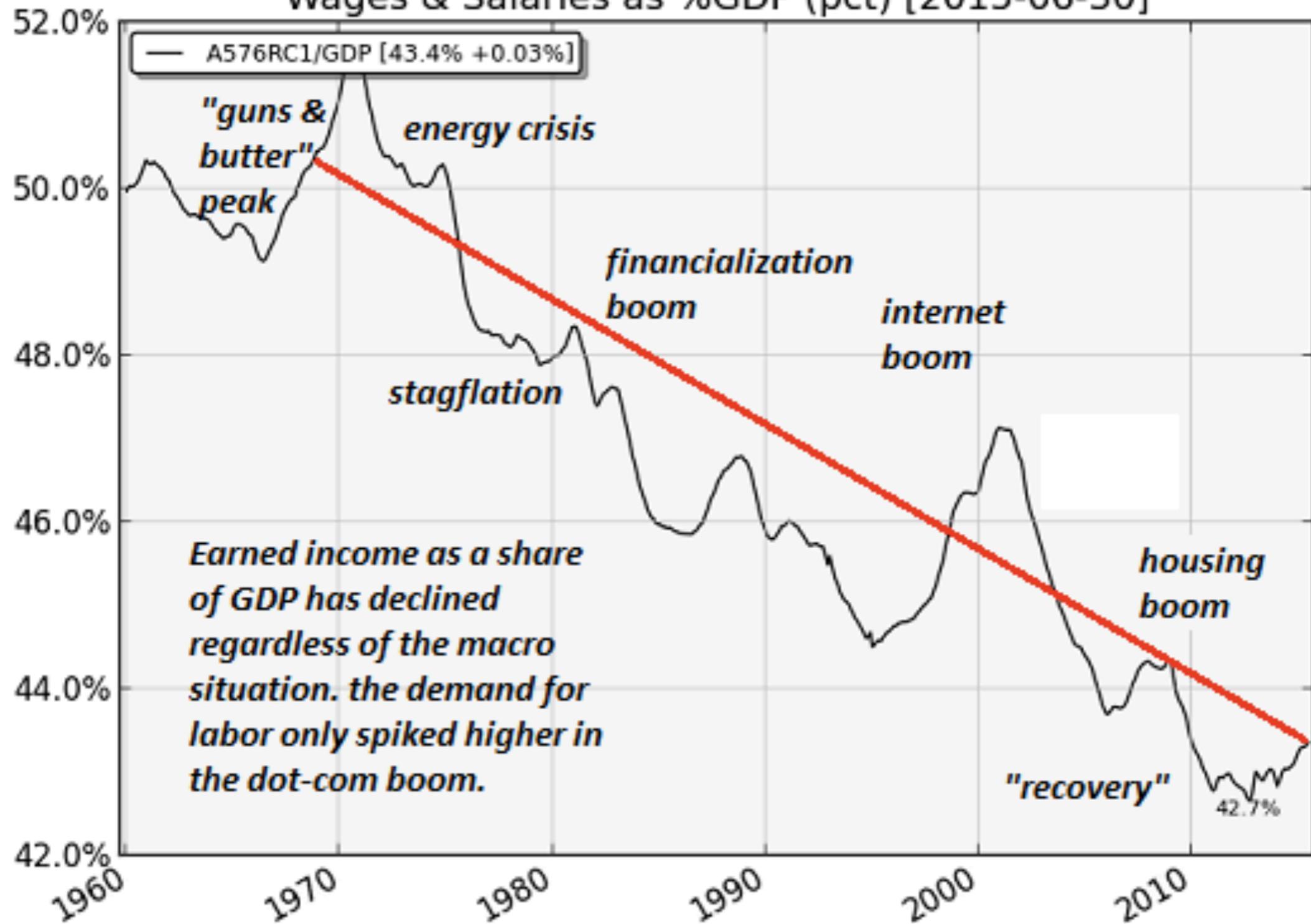
< Economic >

1948 = 0%

US Labour Productivity vs. non-supervisory compensation



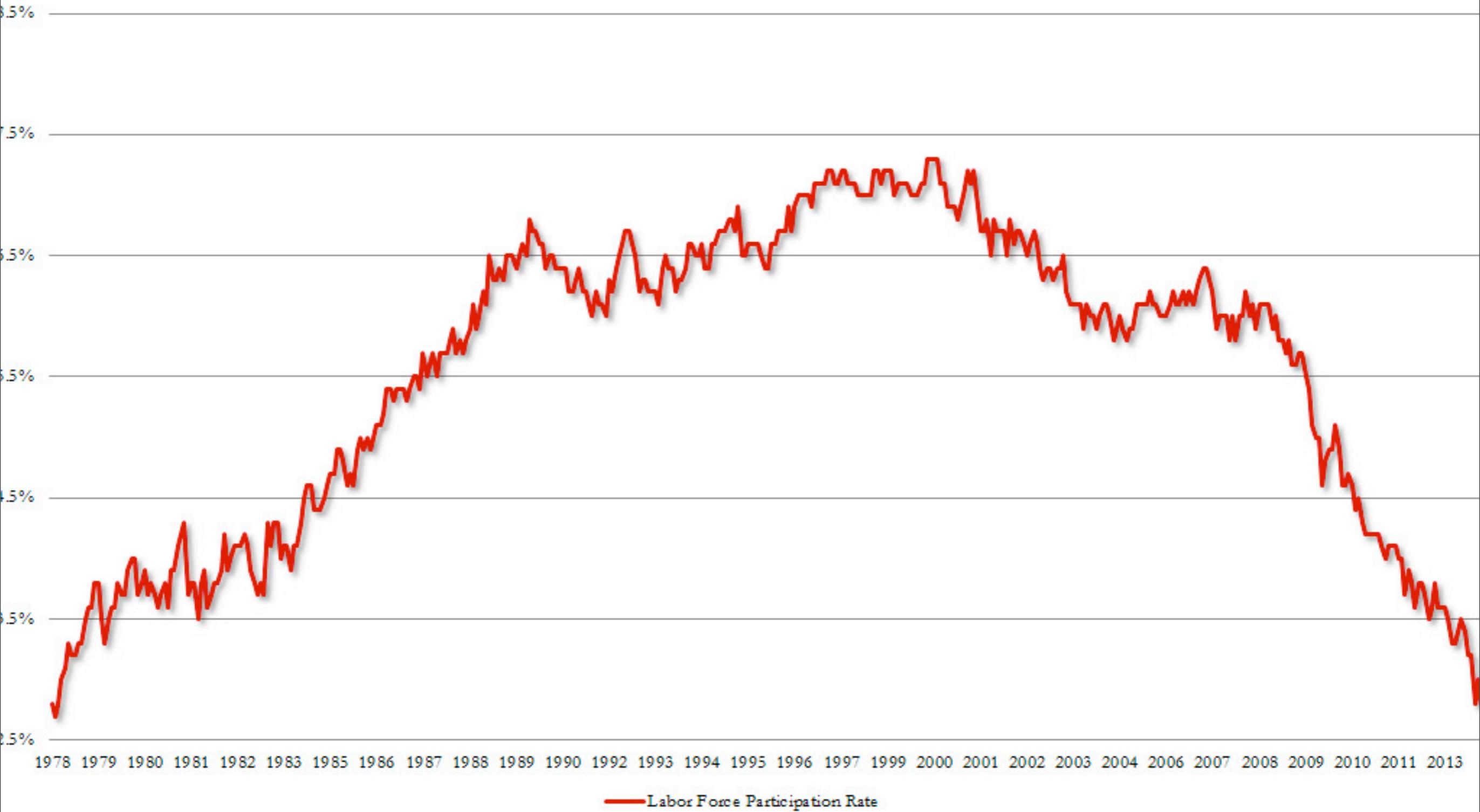
Wages & Salaries as %GDP (pct) [2015-06-30]



Last update Aug 6, 2015

<http://www.mdbriefing.com>

Labor Force Participation Rate



— Labor Force Participation Rate

Automation in other
industries and professions
not matched by the Bar

Lag in legal automation has
caused lawyers to be more
expensive



Huge Push for Automation

Two things to automate:

- Things lawyers *do*

- Things lawyers *are*

How do you automate
what lawyers *are*?



13
YEARS

11/2000 - 11/2013

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Contact Info

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Phone: 781.229.2265

Fax: 781.328.0778

Email: info@valoratech.com

News & Events

Valora Live Webinar: 10 Differences Between
eDiscovery and Information Governance

25 August, 2015 - [Register](#)

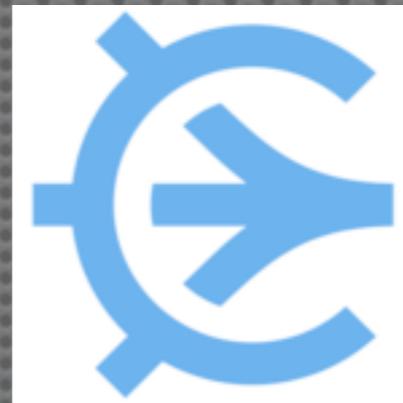
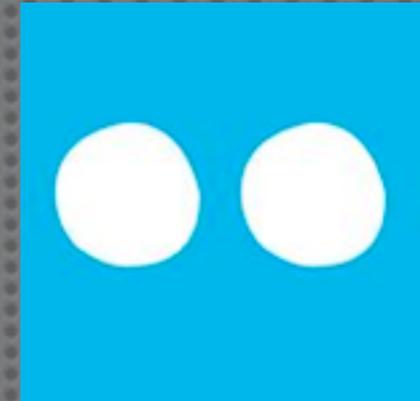
Valora Technologies, Inc.

About the Company



Valora is a technology-based provider of automated document analysis and review services for the legal industry. Valora offers services for paper and electronic populations to law firms, government agencies, corporate legal departments and litigation support organizations around the world.

Valora has developed a strong expertise in the processing, management and analysis of both large and small cases with short deadlines.



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DOCUMENT
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Novus Law provides The New Certainty by finding the story in all types of legal matters better, faster and less expensively than is possible using traditional legal processes.



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2. Motions and Briefs



ContractExpress Document Automation Software

Used by the world's leading law firms and corporations and powered by Thomson Reuters

Read more

INSIGHTS

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who fit right in



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The logo for ROSS, featuring the word "ROSS" in a bold, sans-serif font with a blue circular icon containing a white shape resembling a stylized 'R' or a person's head profile.

HOME

ABOUT

SIGNUP

Your brand new

SUPER INTELLIGENT ATTORNEY

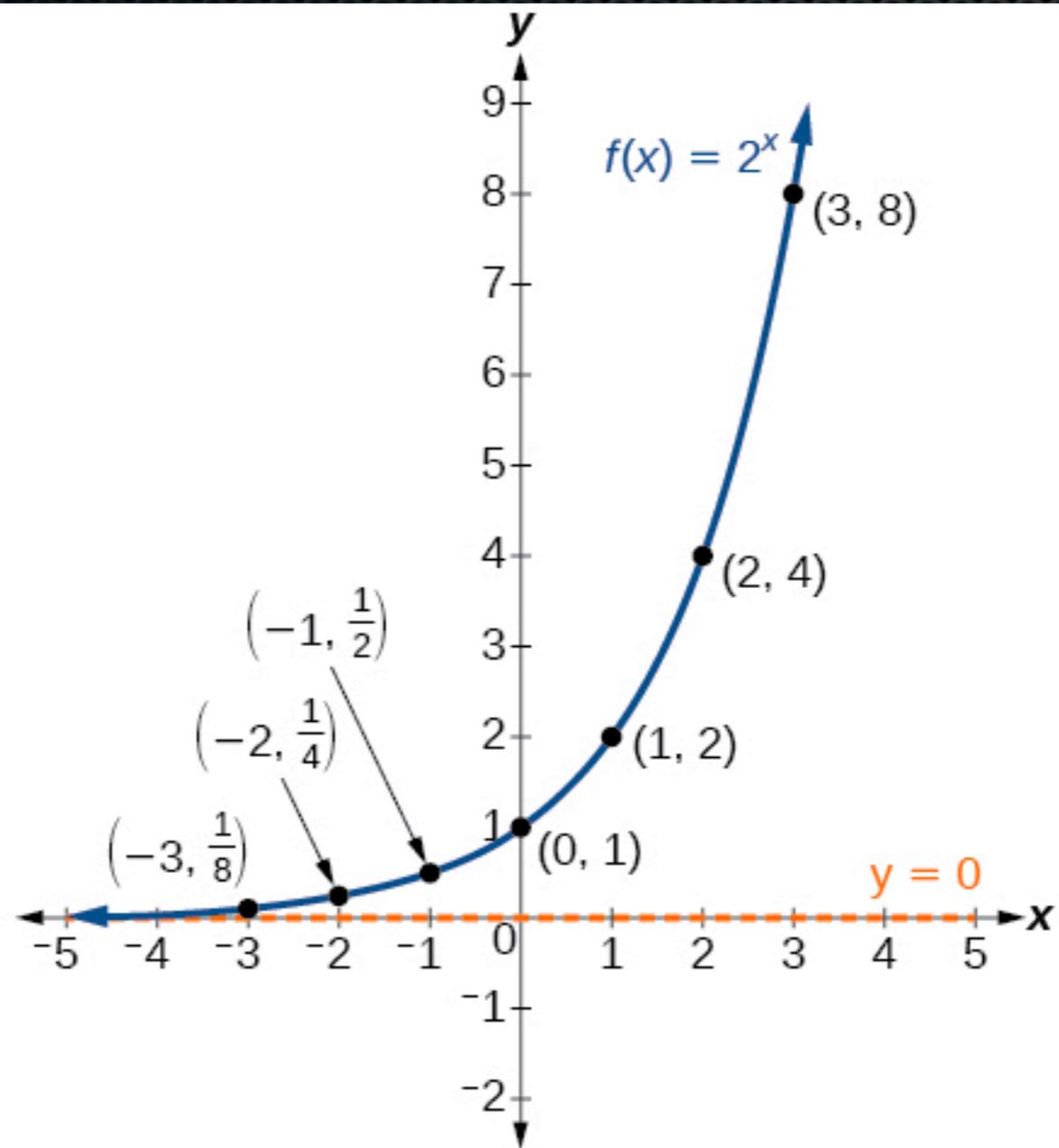
LEARN MORE

“The machine is designed to understand language, provide answers to questions, formulate hypotheses and monitor developments in the legal system.”

BakerHostetler

Bankruptcy practice





Is the “firm” necessary?

- ✦ In the past...
 - ✦ Shared library
 - ✦ Shared offices
- ✦ In the future...
 - ✦ Shared IT infrastructure



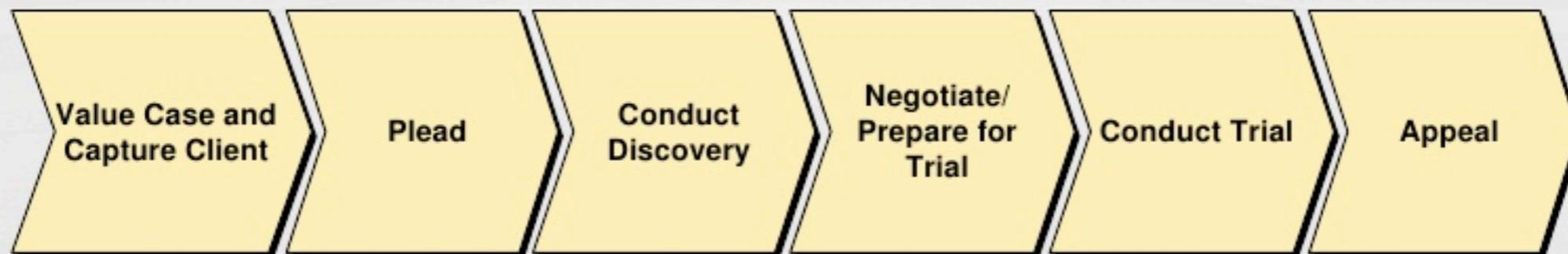
Are Lawyers Necessary?

< Example >

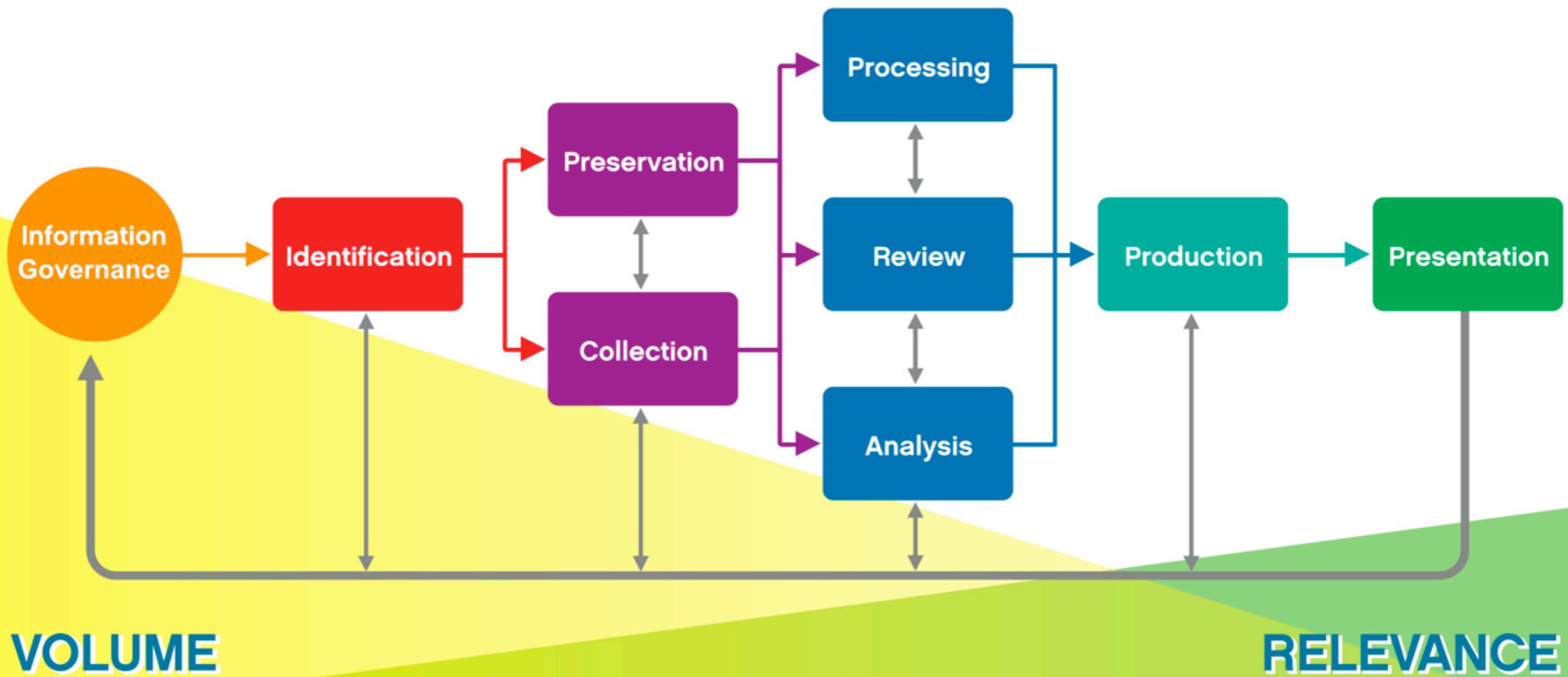
Litigation Workflow

The litigation process follows six broad stages

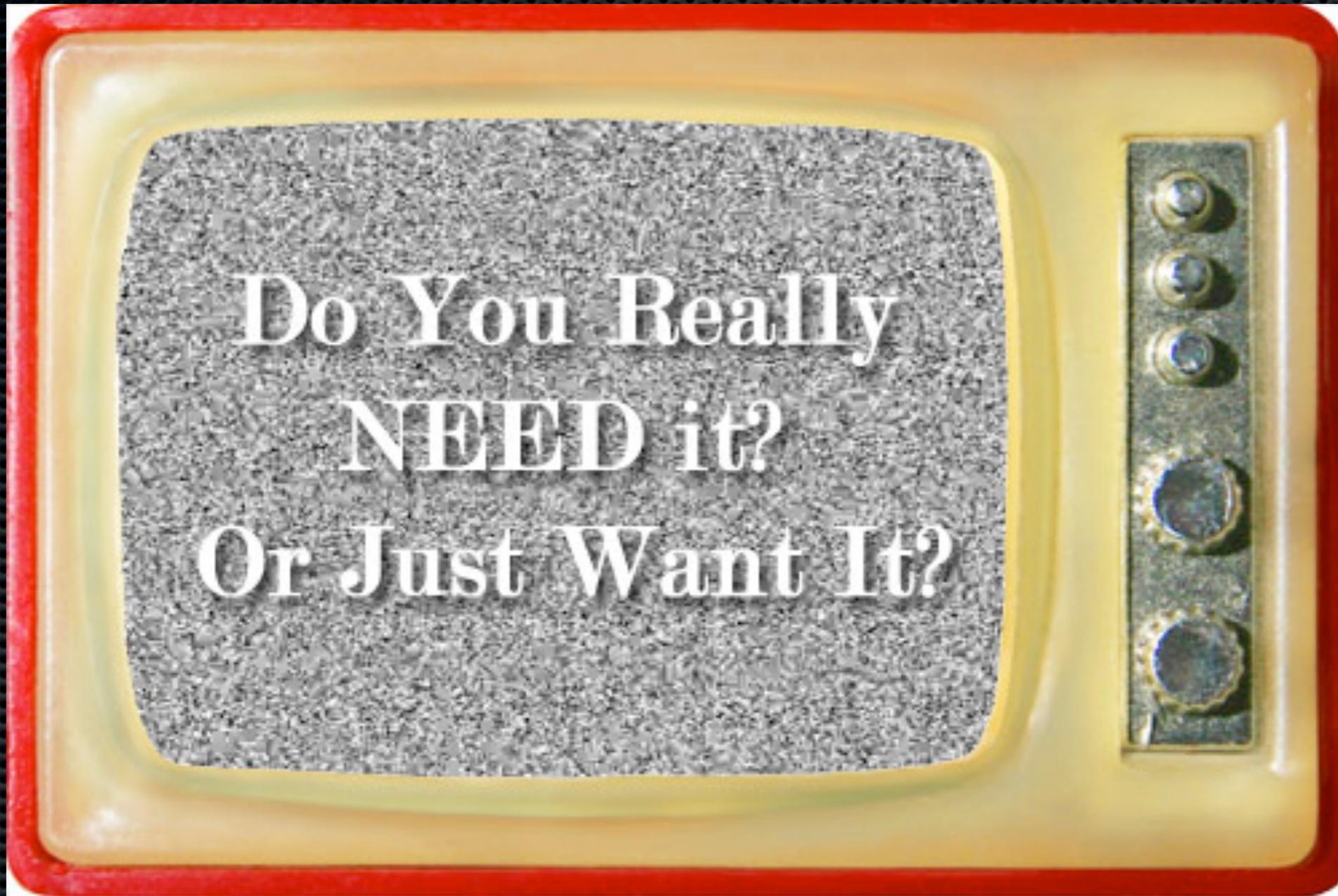
Litigation Process Stages



Electronic Discovery Reference Model



Electronic Discovery Reference Model / © 2014 / v3.0 / edrm.net







What is it about a lawsuit
that you **cannot afford** to
be without?

Information

90+ % of information is in digital form.

Remaining information can be described (and thus digitized).



Hmm... Lots of Data...



How to cope with the data?

Big Data Landscape

Vertical Apps

Ad/Media Apps

Business Intelligence

Analytics and Visualization

Log Data Apps

Data As A Service

Analytics Infrastructure

Operational Infrastructure

Infrastructure As A Service

Structured Databases

Technologies

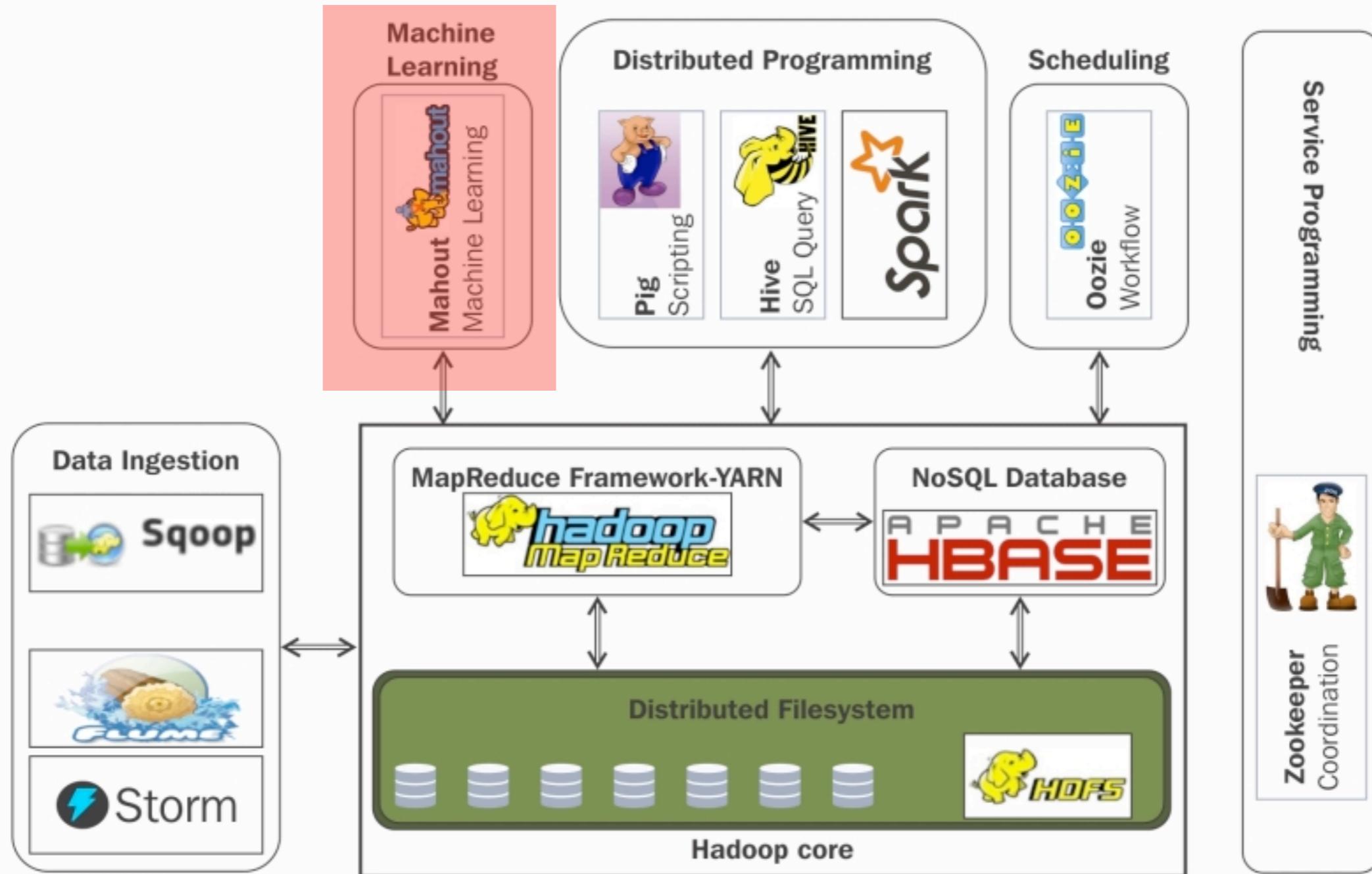
Can this be adapted to
Litigation?

Absolutely!



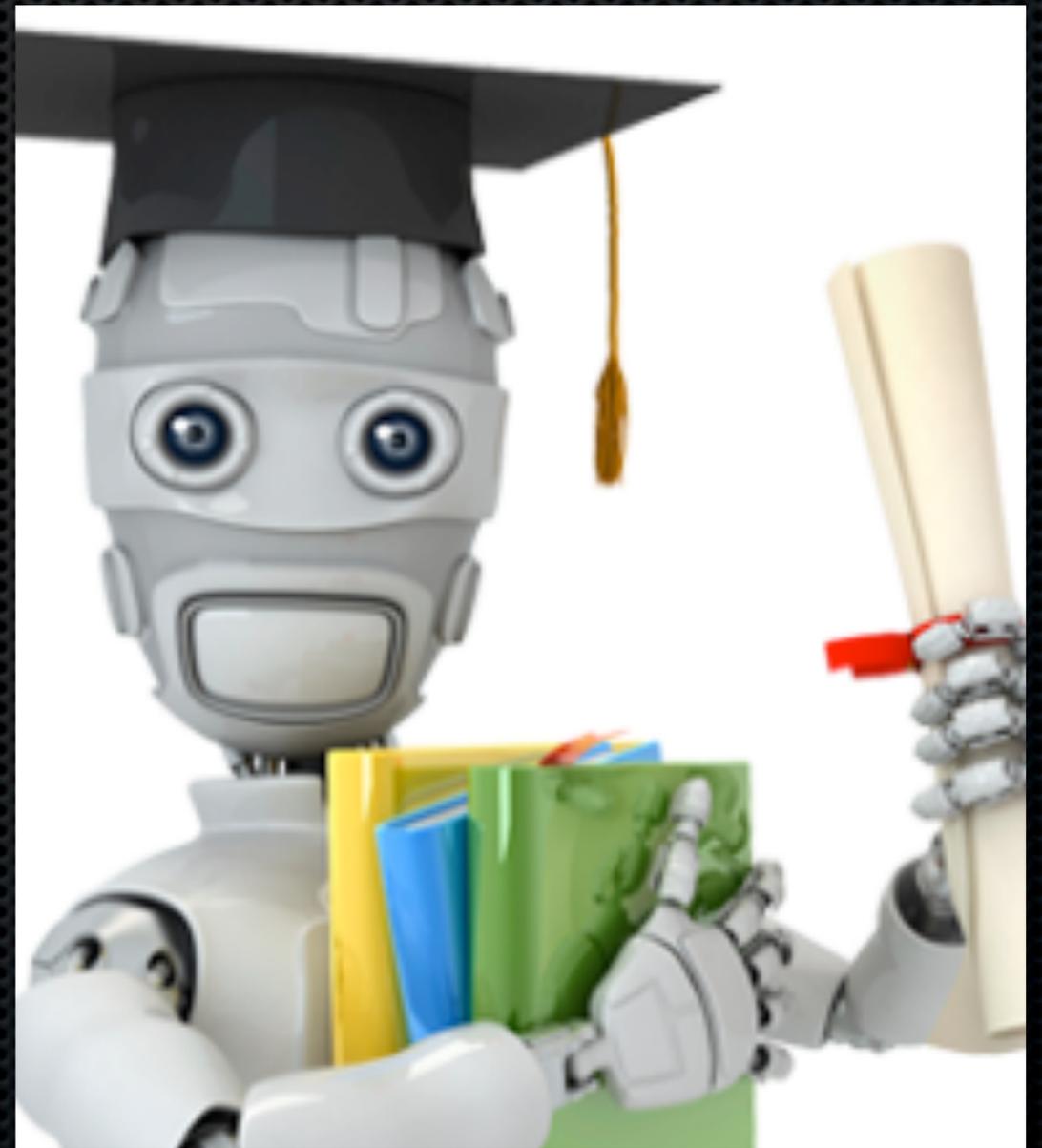
Apache Ambari
<http://incubator.apache.org/ambari>

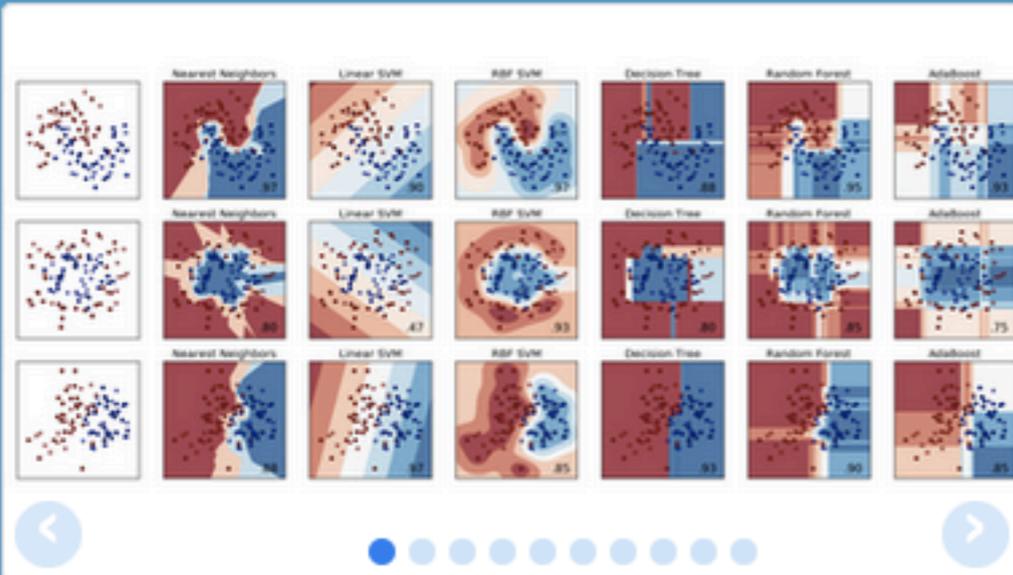
System Deployment



Machine Learning

- ✦ Started in 1958
- ✦ Gives machines the ability to learn without explicit programming
- ✦ Learn from and make predictions on data
- ✦ Supervision **NOT** required





scikit-learn

Machine Learning in Python

- Simple and efficient tools for data mining and data analysis
- Accessible to everybody, and reusable in various contexts
- Built on NumPy, SciPy, and matplotlib
- Open source, commercially usable - BSD license

Classification

Identifying to which category an object belongs to.

Applications: Spam detection, Image recognition.

Algorithms: SVM, nearest neighbors, random forest, ... — Examples

Regression

Predicting a continuous-valued attribute associated with an object.

Applications: Drug response, Stock prices.

Algorithms: SVR, ridge regression, Lasso, ... — Examples

Clustering

Automatic grouping of similar objects into sets.

Applications: Customer segmentation, Grouping experiment outcomes

Algorithms: k-Means, spectral clustering, mean-shift, ... — Examples

Dimensionality reduction

Reducing the number of random variables to consider.

Model selection

Comparing, validating and choosing parameters and models.

Preprocessing

Feature extraction and normalization.

Application: Transforming input data such as



ConvNetJS

Deep Learning in your browser

orange
DATA MINING
FRUITFUL&FUN

將軍

The Shogun
Machine Learning
Toolbox

H₂O.ai

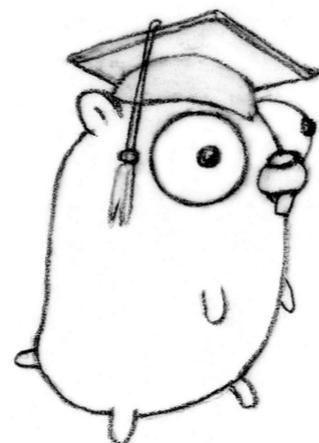
Spark

scikit
learn

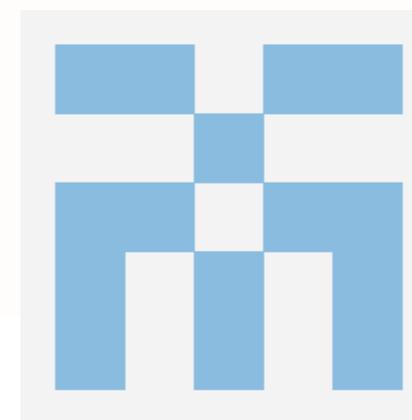


WEKA
The University
of Waikato

Accord
Framework .NET



mahout



Electronic Witness

- ✦ Acquire information from custodian
- ✦ Dump information into a repository
- ✦ Run machine learning software on the information in the repository
- ✦ Repeat for multiple custodians

Electronic Trial

- ✦ Electronic witness(es) can be examined and cross-examined
- ✦ Questions can be pre-selected based on the particular cause of action
- ✦ Responses can be analyzed with a variety of methods and techniques
- ✦ A verdict can be rendered (because a law can be expressed as an algorithm)

Electronic Award of Remedies

- ✦ Based on the verdict, remedies can be applied
- ✦ Remedies can be determined from statute or agreed-upon formula
- ✦ Entire record can be made available for appeal (which too can be automated)

Cost of Hardware

<\$10k

Cost of Software

\$0

Number of Lawyers Needed

0

Are they working on this?



US006604094B1

(12) **United States Patent**
Harris

(10) **Patent No.:** US 6,604,094 B1
(45) **Date of Patent:** Aug. 5, 2003

(54) **SIMULATING HUMAN INTELLIGENCE IN COMPUTERS USING NATURAL LANGUAGE DIALOG**

6,233,545 B1 * 5/2001 Daig 704/2
6,341,372 B1 * 1/2002 Daig 717/136

(75) **Inventor:** Henry M. Harris, Pasadena, CA (US)

* cited by examiner

(73) **Assignee:** Symbionautics Corporation, Washington, DC (US)

Primary Examiner—George B. Davis
(74) *Attorney, Agent, or Firm*—Thomas N. Giaccherini; Alan H Sochel

(*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 462 days.

(21) **Appl. No.:** 09/634,896

(22) **Filed:** Aug. 9, 2000

Related U.S. Application Data

(63) **Continuation-in-part** of application No. 09/579,325, filed on May 25, 2000.

(51) **Int. CL⁷** G06F 15/18; G06F 17/00

(52) **U.S. CL** 706/48; 706/12

(58) **Field of Search** 706/48, 12

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,619,718 A * 4/1997 Correa 704/9

20 Claims, 41 Drawing Sheets

10

12

Sensory Information
sight, sound, touch,
other

16

Stimulus

Associative
Memory

14

Response

18



US 2006/0195430 A1

(19) **United States**

(12) **Patent Application Publication**
Arumainayagam et al.

(10) **Pub. No.:** US 2006/0195430 A1

(43) **Pub. Date:** Aug. 31, 2006

(54) **SYSTEMS, METHODS, SOFTWARE FOR INTEGRATION OF CASE LAW, LEGAL BRIEFS, AND LITIGATION DOCUMENTS INTO LAW FIRM WORKFLOW**

Publication Classification

(51) **Int. CL**
G06F 17/30 (2006.01)

(52) **U.S. CL** 707/3

(57) **ABSTRACT**

(76) **Inventors:** Yohendran Arumainayagam, Lakeville, MN (US); Steven Brant Anderson, St. Paul, MN (US)

The present inventors recognized a need for improving conventional informational retrieval systems, particularly those intended for retrieval of legal information. Accordingly, they devised systems, methods, and software that facilitate online access to documents, such as non-opinion legal documents, in context of a legal workflow. An exemplary method of operation includes determining that a user of a client access device is performing a litigation-related task using a word-processing application on the client-access device. And in response to an affirmative determination, providing trial court materials relevant to the litigation-related task to the client access device without the user leaving the word-processing application. In some embodiments, the word-processing application is launched from a case-management application that provides case, activity, and role information to the online legal research system.

Correspondence Address:

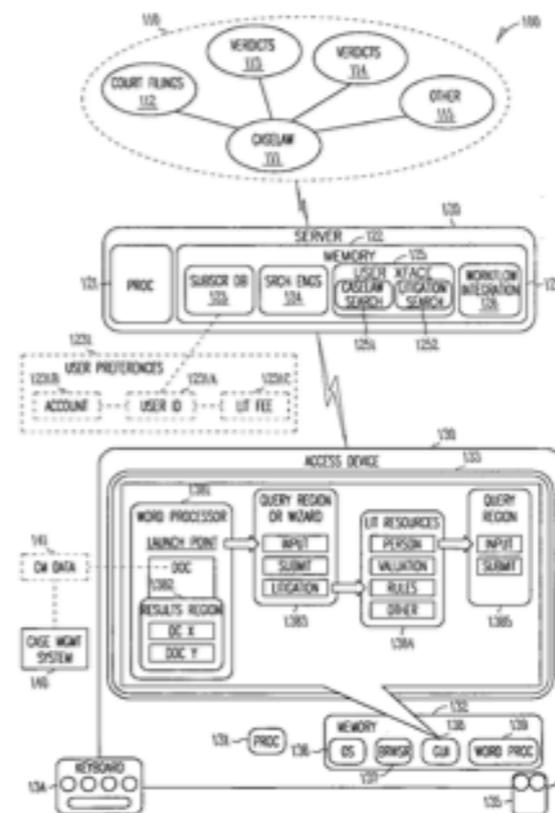
Schwegman, Lundberg, Woessner & Kluth, P.A.
P.O. Box 2938
Minneapolis, MN 55402 (US)

(21) **Appl. No.:** 11/343,086

(22) **Filed:** Jan. 30, 2006

Related U.S. Application Data

(60) **Provisional application No.** 60/648,048, filed on Jun. 28, 2005.

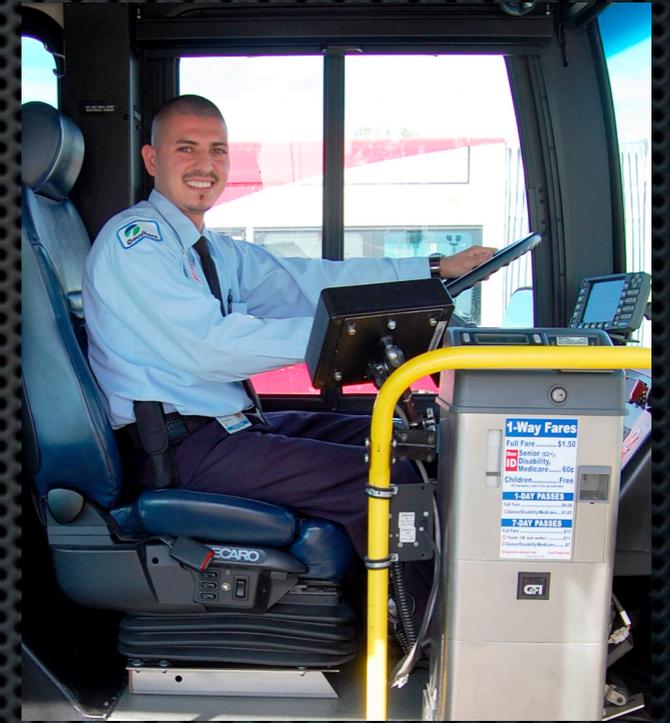


Job Opportunity for an Attorney

- ✦ Be the one to write the 1000 questions for the electronic examination
- ✦ Be the one to generate the remedies algorithm
- ✦ Update your work every few years or so
- ✦ Watch your work applied to thousands of cases



You will be in good company...



Conclusions

- ✦ Automation is starting to accelerate exponentially
- ✦ Automation & Innovation are being institutionalized
- ✦ Corporatization of the practice of law is coming
- ✦ Look for attacks on the Bar
- ✦ **Massive** changes in your practice within 5 years



Think of it as a *Second*
Industrial Revolution

This one is *brain*
instead of *braun*

Our *ethical* aspects may be
our only saving grace as a
profession.

Questions?



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Cybersecurity

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Electronic Discovery

Litigation matters involving electronically stored information, spoliation sanctions, computer forensics, data metrics and data analysis and consulting on the scope and content of requests for production.



Intellectual Property

Patents, trademarks, copyrights, trade secrets, technology licensing, cloud contracts, software audits, SaaS agreements, terms of use agreements and terms of service agreements.

