

The Big Picture

Technology, Global Change and the Impacts for Legal

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Riverview Law - Market Horizon Scanning Seminar

June 19th 2015

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www.fastfuturepublishing.com

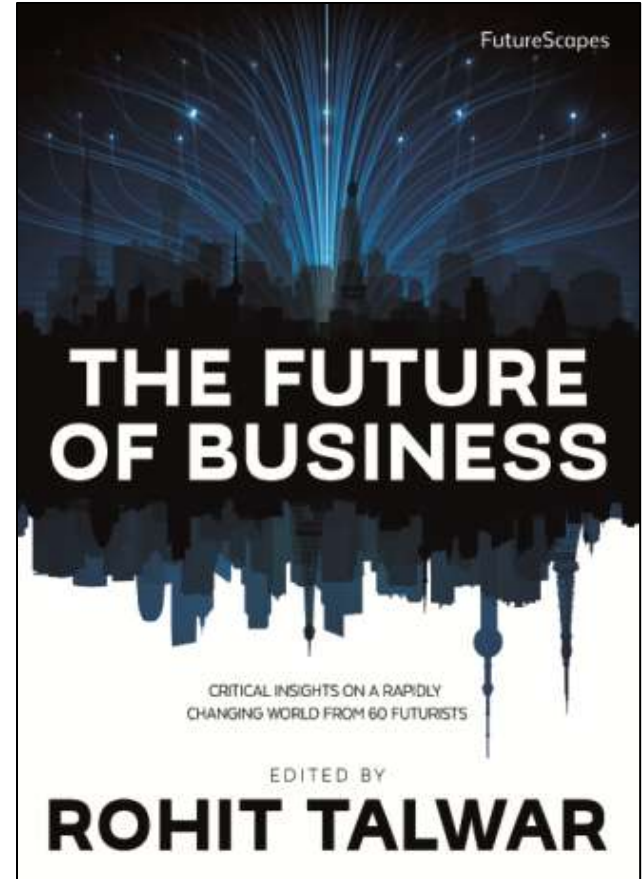
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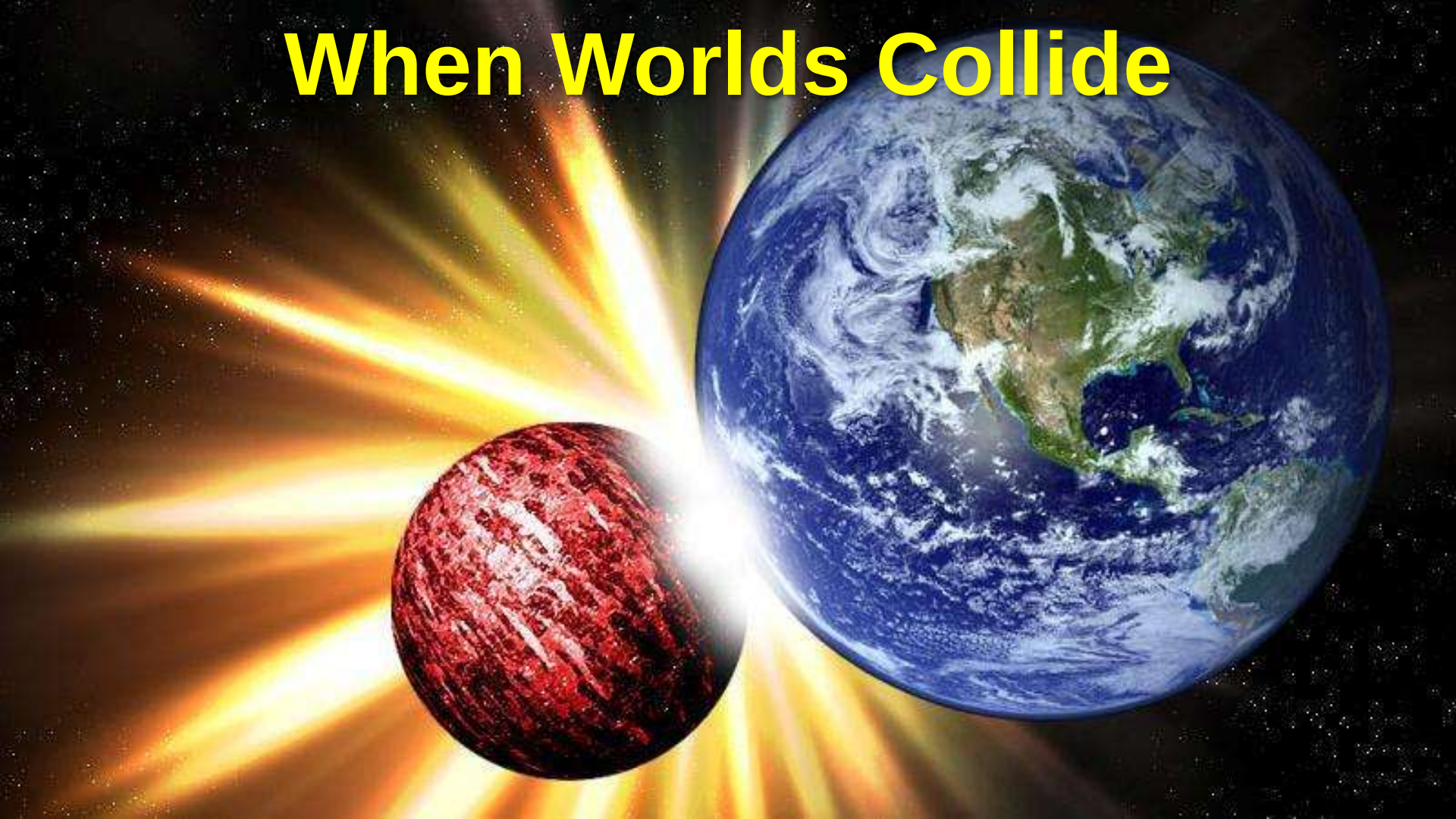


The Book

- 60 Chapters
- 62 Contributors from 21 countries
- Critical insights into a rapidly changing world
- Project completed in 19 weeks
- Bringing exponential thinking to publishing



When Worlds Collide



Can we Change our DNA?

***Play by the
Rules of the
Game***



***Create a
New Game***

‘Future Proofed’ Organisations Work on 3 Horizons in Parallel



1-12 Months

**Operational
Excellence**



1-3 Years

**Search for
Growth**



4-10+ Years

**Creating
the Future**

Global Challenges and Existential Risks



Bostrom's Digital Simulation?



A Digitized Species With a Global Brain

Infinite Data... and it's Used Poorly



**3D / 4D
Printing**

**Nanotechnology /
Atomically Precise
Manufacturing**

**Artificial
Intelligence /
Conscious
Technology**

**New
Computing
Architectures**

**Food Chain
Transformation**

**A Possibility Explosion
from Exponential
Science and Technology
Developments**

**Hyperconnected
Internet of
Humanity**

**Energy
Innovation**

**Immersivity /
Mixed Reality
Living**

**Robotics /
Drones**

**Brain
Uploading**

**Healthcare
Transformation**

**Human
Augmentation**

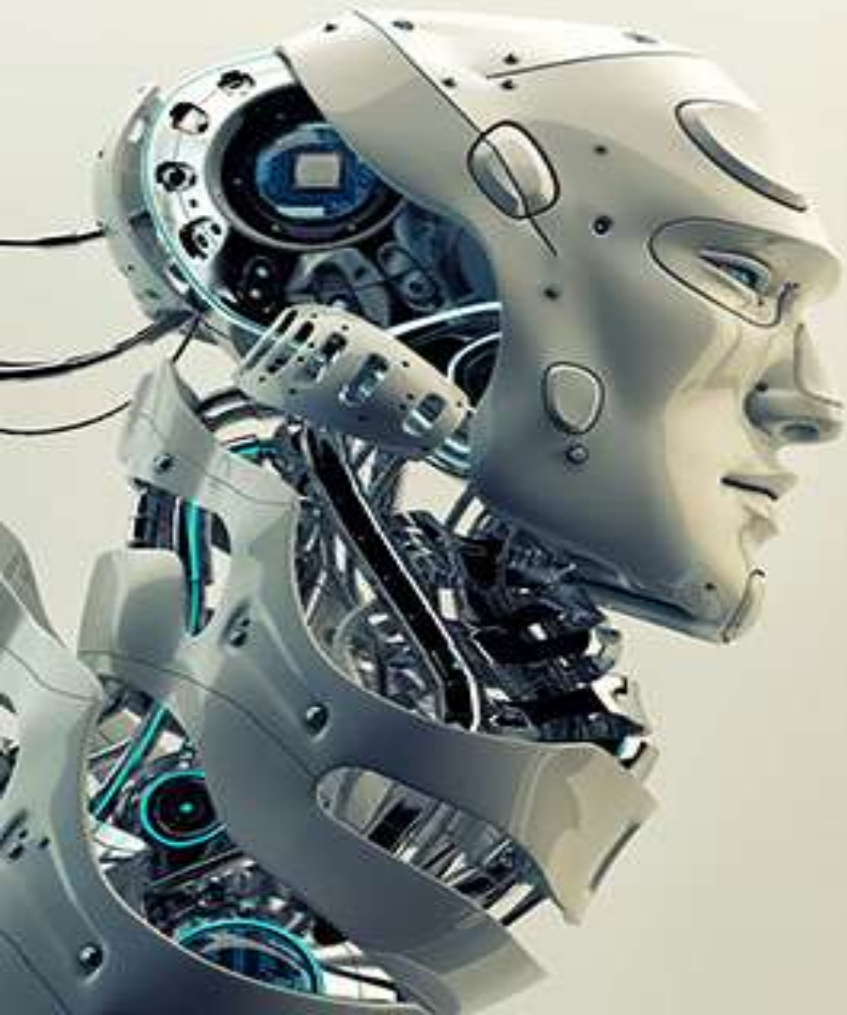
**Synthetic
Biology**

**Blockchain
Technology**

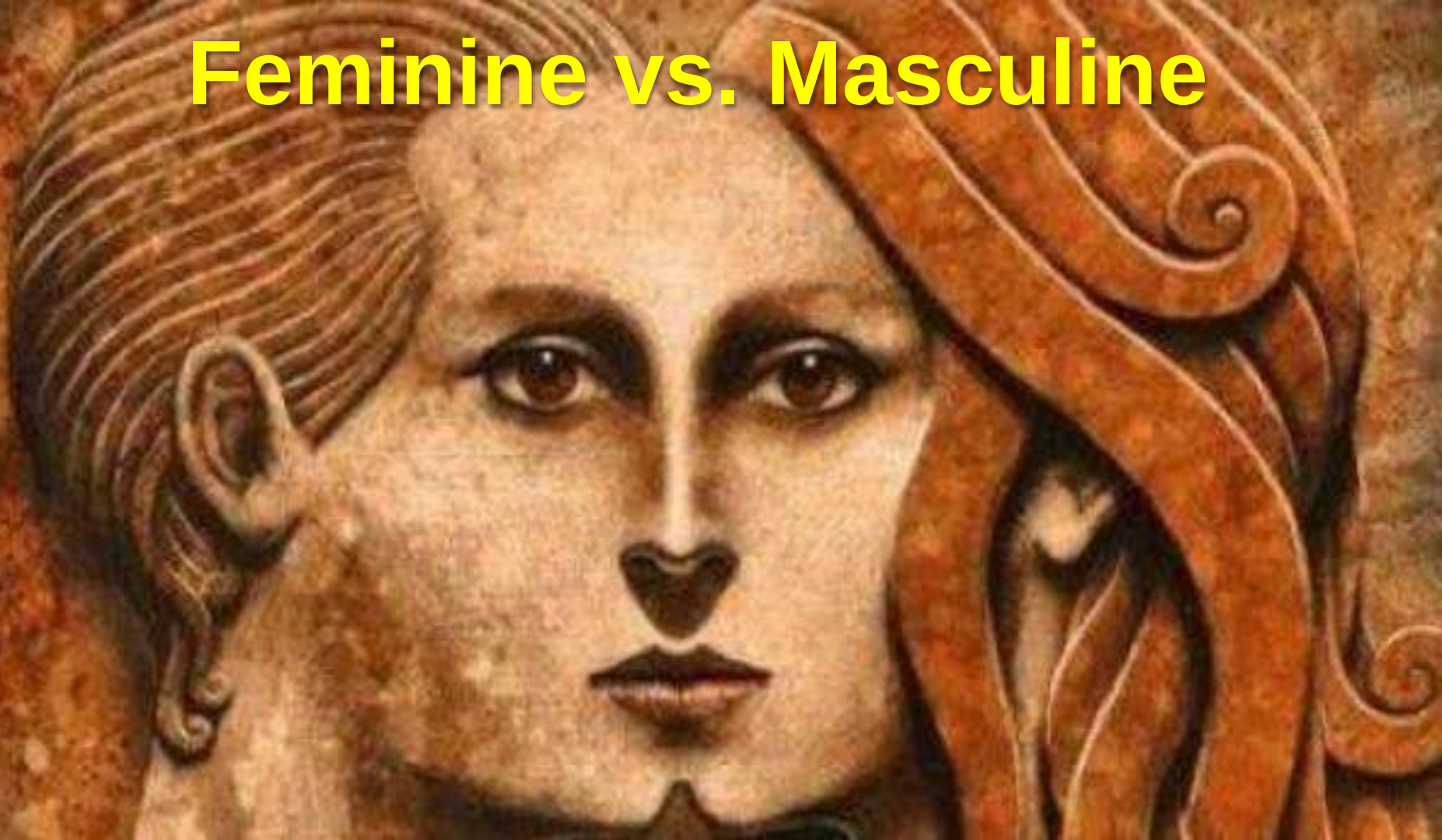
Design Tensions



Human vs. Machine Intelligence



Feminine vs. Masculine





Crowd vs. Curiosity

Lending



Personal Finance



Payments



Retail Investments



FinTech

1,027 Companies

Contact info@venturescanner.com
to see all

Institutional Investments



Equity Financing



Remittances



Consumer Banking



Financial Research



Banking Infrastructure



Old Money vs. New Finance

Star Wars vs. Star Trek



Embracing the Transformative Role of IT

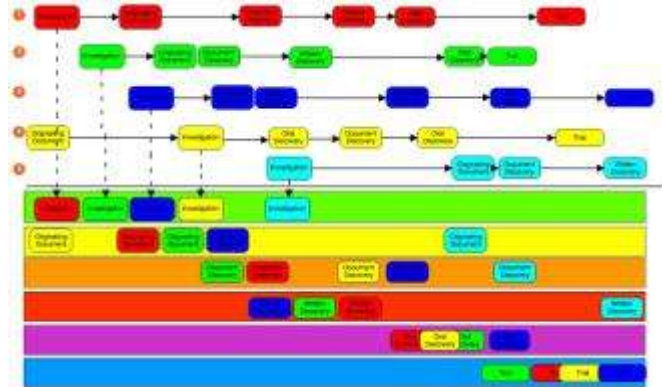
**Customer
Centric
'Hive Mind'**



**Talent:
Develop and
Leverage
Staff**



**Innovate to
Differentiate**



**Re-engineer
Processes**

Technology Timeline



Our Technologies are Evolving From the Desktop...



...to Portable and Mobile ...



A central figure of a person in athletic wear is shown with several sensors attached. Callout circles provide detailed views of each sensor: a head-mounted display (top left), a chest strap heart rate monitor (top right), a wrist-worn device (middle right), a smartphone with a health app (middle left), a foot-mounted sensor (bottom left), and a wrist-worn device (bottom right).

GLASSES
Overlays navigation directions and information about points of interest directly on to the wearer's field of vision.

SHIRT
Conductive thread means a computer is literally built into the fabric of the shirt, providing the processing power for all the other wearable gadgets.

WRISTWATCH
Vibrates when a message arrives and displays it on the watch face. Tells the time too.

WRISTSTRAND
A sensor that tracks movement to determine the number of steps taken through the day – 10,000 is ideal – and how much sleep the wearer gets at night.

HAND
Embedded under the skin is a chip containing medical records, passport data and credit records. Information is transferred by waving the hand over a suitable scanner.

TROUSERS
Also made with conductive thread, the trousers take the energy generated by movement and use it to power the other gadgets.

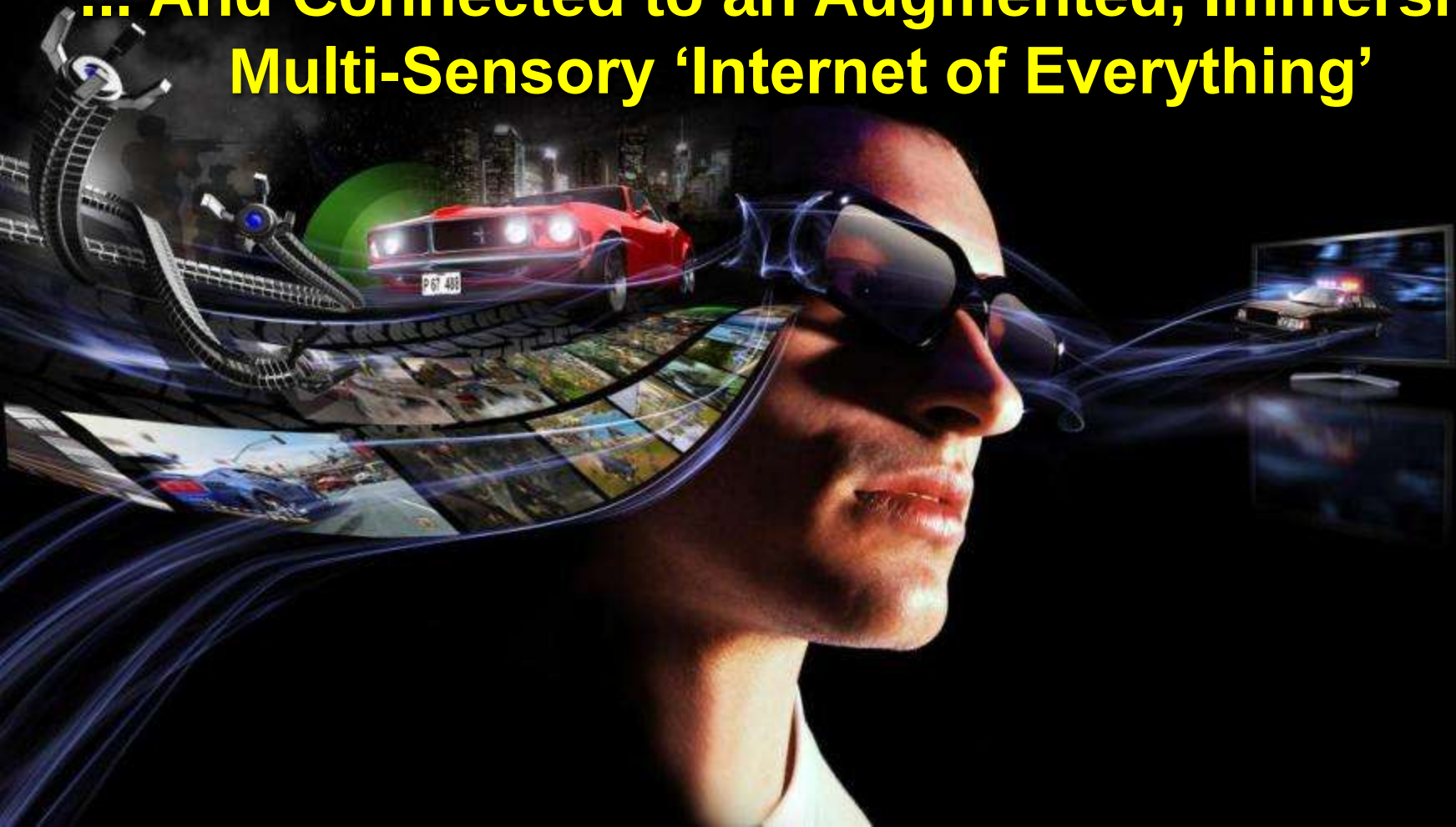
SHOES
GPS chip provides directions using LED lights in each shoe: the left shoe indicates direction, while the right shows distance.

GRAPHIC: JOHN BRADLEY

...Embedded...



**... And Connected to an Augmented, Immersive
Multi-Sensory 'Internet of Everything'**



AI is Going Mainstream

88%

AI advisers / helper apps will structure legal documents and check content generated by lawyers

Simply Become Immortal

Eterni.me collects almost everything that you create during your lifetime, and processes this huge amount of information using complex Artificial Intelligence algorithms.

Then it generates a virtual YOU, an avatar that emulates your personality and can interact with, and offer information and advice to your family and friends, even after you pass away.



Hello Mike!

Remember that time when we went fishing?

Speak or type to reply to Jack

The Next Internet –

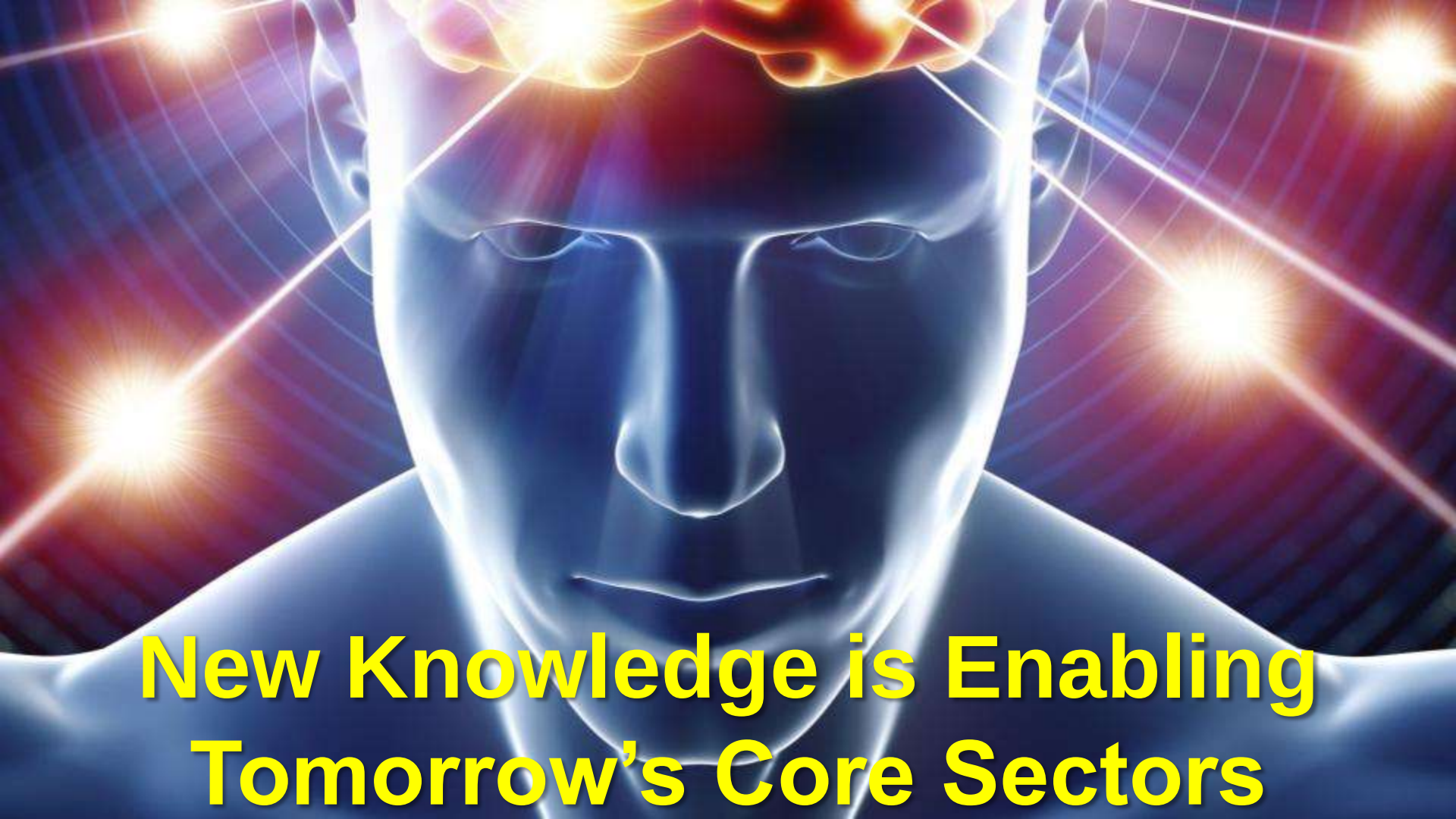
AI / 3D / VR / AR / Embedded?

Intelligent Assistants and Digital Twins



Predicting Legal Decisions and Votes





**New Knowledge is Enabling
Tomorrow's Core Sectors**

Information and Communications Technology

Mobile Internet - Devices, Infrastructure, Commerce, Services

Next Generation Intelligent, Personalized Internet

Cloud Based Applications, Infrastructure, Services

Internet of Things / Internet of Everything / Internet of Humanity

Big Data, Data Mining and the Automation of Knowledge

AI and Deep Learning

Blockchain Systems and Distributed Autonomous Organizations

Citizen Services and Domestic Infrastructure

Healthcare Innovation - Wellness, Prevention, Diagnosis, and Treatment

Elder Care

Human Modification / Augmentation / Body Shops

Clean Domestic Water and Sanitation Services

Smart Homes – Smart Devices, Air Con, Waste to Power

Green / Electric / Autonomous / Near-Autonomous Vehicles

Education Systems Transformation

Production and Construction Systems and Technologies
Advanced Robotics / Drones
3D/4D Printing and Advanced Materials
Genomics and Synthetic Biology
Biomimicry Applied to Product Design and Engineered Systems
Rapid/Green/Sustainable Construction

New Societal Infrastructure and Services
New Food and Agriculture Solutions
Sharing / Circular Economy – Repurpose, Recycle, Reuse, Repair
Smart City Infrastructures and Services
Intelligent Transport Systems
E-Government

Industry Transformation
Global Infrastructure - Roads, Transport, Energy, Water
Automation of Professional Services - E.g. Accounting, Legal, Consultancy, and Architecture
Financial Services Technologies

Energy and Environment
Alternative/Renewable Energy / Storage
Advanced Oil/Gas Exploration/Recovery - Including Fracking, Methane Hydrates
Geo-Engineering, Climate / Environment Protection, Disaster Recovery / Remediation



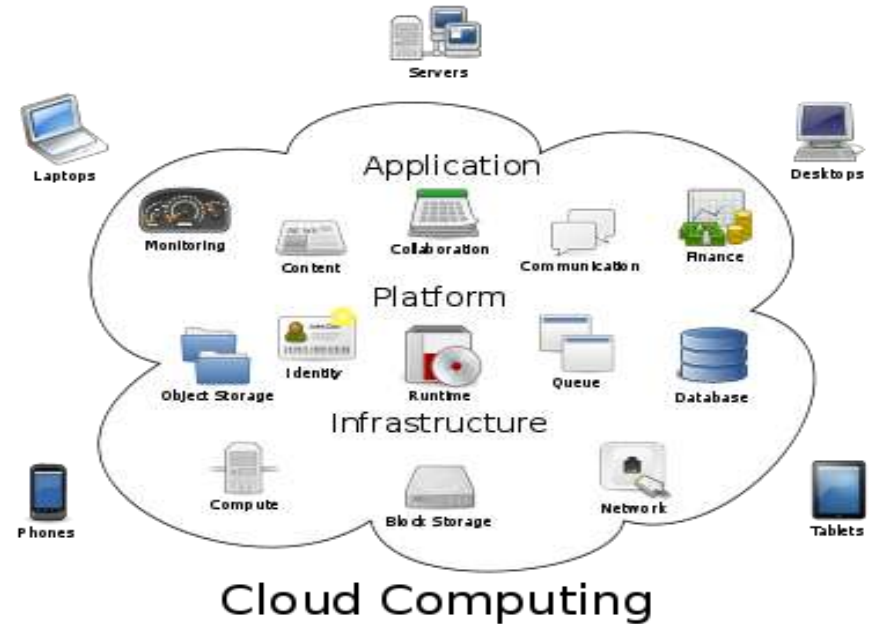
**Magic and Mayhem -
Business Strategies,
Models and Behaviours**

Magic – E.g. One Time Insurance

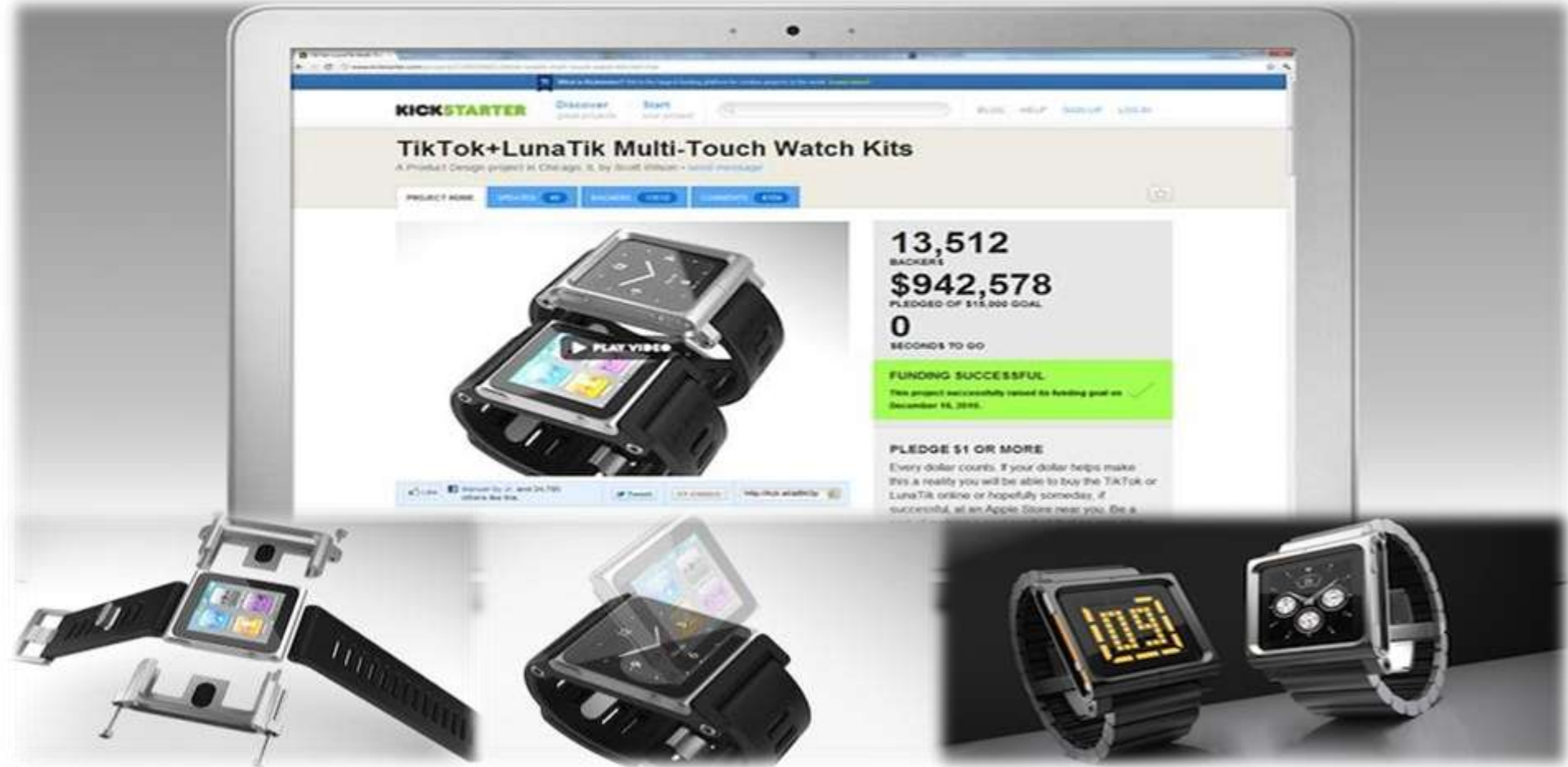
- Smartphone service
- One day contracts
- Premiums start around US\$4
- E.g:
 - Sports and Leisure
 - Golf (Hole in one protection)
 - Domestic and Overseas Travel



Assets: 'Usership' vs. Ownership



Innovation: e.g. Kickstarter.com



Alternative Revenue Models E.g. Auctions

Sony Bravia 37" TV	Sony 15.5" 4GB Windows	£125 Cash
		
RRP: £630 Auction Time: 1 min	RRP: £614 Auction Time: 30 s	RRP: £125 Auction Time: 1 min
25 s £20.59	26 s £58.61	56 s £0.54
Highest Bidder: zannisalvatore • Bid via mobile (£1.50 per SMS), text MAD SOIHY3 to 80160 .	Highest Bidder: weegie75 • Bid via mobile (£1.50 per SMS), text MAD SOIHY7 to 80160 .	Highest Bidder: badassjay • Bid via mobile (£1.50 per SMS), text MAD CH12S to 80160 .
BID NOW!	BID NOW!	BID NOW!
\$5190 (£3088)	\$14,770 (£8791.50)	\$136 (£81)



bitcoffe



bitcoin

ACCEPTED HERE



KENNYHERTZ PERRY
ATTORNEYS AT LAW | KANSAS CITY



SHERIDANS



Blockchain, Distributed Accounting Ledgers and Smart Contracts



***“I’m an asset, and I belong to XYZ Company,
here’s a digital signature to prove it”.***

The image features the Nasdaq OMX logo in a bold, white, sans-serif font. The logo is centered horizontally and slightly above the vertical center. The background is a solid blue color with a faint, light blue circuit board pattern. The circuit lines are thin and white, forming a complex grid of squares and rectangles. Small green and orange dots are scattered along these lines, and some lines end in arrowheads, suggesting a flow or direction. The overall aesthetic is technical and digital.

NASDAQ OMX®

Barbarians at the Gate





ROFLCON
A "MEME" CONFERENCE:
2008 - 2012

THE WEB ECOLOGY PROJECT
PRODUCED "ACADEMIC" STUDIES OF
TWITTER AND CHATROULETTE: :
2009 - 2011

THE AWE-SOME FOUNDATION FOR THE ARTS AND SCIENCES
A MICRO-FUNDED PHILANTHROPY THAT FUNDS PROJECTS \$1,000 AT A TIME: 2009 - PRESENT (2011 -- \$244,000 GRANT FROM KNIGHT FOUNDATION. 2014 - HIT A MILLION IN FUND-

ROBOT, ROBOT & HWANG
LAW FIRM WITH TWO ROBOTIC PARTNERS TO AUTOMATE LEGAL WORK:
2010 - PRESENT

THE PACIFIC SOCIAL ARCHITECTING CORPORATION
FIRM THAT MAKES SOCIAL BOTS FOR HEDGE FUNDS AND RETAILERS:
2011 - PRESENT

THE BAY AREA INFRASTRUCTURE OBSERVATORY
2012 - PRESENT. GOES ON TOURS OF "CORE INFRASTRUCTURE" SITES SUCH AS A NUCLEAR POWER PLANT. IN 2014 RAISED \$20K ON KICK-STARTER FOR SHIPPING CONTAINER

BERKMAN CENTER FOR INTERNET & SOCIETY:
2006 - 2009

BARBARIAN GROUP
SOCIAL MAPPING FOR KASHI:
2009 - 2010

UNIVERSITY OF CALIFORNIA-BERKELEY LAW SCHOOL
SECRETLY ATTENDED LAW SCHOOL:
2010 - 2013

LAWYER, DAVIS POLK:
2013-2014

IMGUR, "HEAD OF SPECIAL INITIATIVES":
2014 --- ?

2013 - RELEASED
"PEAK ADVERTISING"
ACADEMIC PAPER ON DECLINE OF INTERNET ADS AS WE KNOW THEM, FROM THE "NESSON CENTER FOR INTERNET GEOPHYSICS"

HYPE-UP WEEKEND
MOCKERY OF "START-UP WEEKEND" WHERE PEOPLE HYPED RIDICULOUS BUSINESS PLANS LIKE "SCRAPS - TO GET YOUR LEFTOVERS INTO THE SHARE ECONOMY"

THE OPEN INTERNET PRESERVATION SOCIETY
EVENT FOR MOZILLA,
2012

Aliens in our Midst



Rapid Execution e.g. Superfast Construction

Ark Hotel - Dongting Lake - China



Pursuit of Exponential Growth

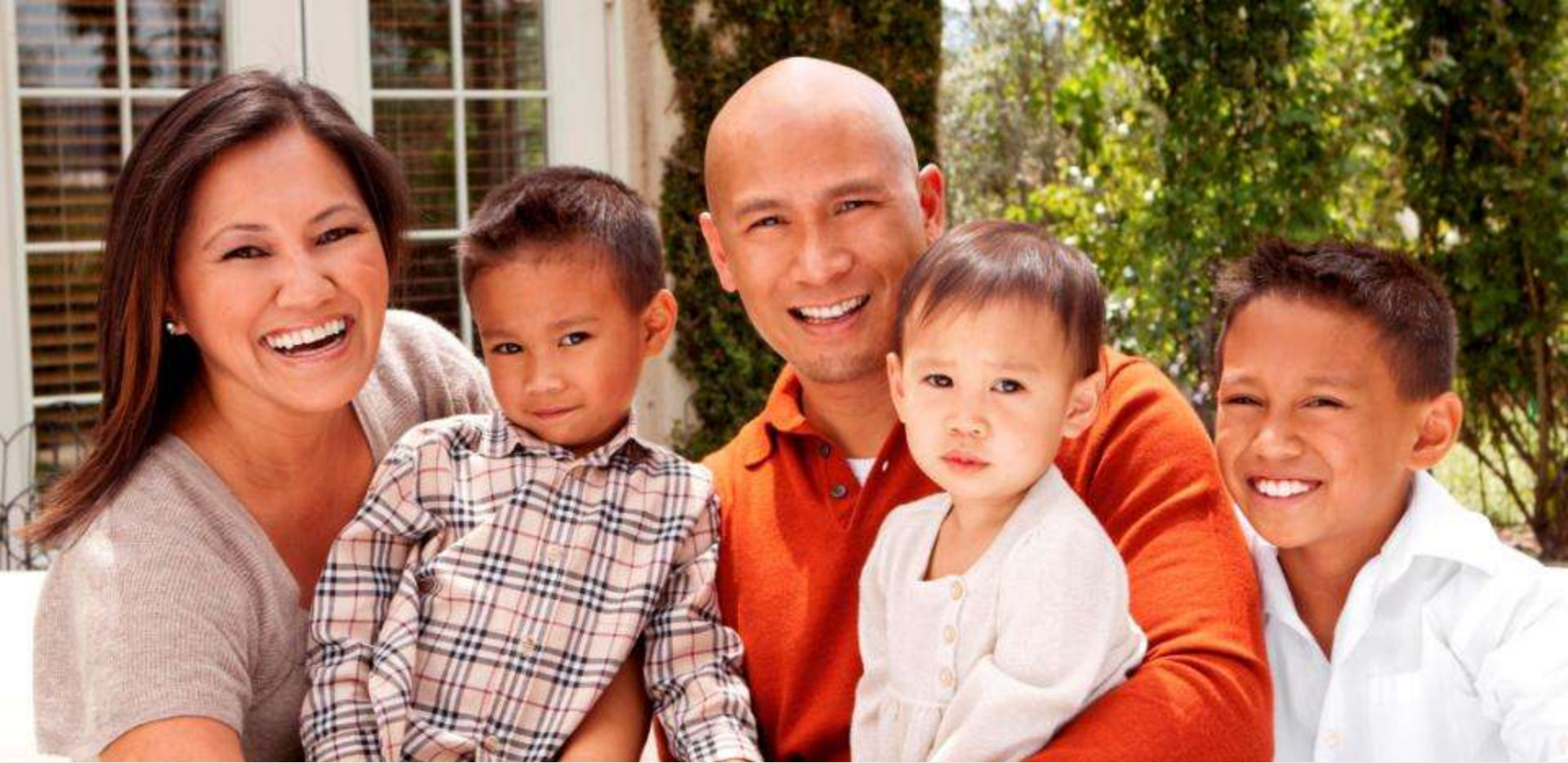
AirBnB Hotels	90x more listings per employee
GitHub Software	109x more repositories per employee
Local Motors Automotive	1000x cheaper to develop a new car model 5-22x faster to manufacture a car
Quirky Consumer Goods	10x faster product development (29 vs 300 days)
Google Ventures Investments	2.5x more investments in early stage start-ups 10x faster through design process
Valve Gaming	30x more market cap per employee
Tesla Automotive	30x more market cap per employee
Tangerine (formerly ING Direct Canada) Banking	7x more customers per employee 4x more deposits per customer



Strati – First 3D Printed Car (Local Motors)

Exponential Market Cap Improvement

	Age (years)	2011 valuation	2014 valuation	Increase
Haier	30	\$19 billion	\$60 billion	3x
Valve	18	\$1.5 billion	\$4.5 billion	3x
Google	17	\$150 billion	\$400 billion	2.5x
Uber	7	\$2 billion	\$40 billion	20x
AirBnB	6	\$2 billion	\$10 billion	5x
Github	6	\$ 500 million (est.)	\$7 billion	14x
Waze	6	\$ 25 million	\$1 billion (2013)	50x
Qirky	5	\$ 50 million	\$2 billion	40x
Snapchat	3	0	\$10 billion	10,000x +



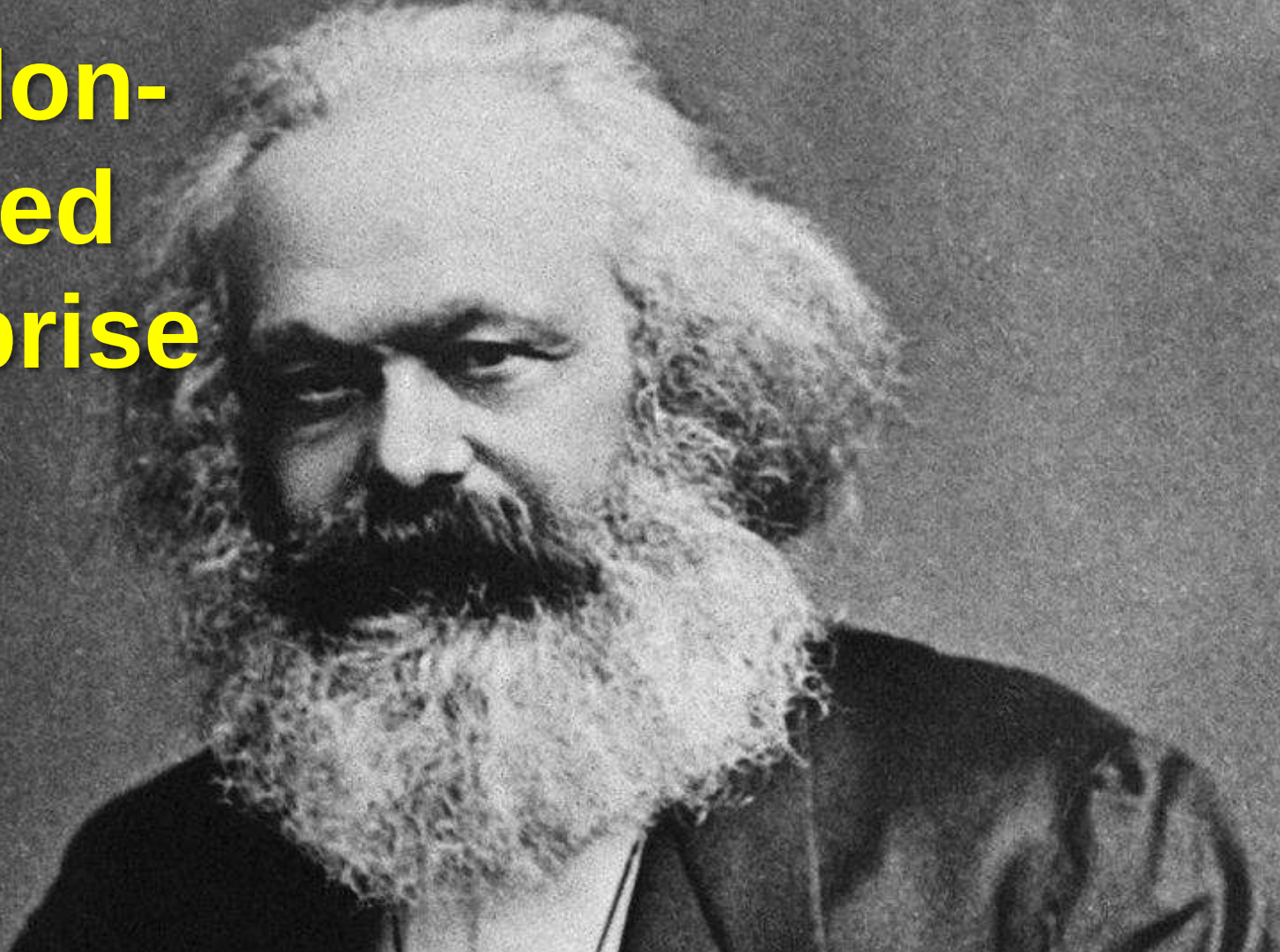
Business Light / Adoption Agencies

Automation Junkies



**Decentralized Autonomous Organizations /
Software Defined Companies / Corporations as a Technology**

The Non- Owned Enterprise



Future Work Skills 2020

While all six drivers are important in shaping the landscape in which each skill emerges, the color-coding and placement here indicate which drivers have particular relevance to the development of each of the skills.

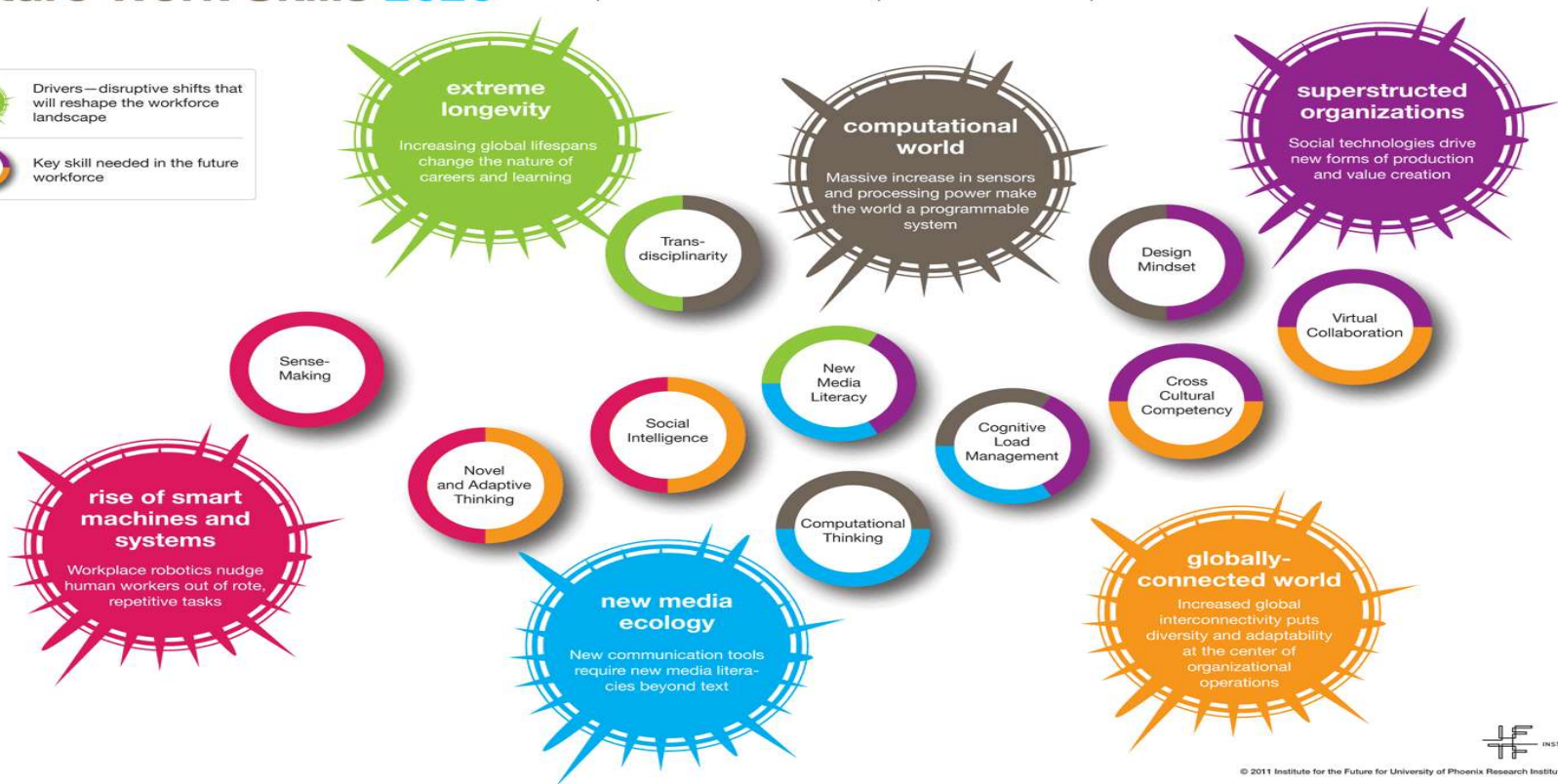
KEY



Drivers—disruptive shifts that will reshape the workforce landscape



Key skill needed in the future workforce



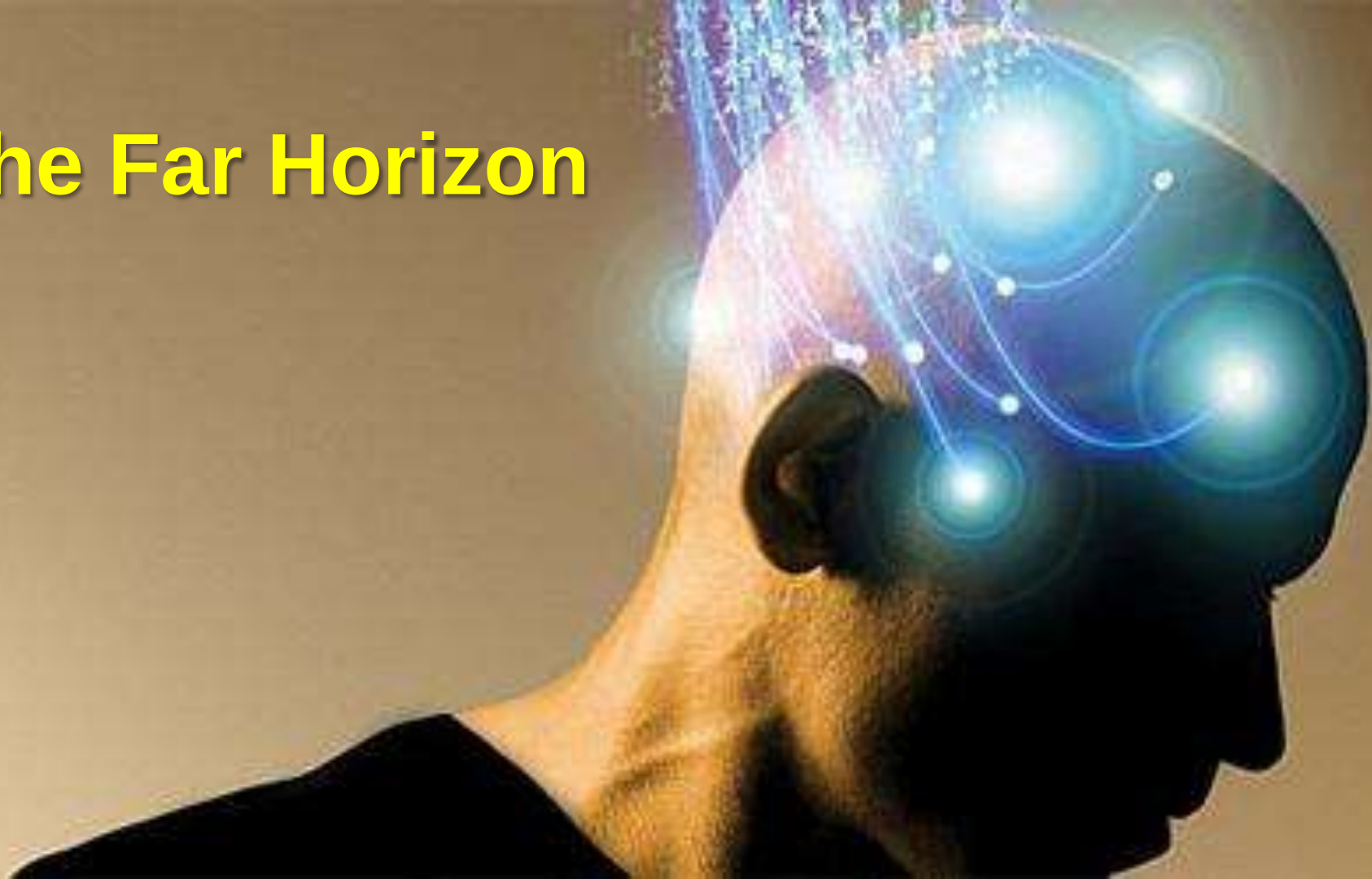
Cross Cultural Competency
Cognitive Load Management
Novel and Adaptive Thinking

Trans Disciplinarity
New Media Literacy
Social Intelligence

Design Mindset
Virtual Collaboration
Computational Thinking

Sense Making

The Far Horizon





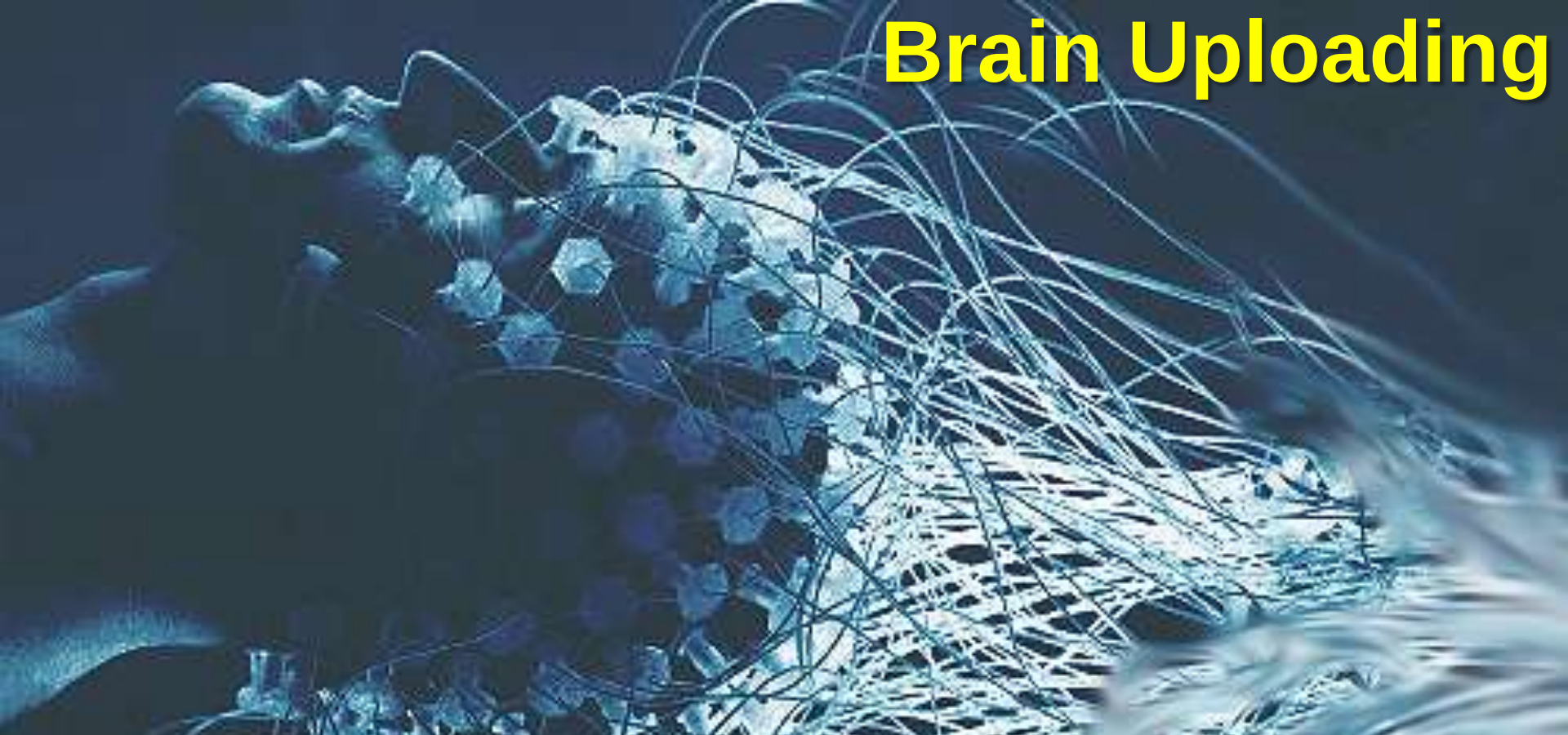
The Simulated Reality Singularity

A World of Multiple Actors

Robots, Androids, Holograms, Display-based AI Manifestations



Brain Uploading



Exocortex – External Faster Brains?

A Digital Ethics Treaty?





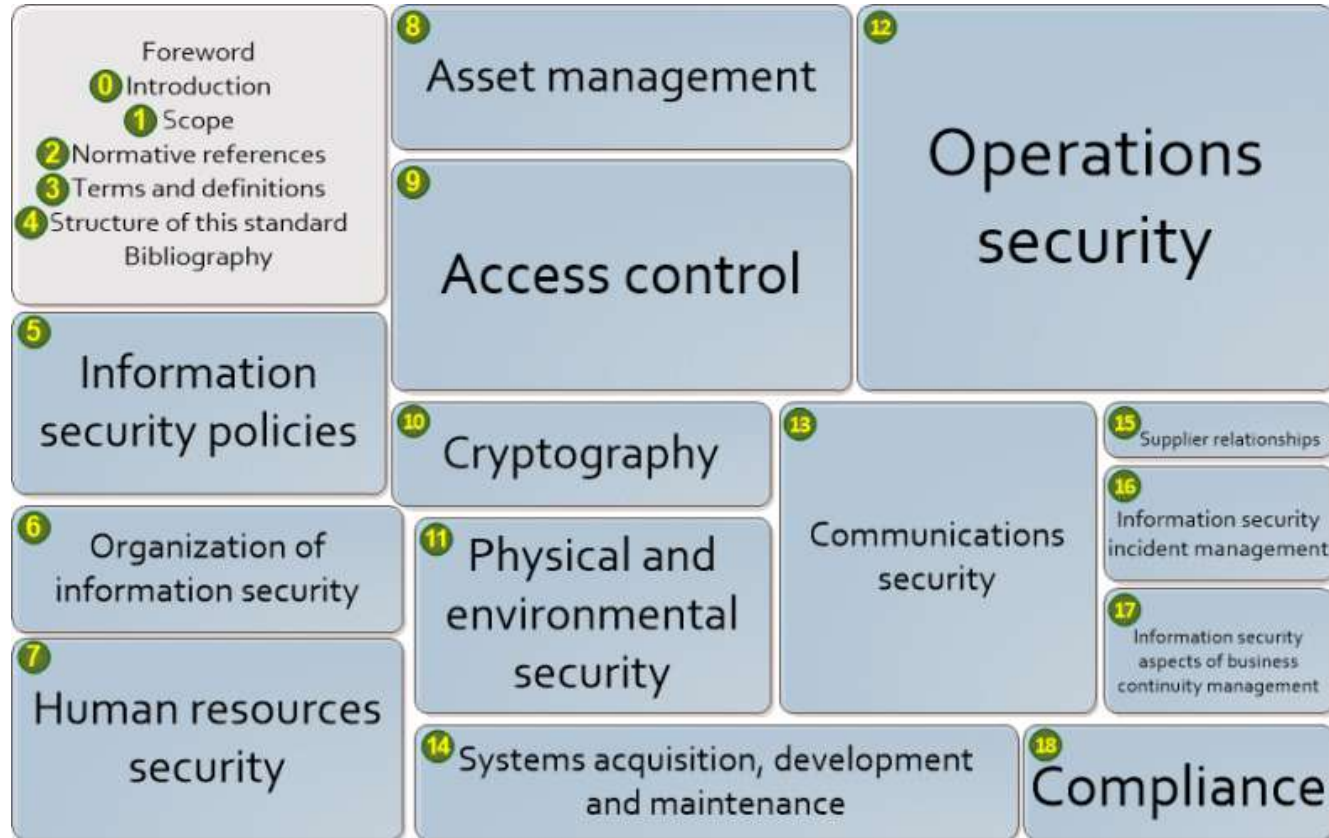
So Where are we Going With This?



KIA MOTORS Thomson



Pre-emptive Security Reporting





Edit Group

Save Group

Load Group



Cases



Analytics



Case List

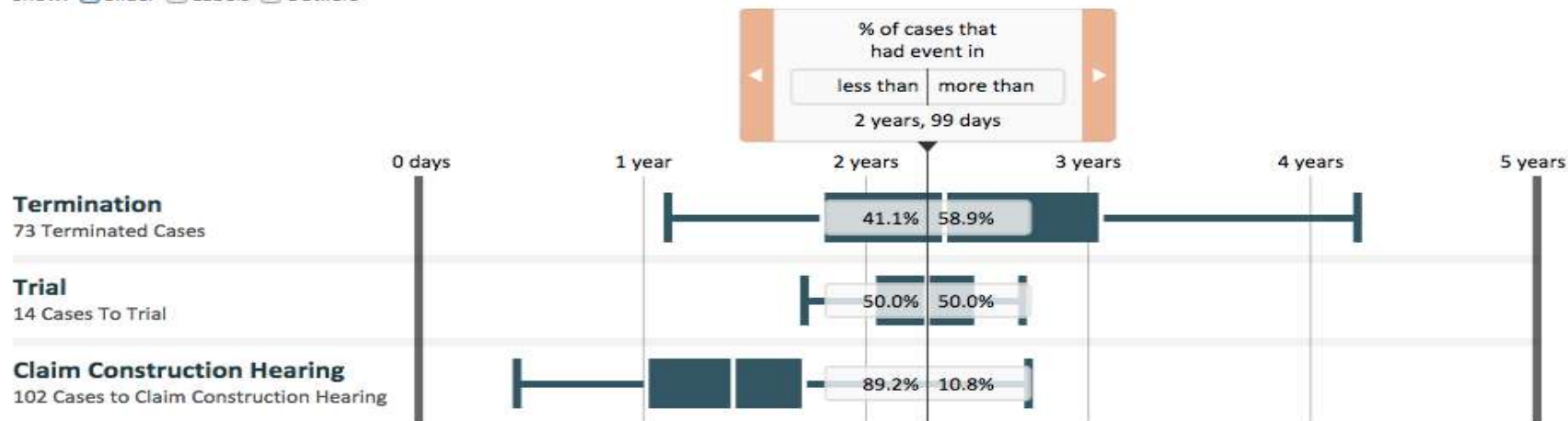
Showing **102** Patent cases with Apple Inc. or Apple Computer, Inc. as parties; with Claim Construction Hearing tag ; filed between 2000-01-01 and 2014-11-11 .

Summary

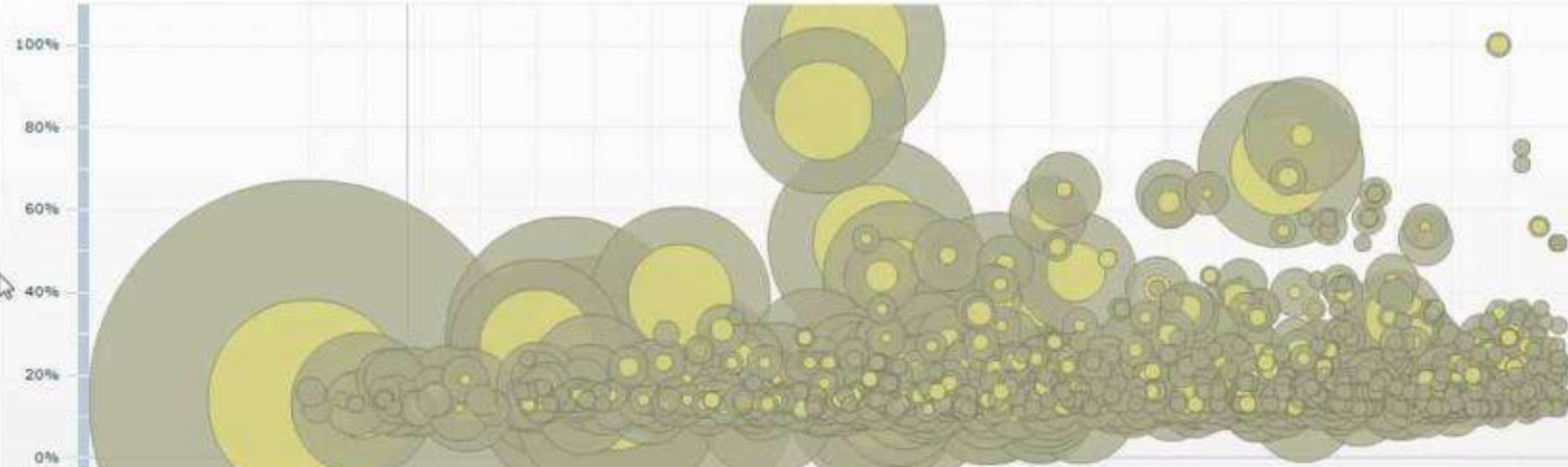
Timing

Patent Case Damages

Patent Case Resolutions

Show: ☒ Slider ☐ Labels ☐ Outliers

Understanding Timing Analytics

Timeline for your search, **miranda "fifth amendment"**Vertical axis: **Relevance** Show **all 1000** results sorted by: **Relevance**[what's this?](#)

**Fastcase - from Summarizing and
Categorising Cases to Citation
Analysis and Data Visualization**



Virtual Courts and Embedded Law

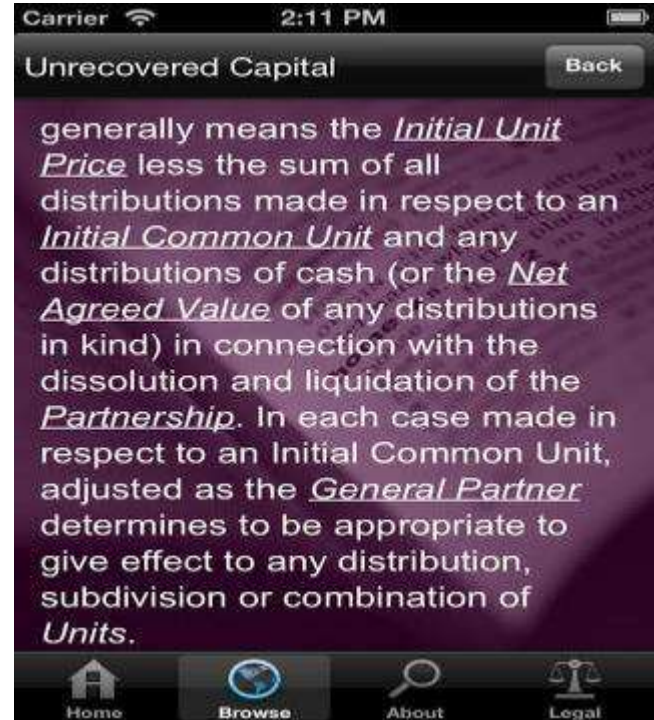
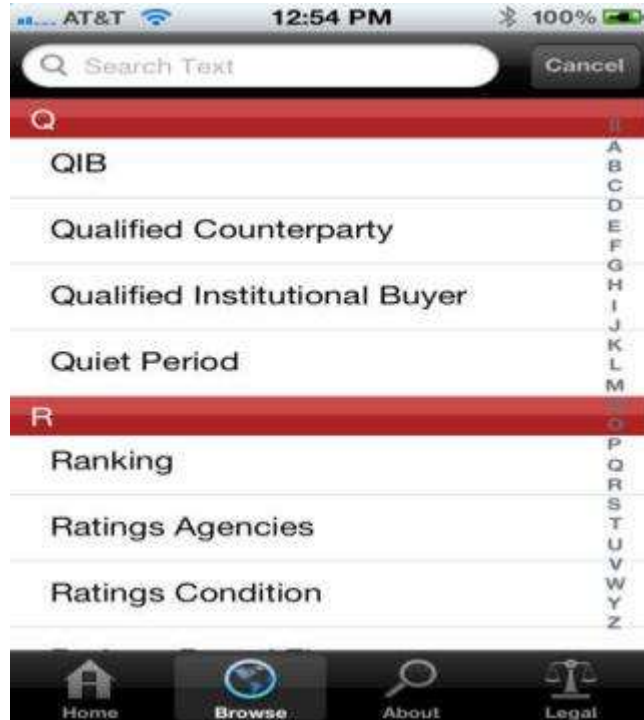


**AirBnB, Uber, Drones, Robots, Driverless –
How is Disruption Impacting the Law?**

Multi-Level Collaboration (Weightmans LLP)



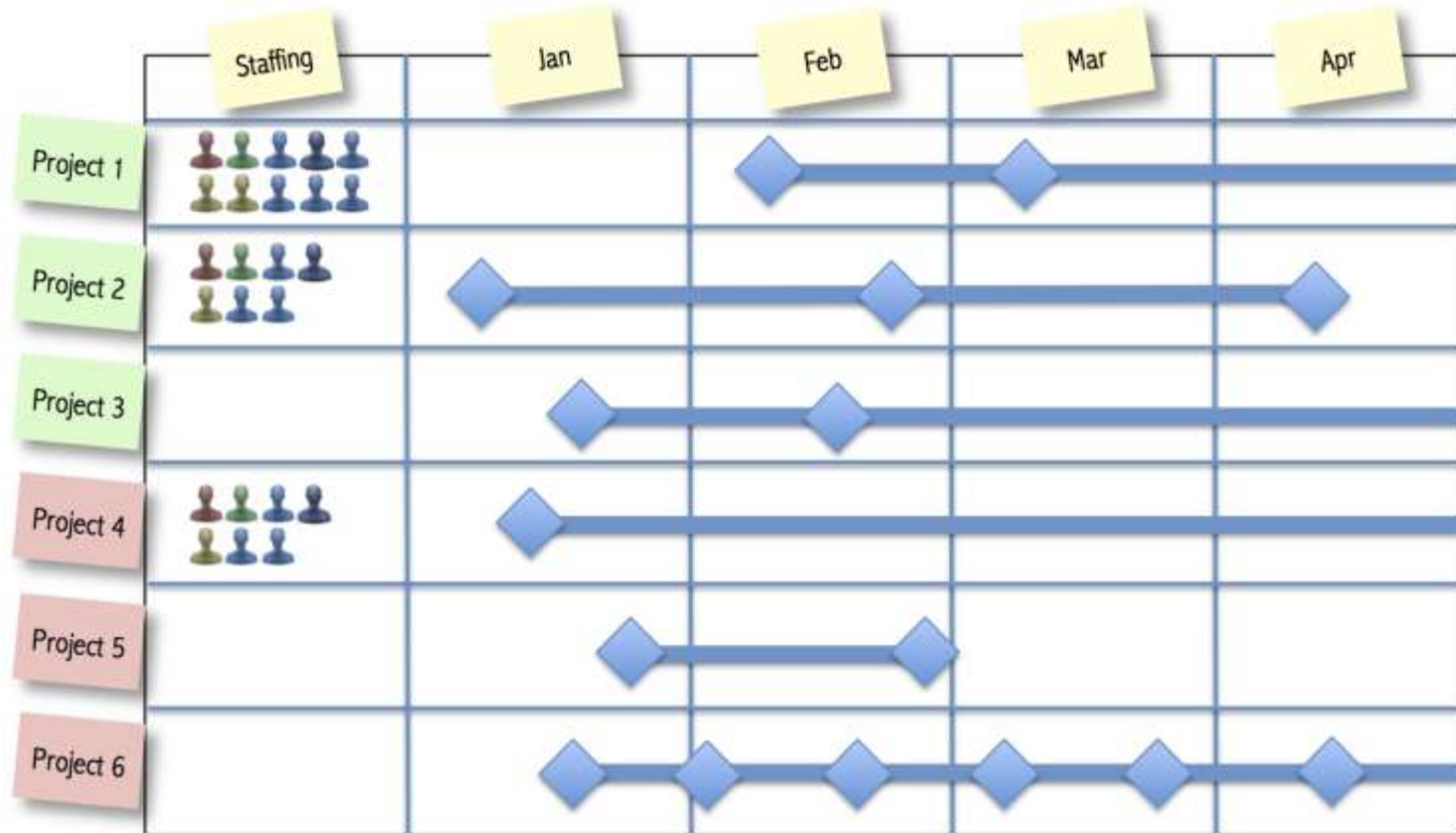
Creating Magic – Developing ‘Wow Factors’ for Different Customer Types



Unleashing Big Data (Eversheds Big View)



Process and Project Management (Seyfarth Shaw)



Unleashing and Embedding Technology

73%

*Capacity for Rapid IT-
Enabled Innovation:
Critical Differentiator*

88%

*Emerging Technology
Integral to Courts*



**Conclusion -
What are we
Asking of our
Law Firms?**



About Fast Future

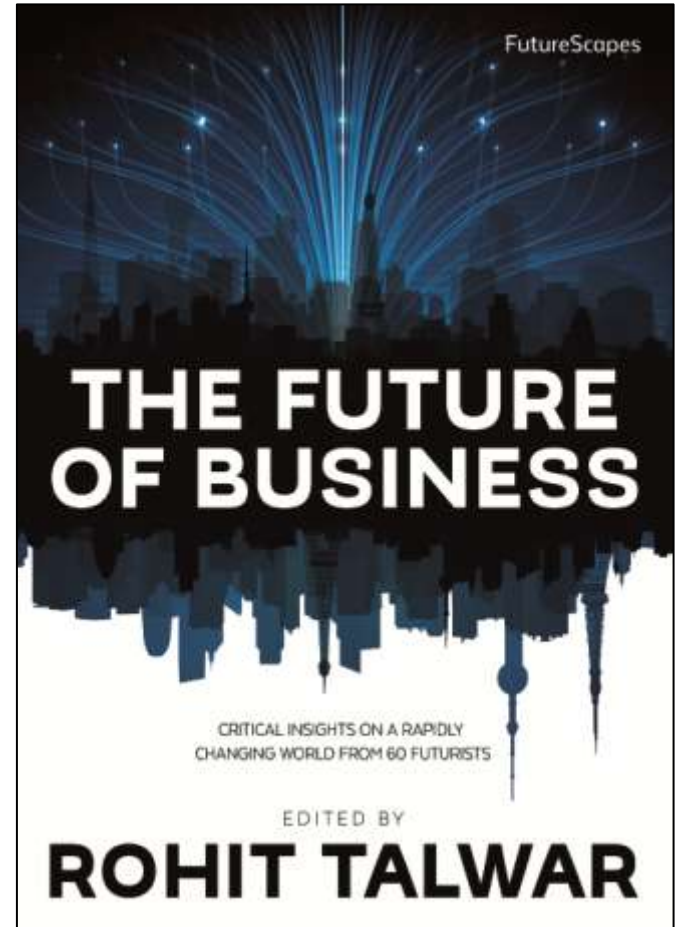
FutureScapes: The Future of Business

Edited By
Rohit Talwar
Launching June 2015

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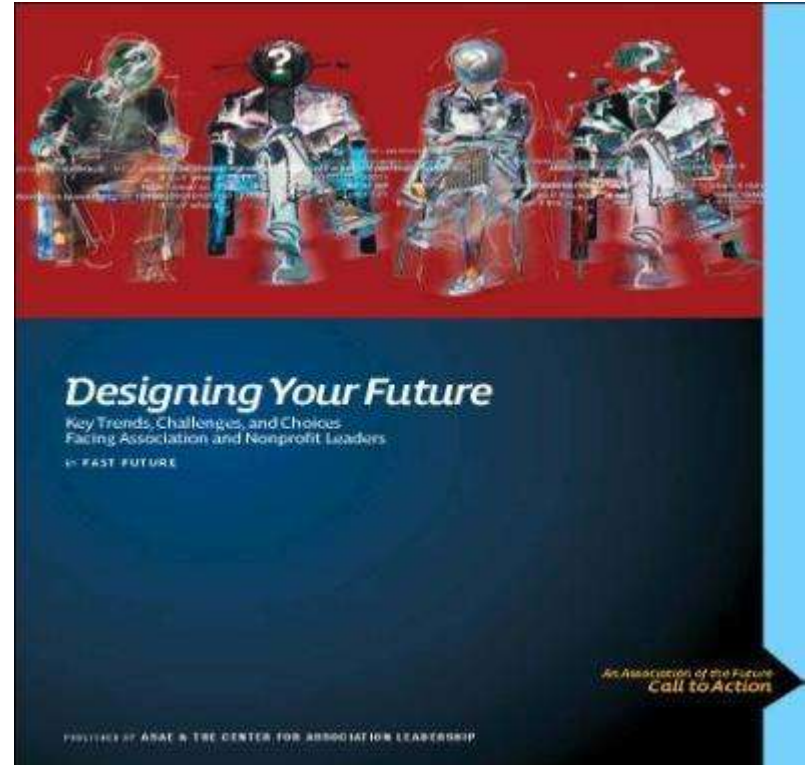
What We Do

- **Speaking and Moderating**
Delivering keynote speeches offering inspiring insights into a changing world and how others are responding to the future
- **Capacity Building / Future Leadership Programs and Events**
Designing high impact leadership development programs, workshops and events for leaders and decision makers in governments and businesses that encourage new thinking, bring the future to life and enable you to develop new strategies and action agendas
- **Foresight Research**
Helping you explore and understand the roadmap of economic, business, scientific, technological, social, political and environmental trends, forces, developments and ideas shaping the future of the sector
- **Investor Support**
Advising on emerging sectors, technologies and scientific developments
- **Exponential Growth Consulting**
Helping you create future strategies designed to deliver exponential rates of improvement, develop new business models and drive innovation to respond to and create disruptive change
- **Business Design and Innovation**
Facilitating development of innovative, future proofed designs for organisations, products, services, processes and customer experiences



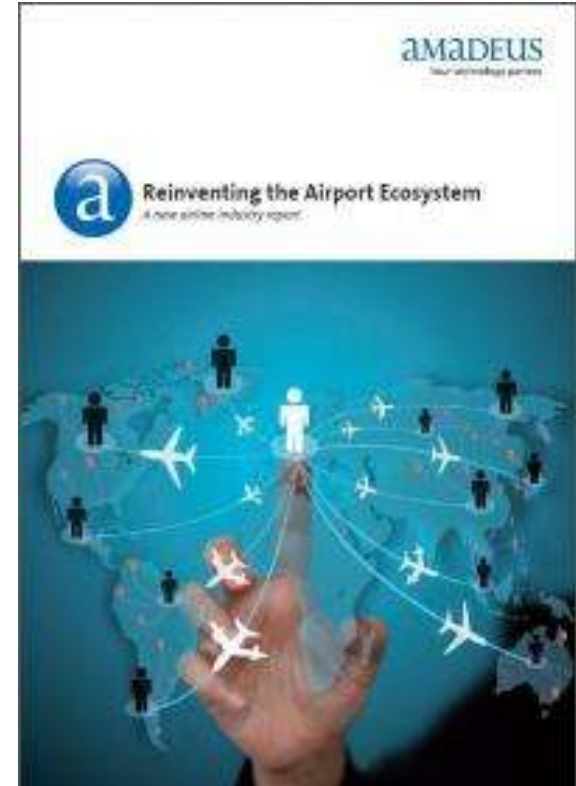
Designing Your Future - Key Trends, Challenges and Choices

- 50 key trends
- 100 emerging trends
- 10 major patterns of change
- Key challenges and choices for leaders
- Strategic decision making framework
- Future Scenarios
- Key futures tools and techniques



Reinventing the Airport Ecosystem

- Drivers of change
- Science and technology advances
- Customer expectations
- Innovation priorities
- Strategies and business models
- Surveys to test ideas and scenarios on a global audience
- Models for managing tomorrow's airport ecosystem
- http://www.amadeus.com/airlineit/resources/reinventing_the_airport_ecosystem/index.html?OADS=78



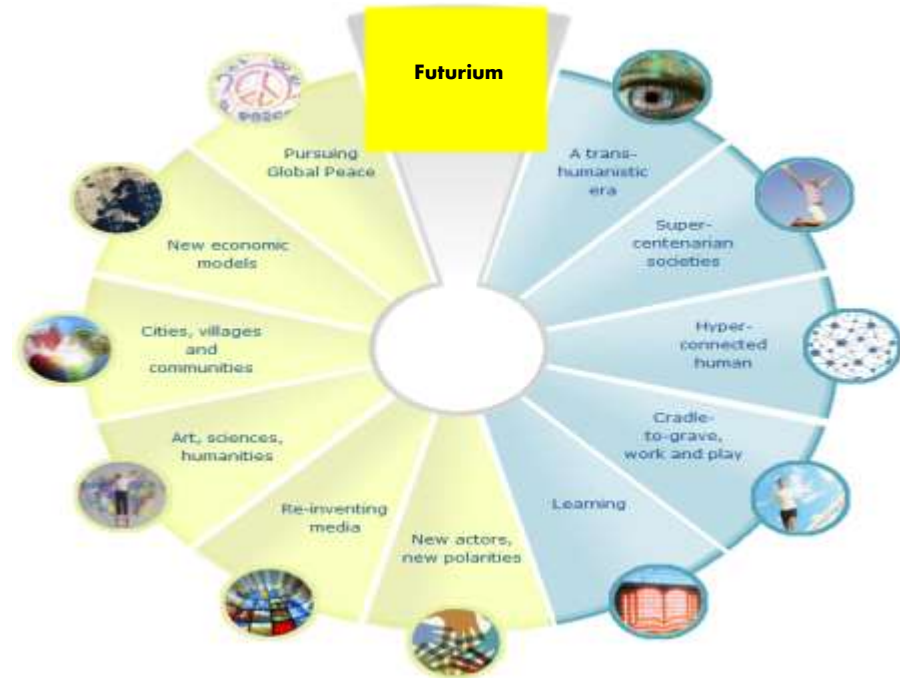
ILTA Legal Technology Future Horizons Project

- Key business and legal trends and forces
- Timeline of emerging technologies and IT developments with high potential legal impact
- Explores IT's transformative role in future legal business models and service differentiation
- Defines strategic business and IT imperatives
- 6 sponsors - combined desk research, interviews with managing partners, CIO's, vendors, futurists and technologists, global surveys on the business applications of IT and emerging technologies
- <http://www.iltanet.org/Downloads/LTFH-Report.pdf>
- 200 emerging technology developments
<http://www.iltanet.org/Downloads/TechTimelineAppendixLTFH.pdf>



Futurium - Science and Technology Transformations Shaping the World of 2050

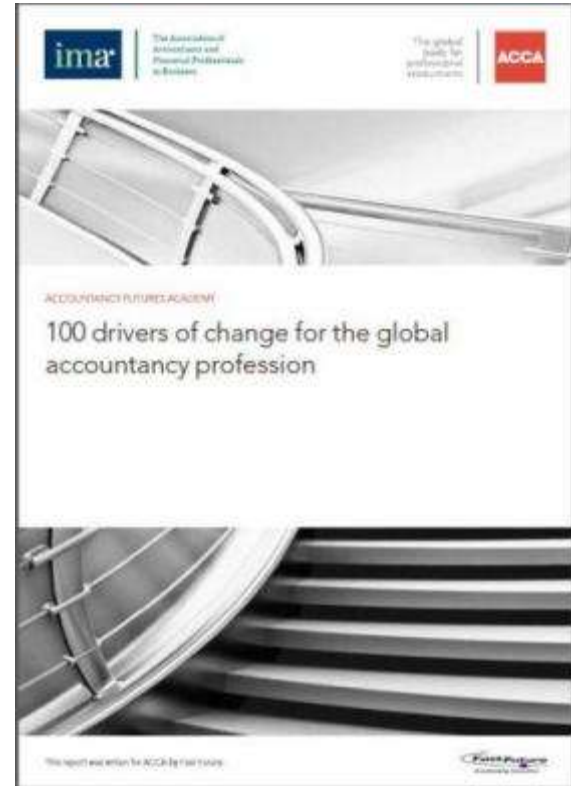
- European Commission project
- Examined 87 potential developments and trends
- Clustered into 11 overarching future societal themes
- Content identified through a combination of crowdsourcing via the Futurium web platform, suggestions from the EC, and ideas proposed by our team
- <http://ec.europa.eu/digital-agenda/futurium/>



ACCA / IMA – 100 Drivers of Change

- Identifies 100 drivers of change impacting business and the accounting profession
- Outlines future scenarios for the accounting function
- Highlights strategic imperatives for business and the accounting function
- ‘5 minutes on’ executive summary
- Report:

www.accaglobal.co.uk/en/research-insights/accountancy-futures/drivers-change.html



Hotels 2020

- Identifying key drivers of change for the globally branded hotel sector over the next decade
 - Examining the implications for:
 - Hotel strategy
 - Brand portfolio
 - Business models
 - Customer targeting
 - Innovation
- <http://www.amadeus.com/hotelit/beyond-segmentation.html>



Rohit Talwar

- Global futurist and founder of Fast Future Research.
- Award winning speaker on future insights and strategic innovation – addressing leadership audiences in 40 countries on 5 continents
- Author of *Designing Your Future*
- Profiled by UK's Independent Newspaper as one of the Top 10 Global Future Thinkers
- Led futures research, scenario planning and strategic consultancy projects for clients in telecommunications, technology, pharmaceuticals, banking, travel and tourism, environment, food and government sectors
- Clients include 3M, BBC, BT, BAe, Bayer, Chloride, DTC De Beers, DHL, EADS, Electrolux, E&Y, GE, Hoover, Hyundai, IBM, ING, Intel, KPMG, M&S, Nakheel, Nokia, Nomura, Novartis, OECD, Orange, Panasonic, Pfizer, PwC, Samsung, Shell, Siemens, Symbian, Yell , numerous international associations and governments agencies in the US, UK, Finland, Dubai, Nigeria, Saudi Arabia and Singapore.
- To receive Fast Future's newsletters please email rohit@fastfuture.com



Videos of Rohit Exploring the Future

- The World in 2025 - Driving Forces, Global Challenges and Potential Disruptions (35 mins) <http://vimeo.com/93302584>
- Anticipating 2025 - Driving forces, global challenges and potential disruptions (30 mins): <https://www.youtube.com/watch?v=kwcLQClfxpY>
- A World in Transition (60 mins):
<http://www.colliers.com/en-gb/uk/insights/multimedia>
- Future of Travel (22 mins)
http://www.travelmole.tv/watch_vdo.php?id=14300
- Parallel Revolutions Impacting Global Labor: Bloomberg TV Interview (4 mins): <http://www.bloomberg.com/video/parallel-revolutions-impacting-global-labor-talway-T0tJZRX6TpGlxjKShTzv~w.html>

Useful Sources

- Genetic profiling - <https://www.23andme.com/>
- X Prize - Breakthrough innovation projects - <http://www.xprize.org/>
- Google brain uploading - <http://digitaljournal.com/article/352787>
- Brain mapping projects - <http://www.technologyreview.com/news/513011/why-obamas-brain-mapping-project-matters/>
- Global Future 2045 (immortality) <http://2045.com/>
- Human enhancement - http://en.wikipedia.org/wiki/Human_enhancement
- Wearable technology – Google Project Glass - <http://www.google.com/glass/start/>
- Emotiv Epoc Brain-Computer Interface - <http://www.emotiv.com/>
- AI Essay Grading Software - <http://www.nytimes.com/2013/04/05/science/new-test-for-computers-grading-essays-at-college-level.html?pagewanted=all&r=0>
- Digital / Crypto currencies –
 - <http://www.abc.net.au/technology/articles/2013/09/25/3855973.htm>
 - <http://en.wikipedia.org/wiki/Cryptocurrency>
 - http://en.wikipedia.org/wiki/List_of_cryptocurrencies
- Autonomous cars -
 - <http://www.engineering.com/DesignerEdge/DesignerEdgeArticles/ArticleID/6357/Tesla-Working-on-Autonomous-Car.aspx>
 - <http://www.popsci.com/cars/article/2013-09/google-self-driving-car>

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LinkedIn	http://www.linkedin.com/in/talwar
Past presentations	http://www.slideshare.net/fastrohit
Newsletter signup	http://fastfuture.com/?page_id=13

Our current charitable campaigns:

Charlotte Talwar's fundraising project to build a new toilet block for Sunrise School Ghana

<http://www.gofundme.com/7gaxho>

Street Kids International - Helping Street-Active Youth In Ghana Start Businesses

<https://www.globalgiving.co.uk/projects/help-street-active-youth-in-ghana-start-businesses>

Background Notes

Here come the robot lawyers

- Legal work is already being computerized by some firms, including the drafting of simple contracts and the search for evidence in reams of documents.
- Winston & Strawn is among the law firms that have adopted legal review technology known as predictive coding. Lawyers mark up relevant information in a subset of documents and feed that to a computer program that uses it as a basis for analyzing the entire data set. The software then surfaces potentially relevant evidence for review by lawyers.
- In a recent study, the firm found that its software was more effective than human reviewers in surfacing relevant documents, and helped it complete the review process in about a third of the time.

Here come the robot lawyers

- Industry experts say computers will soon be able to perform even more advanced legal functions than document reviews.
- New York Supreme Court censured law firm Cohen & Slamowitz for relying on technology to automatically send collection letters and file tens of thousands of lawsuits each year without reviewing the case files.
- In addition, the Electronic Frontier Foundation has accused Warner Bros. of using software algorithms to file mounds of erroneous copyright-infringement notices for online video sites like YouTube without actually reviewing the files in question.

Software could kill lawyers

- Daniel Katz, an assistant professor at the Michigan State University College of Law is among the vanguard of legal researchers working to bring empiricism and artificial intelligence into law.
- Katz's focus is "quantitative legal prediction" with which "Lawyers will be able to say to their clients, 'Here's what we think your chances are—and based on 10,000 cases that are just like yours, here's what the computer thinks your chances are,'"
- Many law firms now use "e-discovery" tools that can scan large caches of evidence in search of interesting facts and figures.
- Firms also have software to draft legal documents in a fraction of the time a human would take.

Software could kill lawyers

- A few services on the horizon might do even more—negotiate the terms of a contract, for instance, or determine whether or not you should sue.
- Automation will bring legal services to the masses.
- Software could potentially step in when to fight your mortgage lender, draw up contracts to start a small business, or sue for child-support payments.
- Several legal tech companies have created programs that build these documents automatically.
- Silicon Valley law firm Fenwick & West developed a system that automatically creates the documents that startups need when incorporating.

Software could kill lawyers

- Katz and other researchers are working on ways to extract and interpret historical data—one project, called RECAP, aims to build a free mirror of PACER the federal courts' database system, which charges a fee for access.
- In 2008, a group of attorneys and technologists at Stanford created the Intellectual Property Litigation Clearinghouse, a project that tracks more than 100,000 patent and trademark lawsuits. The database—which Stanford spun off into a start-up called Lex Machina—is the most comprehensive collection of patent suits ever assembled.
- As Daniel Katz sees it, attorneys will be able to outsource the worst of the jobs to machines, while they'll increasingly focus on managing client relationships and ensuring the computers are doing their jobs.

Using data to predict supreme court's decisions

- Katz and his colleagues have created an algorithm that has accurately predicted 70 percent of the Supreme Court's overall decisions, and 71 percent of the votes of individual justices -- more robust results than any other predictive study done to date.
- Applying various techniques from machine learning, the algorithm takes into account dozens of variables before it makes a prediction.
- Katz believes the results represent a major advance in how science and data can be used to help predict legal outcomes. But that the best approach to predictive models is a combination of his analytics-based prediction and human expertise.
- In a tournament aptly named "FantasySCOTUS", sponsored by Thomson Reuters, legal scholars, predictive experts and everyone were pitted against the algorithm to predict outcomes before they occur.
- "It's like Fantasy Football for law geeks," Katz said. "We expect that the combined predictions of the computer and the crowd will produce the most accurate outcomes."

Predicting the Behavior of the Supreme Court of the United States: A General Approach

- Abstract: A model was designed to predict the voting behavior of the Supreme Court of the United States. Using the extremely randomized tree method, a method similar to the random forest approach, as well as novel feature engineering, we predict more than sixty years of decisions by the Supreme Court of the United States (1953-2013).
- The model is distinctive as it is the first robust, generalized, and fully predictive model of Supreme Court voting behavior offered to date.
- With a more sound methodological foundation, results represent a major advance for the science of quantitative legal prediction and portend a range of other potential applications

Lawyer, Meet Robot: The future of lawyers and technology

- Interview with Ed Walters, adjunct law professor at Georgetown and co-founder of Fastcase.
- Fastcase software is an example of disruptive legal technology: “We’re trying to replace very expensive editorial operations with very intelligent algorithmic ones... Things that used to be done by lawyers and paralegals, like summarizing cases or categorizing cases into key number systems or taxonomies, we can now replace with things like citation analysis and data visualization.”
- One of the main benefits of machines is their ability to assist lawyers in making data-driven decisions, which could open up more opportunities for lawyers and clients.
- One of the promises of computers is that lawyers will have more data at their fingertips than ever, with machines capable of analyzing it quickly from multiple logical angles.
- As computers continue to enter nearly every aspect of our day-to-day lives, we can also expect to see legal practices devoted solely to machine matters.

Lawyer, Meet Robot: The future of lawyers and technology

- “There will be people with robotics practices.”
- Robots will force legal practitioners and scholars to enter serious legal and ethical debates, for example, at present there is limited legality around new technology, such as drones, and laws for self-driving cars also remain to be determined.
- “The important skill is for lawyers to be able to think about how to apply existing law to new facts... and how to figure out when you need new laws altogether.”



Legal Futures, 12/1/2014, <http://www.legalfutures.co.uk/latest-news/report-ai-will-transform-legal-world#>

Report: artificial intelligence will cause “structural collapse” of law firms by 2030

- Robots and artificial intelligence (AI) will dominate legal practice within 15 years, perhaps leading to the “structural collapse” of law firms.
- *Civilisation 2030: The near future for law firms*, by Jomati Consultants, foresees a world in which population growth is actually slowing, with “peak humanity” occurring as early as 2055, and ageing populations bringing a growth in demand for legal work on issues affecting older people.
- Aging societies means
 - more advice needed by healthcare and specialist construction companies on the building and financing of hospitals
 - Advising pension investment businesses
 - Financial and regulatory work around the demographic changes to come
 - more age-related litigation
 - IP battles between pharmaceutical companies, and around so-called “geriatric-tech” related IP.
- The human part of lawyering would shrink

Legal Futures, 12/1/2014, <http://www.legalfutures.co.uk/latest-news/report-ai-will-transform-legal-world#>

Report: artificial intelligence will cause “structural collapse” of law firms by 2030

- The human part of lawyering would shrink.
- The managing partners of 2030 are in their 30s today and will embrace the advantages of AI.
- Alternative business structures (ABSs) in particular will be receptive.
- For associate lawyers, the rise of AI will be a disaster.
- Small, specialist advisory firms and those focused on process matters might not be affected by AI.
- While some global firms already have more than 50% of their revenues and staff based outside the ‘home nation’, by 2030 this will become standard for nearly all major commercial firms.

Report Claims Robots Will Replace Lawyers By 2030

- These changes would bring about a very different looking law firm, structurally, with virtually no place for lower level associates or assistants. Practices would have to shift their business model to focus on advisory work and the knowhow of high level employees.
- While the upheaval in career paths and implied “structural collapse” of law firms can seem troubling, the idea of leaving the grunt work to robots – in the law world as well as other data driven businesses – thus leaving the critical/creative thinking and empathizing to humans, could be a more fulfilling professional future for all.

Robot doctors, online lawyers and automated architects: the future of the professions?

- The book Tomorrow's Lawyers (2013) predicts the creation of eight new legal roles at the intersection of software and law such as : legal knowledge engineer, legal technologist, project manager, risk manager, process analyst.
- Whether we call these new positions lawyers or not, the legal sector will survive.
- Law careers of the future "... will be people working in the legal sector but offering legal services and legal help in new ways."
- The "latent legal market", a disenfranchised sector of potential customers estimated to be worth as much as £27bn, representing an unmet demand for legal services.

How IBM's Watson will impact the legal profession

- As part of its thoughtful launch to deliver Watson's cognitive computing capabilities through services, IBM has begun to partner with different companies in different fields, including law.
- This is an interesting go-to-market approach for IBM, to create an ecosystem around a nascent technology, with analogues to Google search or Apple's iTunes (or for the true aficionados, to Salesforce's Appforce).
- Systems like Watson are very unlikely to displace the reasoning processes of lawyers.

How IBM's Watson will impact the legal profession: 10 Predictions

1. Watson is almost certainly the most significant technology ever to come to law, and it will give lawyers permission to think innovatively and open up the conversation about what is possible in a field that has been somewhat “stuck.” IBM and Sloan-Kettering have collaborated on a video talking about how Watson can help treat cancer patients better. We have no videos like that anywhere in law—maybe we should. (*strategic opportunity?*)
2. Watson will force a much more rigorous conversation about the actual structure of legal knowledge. Statutes, regulations, how-to-guides, policies, contracts and of course case law don't work together especially well, making it challenging for systems like Watson to interpret them.

How IBM's Watson will impact the legal profession: 10 Predictions

3. Watson will open up new possibilities (and challenges) for teaching. Within a few years, many or most of the Socratic method questions that get posed in a first-year contracts class will likely be answerable by students referencing their ContractsWatson at their desk. Many professors will hate this; most will recognize it as no different from the introduction of the calculator to algebra class in 1973.
4. Watson will lead at least a few enlightened law schools to walk down the block to engineering schools to try to integrate other disciplines into the practice of law. ("The MIT School of Law.")
5. Watson should make complexity more manageable, reducing the cost of law.

How IBM's Watson will impact the legal profession: 10 Predictions

6. Watson will empower younger lawyers—who are traditionally at the bottom of the hierarchy and have now been dislocated by today's job market—since they will likely be the first to embrace it.
7. Watson will catalyze better organization of legal information and legal data, forcing organizations to better manage their current data and delivering substantial returns from this information management step alone. It will also help clarify what lawyers do and how they add value, and it will focus attention on the regulatory model for lawyers.

How IBM's Watson will impact the legal profession: 10 Predictions

8. Watson may be used as a dedicated or embedded service for specific legal workflows as much as it is as general purpose tool. Think how “smart” email programs now suggest possible addressees based on prior group emails
9. Watson (or something like it) will likely become a standard authoring/query model. Just as most companies today write their Web information to optimize for Google's search, professional knowledge (which is published in a multi-tier structure) will want to be better synthesized through a system like Watson and will adopt new authoring and publishing norms.
10. Watson won't displace lawyers—it will make law more accessible and transparent, as it should be.

How IBM's Watson will impact the legal profession

- Going forward, expertise in analytics intersected with substantive legal knowledge is the source of significant value creation.
- But it's equally true Watson may illuminate how rare it is that lawyers have to solve “bespoke” reasoning problems, and how common it is to apply “proven” approaches in slightly different contexts.
- Watson doesn't have to displace legal reasoning to have an impact.

Tim Hwang is working toward the death of practice-as-usual

- Hwang set up his own law firm that would use technology to automate as much paperwork as possible, freeing up lawyers to concentrate on more complex matters.
- The name of the firm, Robot Robot & Hwang, was originally a joke (Hwang lists his two senior partners as Apollo Cluster, a supercomputer that graduated from Harvard Law School, and Daria, an XR-1029 computer that has a JD from Boalt Hall and an LLM from Stanford), and Hwang says he'll probably change it at some point.
- He says law firms will eventually be mostly automated, freeing up humans to handle complex matters as well as establishing large R&D divisions.

ABA Journal, 9/9/2014,

http://www.abajournal.com/legalrebels/article/seeing_the_possibilities_of_automation_tim_hwang_is_working_toward/?utm_source=maestro&utm_medium=email&utm_campaign=daily_email

Tim Hwang: The Busiest Man On The Internet

- Hwang has assembled a group of programmers to work on a free software package to automate the document review and IPO-form-filling work that's assigned to a first-year law firm associate.
- "I was in it to kill it. I want to replace lawyers with code," says Hwang.

Hwang's legal innovation defense (LID) fund

- Currently, Hwang is proposing an idea called The Legal Innovation Defense (LID) Fund.
- The idea is simple: the LID Fund will create a collective insurance program that provides a defense system against the low probability, high impact possibility that a new technology in the legal space will be later discovered to have engaged in UPL, “The Uncertainty Loop”

Hwang's legal innovation defense (LID) fund

- “The Uncertainty Loop” is a simple idea – it works like this:
 - legal uncertainty in the doctrine around unauthorized practice of law (UPL) exists, mostly as a result of unclear regulations and sometimes even less clear judicial decisions,
 - this uncertainty creates risks for would-be entrepreneurs in the space, and also hinders the ability for those entrepreneurs to acquire capital to pursue innovative ideas,
 - this creates a relatively weak field of underdeveloped tools, which hinders adoption within the legal industry,
 - lack of adoption prevents momentum from gathering within the profession to clarify UPL rules and permit increased innovation activity, which starts the Uncertainty Loop again

Tomorrow's Lawyers: a virtual judiciary

- If the advantages of IT seen in other sectors were enjoyed by the courts, the labour-intensive, cumbersome, and paper-based systems for court administration could be replaced by an automated, streamlined, and largely paper-free set of systems that would be less costly, less prone to error, more efficient, and more accessible.
- If England seriously aspires to being a leading global centre for the resolution of disputes, then there should be state-of-the-art, leading-edge systems, processes, and infrastructure in place to support this.

Tomorrow's Lawyers: a virtual judiciary

- Looking ahead to the long-term future of courts and dispute resolution, one fundamental question sets the agenda: is court a service or a place?
- To resolve disputes, do parties and their advisers need to congregate together in one physical space, in order to present arguments to a judge?
- The growing use of video-calling and video-conferencing suggests there is enormous scope for virtual courts, if not for trials then for earlier hearings, when judges could sit in their chambers and all participants could attend remotely.
- For tomorrow's lawyers, appearance in physical courtrooms may become a rarity. Virtual appearances will become the norm, and new presentational and advocacy skills will be required.

The digitisation effect

- Digital estate planners (or digital asset management services) allow individuals to inventory all of their digital assets, including usernames, passwords and post-mortem instructions.
- A digital executor or verifier is named by the asset owner and this person is subsequently provided access to the digital property upon satisfactory provision of proof of death or permanent incapacity. The digital executor can then download, delete or provide to beneficiaries such assets in accordance with the instructions of the decedent.
- Working in collaboration with law firms, digital asset management companies can provide a viable and cost-effective service for law firm clients.

The future of working in law

- The legal profession is poised on the brink of an employment revolution that will unleash a “pent-up productivity” and bring it into line with other industries
- Private practice lawyers will increasingly be, for all intents and purposes, entrepreneurs, the report predicted. Some will continue in ‘sole practice’, although with much more specialised niche practices.
- High-quality project lawyers will evolve and compete to join rotating teams of professionals on an ‘as-requested’ basis, whilst others will develop hybrid careers such as ‘lawyer-knowledge curator’, ‘lawyer-analyst’, ‘lawyer-technologist’ or ‘lawyer-educator’, serving either fellow lawyers, clients or the general public.

The future of working in law

- Physical offices would exist alongside “increasingly de-centralised, distributed and diffuse entities that assign tasks not to the highest available biller in the office, but to the most appropriate and best aligned performer, regardless of location”, while process-driven work such as the creation and review of documents would be outsourced, eventually perhaps to computers.
- While lawyers and firms would be unwise to abandon caution in responding to the challenges he outlined, alternatively, “refusing to acknowledge that fundamental changes in society, markets and technology are bringing an end to the methods of law practice and legal service delivery that lawyers have embraced for decades” risk “a short road to ruin.”

Candidate will accept Bitcoin donations; are there legal issues?

- Rand Paul has announced his presidential campaign will accept Bitcoin campaign donations, capped at \$100, an option likely to appeal to young, technologically inclined voters.
- But the virtual currency is “largely untraceable,” raising questions about whether they could mask illegal contributions.
- Individual candidates can’t accept contributions from foreigners, corporations or straw donors.
- Candidates are expected to make their best efforts to ferret out illegal donations, and to identify donors who contribute more than \$200 a year.

Tax attorney will accept Bitcoin payments, but won't take digital currency on retainer

- Donald Katz, A U.S. business and tax lawyer has announced that he will take Bitcoin payments from clients, but will not accept the digital currency on retainer.
- The reason for the distinction is that Bitcoin is more like property than money, fluctuating in value.

Law firm accepts digital currency as payment

- Sheridan's, a London media law firm, has become what is believed to be the UK's first legal practice to accept the virtual currency bitcoin in payment for its services.
- A recent report by financial services company JPMorgan suggested bitcoin is a "vastly inferior" currency to established currencies that is "quite unlikely" to be recognised as legal tender by world governments.
- A briefing by home counties law firm Tees Law predicted bitcoin would become the subject of legal disputes.

Bitcoin specialist ABS rides litigation wave from volatile digital currency

- A partner at a small West London firm has taken 'niche' to a new level by specialising in litigation resulting from the first few turbulent years of digital currency bitcoin.
- He is acting for groups of clients who had lost money following the collapse of the leading bitcoin exchange Mt.Gox, based in Japan, and two UK exchanges, Moolah and MintPal.
- He said the absence of any regulation put people at risk.

Sidekik: A Blockchain Backed App To End Police Brutality

- The Sidekik app is intended to bring real-time accountability to law enforcement by streaming video and audio of encounters with police to Maidsafe, a decentrallized internet platform.
- The goal is to protect the integrity of evidence.
- The app will also connect users with an army of attorneys who will compete to be your representative if you happen to need them during an encounter with police.
- Sidekik seeks to connect attorneys with potential clients when they need legal representation the most.
- The Sidekik app can also be configured to require a pin from both the user and the attorney to stop the phone from recording and streaming data once it has started.
- Even if the officer takes and destroys the phone, Sidekik believes enough evidence would be gathered and stored in the cloud to show the nature of the encounter in court.

Sidekik, a civil rights Dapp



Bitcoin Magazine, 31/3/2015, <https://bitcoinmagazine.com/19813/sidekik-decentralized-video-streaming-storage/>

Blockchains, smart contracts, and the death of specific performance

- Imagine a world where specific performance of contracts is no longer a cause of action because the contracts themselves automatically execute the agreement of the parties.
- Escrow agents are replaced by rule- and software-driven technology.
- Instantaneous recording of property records, easements and deeds.

Blockchains, smart contracts, and the death of specific performance

- An auto owner who is late on his payment will be locked out of his car.
- Bitcoin 2.0 may create a world where these seeming marvels are an every-day occurrence, and technology renders some contract causes of action obsolete.
- The blockchain can be used to enforce certain pre-determined rules that can move an asset from person to person by agreement.
- Ownership of goods could be associated with a specialized coin, which can be transferred between parties along with payment in a virtual currency system, or in a specialized implementation of blockchain technology.

Blockchains, smart contracts, and the death of specific performance

- Because the contract automatically performs based upon the predetermined rules agreed to by the parties to the contract, there is little risk of fraud, and virtually no need for external measures to enforce performance of the agreement. Thus, no specific performance action would ever be necessary.
- Technology developers leveraging the power of blockchain technology may find themselves drastically altering contract law, and reducing the need for lawyers to bring certain claims in the future.

Blockchain Contracting: a critique

- Contracts are private legislation. They are already about as democratic and decentralized as they could possibly be. Sure, they are governed by the relevant laws of the relevant jurisdictions, but blockchain technology would not change that. In any case, the law of contracts already permits the parties to choose the law that will govern them (within reason), so that's pretty decentralized and democratic.
- What is not democratic and decentralized about commercial law is the fact that contracts tend to be drafted by the powerful and imposed upon people as take-it-or-leave-it deals through form contracting. Given the complexity of the technologies associated with Bitcoin, it seems unlikely that adding layers of technology to commercial law would render it more democratic and less centralized.

Cryptocontracts Will Turn Law Into a Programming Language

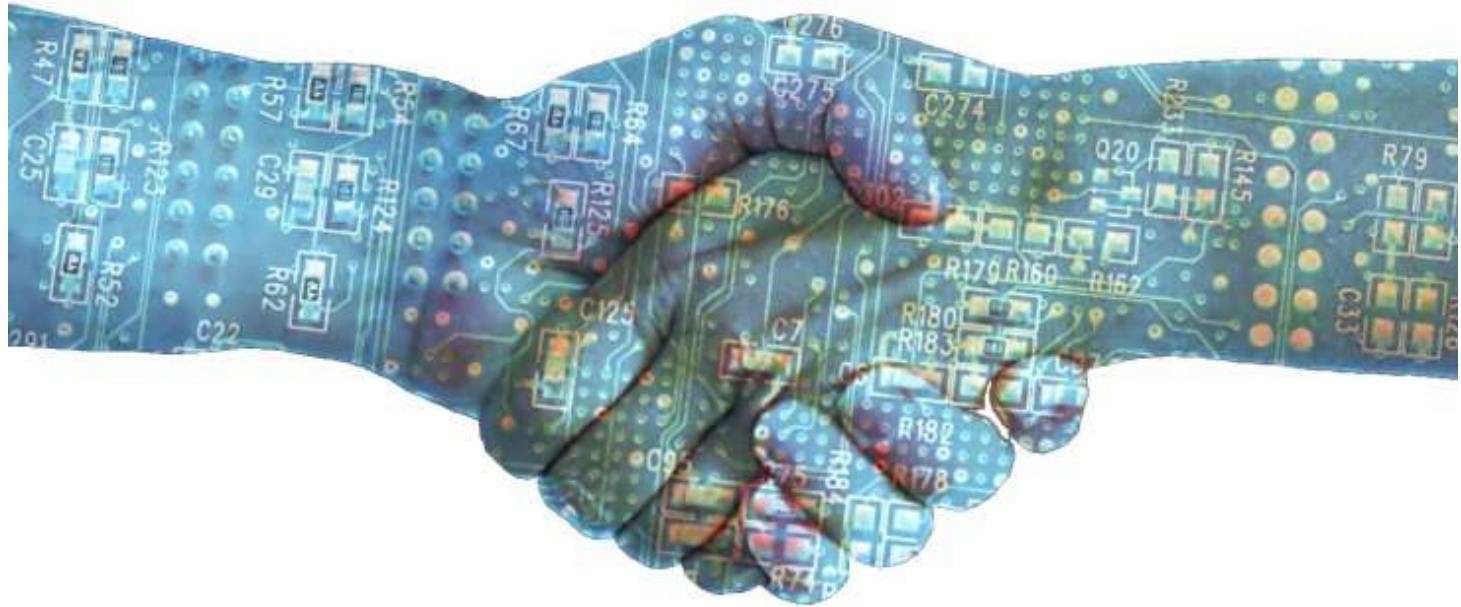
- If we combine self-enforcing contracts with the idea of biological data tracking then things could get really wild. Imagine that you are carrying a cell phone which measures your emotional state. You then enter a contract with an entertainment company to pay them a certain amount based on the intensity of emotion which you experience during the movie or video game you are using. Suddenly you would be no longer only figuratively buying an emotional experience when you purchase something, but you are directly incentivizing emotional payout based on a self-enforcing contract.
- We will be able to reprogram our lives based on self-enforcing cryptocontracts.

Cryptocontracts Will Turn Law Into a Programming Language

- The coming boom in cryptocontracts comes with its own risks as well. In a world where self enforced contracts will be an everyday occurrence, we must be much more careful clicking on those terms of service agreements which nobody reads. We are going to need to be well aware of what it is we are giving away. Similarly, we must each decide what we want to codify in our own lives. Although it may be possible, it may not be wise to establish contractual arrangements around romantic or family relationships.

Nasdaq's blockchain pilot--the end for lawyers?

- Nasdaq OMX group has announced that it will use bitcoin's blockchain technology to facilitate the trading of shares in its stock market, signalling the most significant show of interest from Wall Street in the cryptocurrency and its underlying technology.
- The pilot project, launched in Nasdaq Private Market, has the potential to transform the way private companies conduct pre-IPO trading
- If successful, could mean the end to lawyers and other middlemen traditionally used to verify the sales and transfers of shares of private companies.
- Nasdaq chief executive Robert Griefield said: "Utilising the blockchain is a natural digital evolution for managing physical securities."



International Business Times, 11/5/2015, <http://www.ibtimes.co.uk/nasdaq-blockchain-pilot-spells-beginning-end-lawyers-1500656>

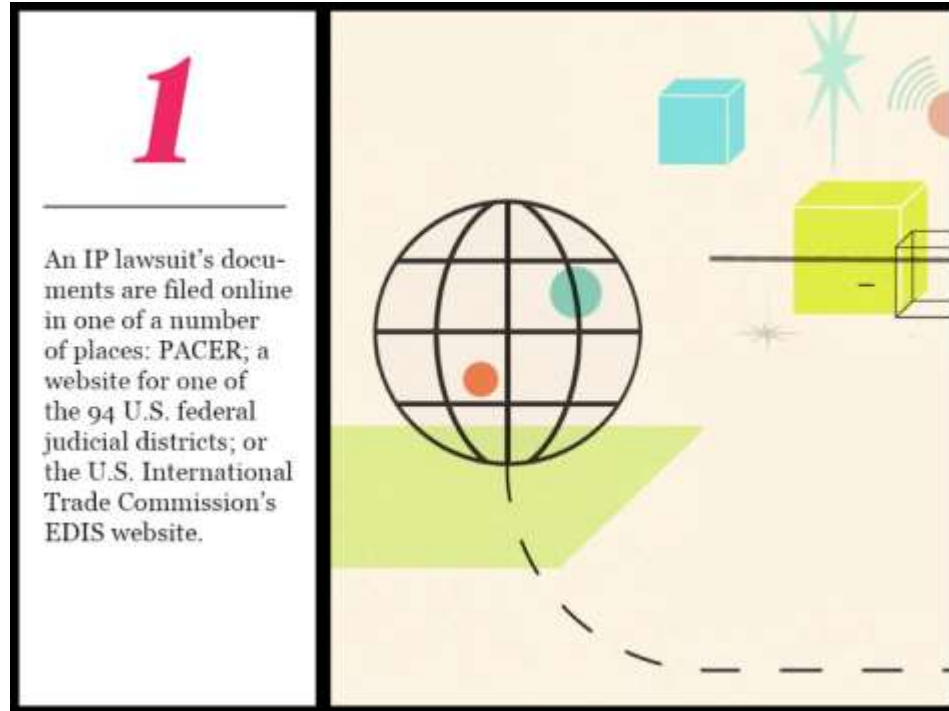
How Bitcoin Will Bring About A Legal Practice Revolution

- Computer code is not likely to be good at enforcing contracts where there are factual disputes involved in a breach, so lawyers will be needed on the front end to plan for such contingencies and also to set up a dispute resolution mechanism consistent with blockchain parameters and known deficiencies. What law controls a corporation that exists only on a computer network?
- Answers to these questions demonstrate that crypto law will definitely need its own legal code that outlines efficient enforcement and commercial mechanisms that allow for the efficiencies of blockchain transactions to be promoted while protecting clients' economic interests.
- Bitcoin will not only change the nature of many legal transactions in the future, it is also likely to spawn its own legal system as well.
- There are large shifts coming from the blockchain and related software programs that are being written today.
- Welcome to Law 2.0.

Supercharging Patent Lawyers With AI

- Lex Machina is in the vanguard of an emerging field known as legal analytics,
- Practitioners of legal analytics statistically parse the practice of law in search of data that can be used to augment, or in some cases replace, the more qualitative judgment of human lawyers.
- “We’re the moneyball of IP litigation,” says Josh Becker, Lex Machina’s CEO.
- The machine needs to understand phrases and strings of commonly used legal language as well as context.
- To help parse the legalese, Lex Machina has developed a set of rules—a sort of legal grammar for the machine. The company does this through an iterative process: A legal analyst reviews the algorithms’ results and, if necessary, corrects them, and then an engineer tweaks the algorithms

How the Lex Machina, the “law machine,” works



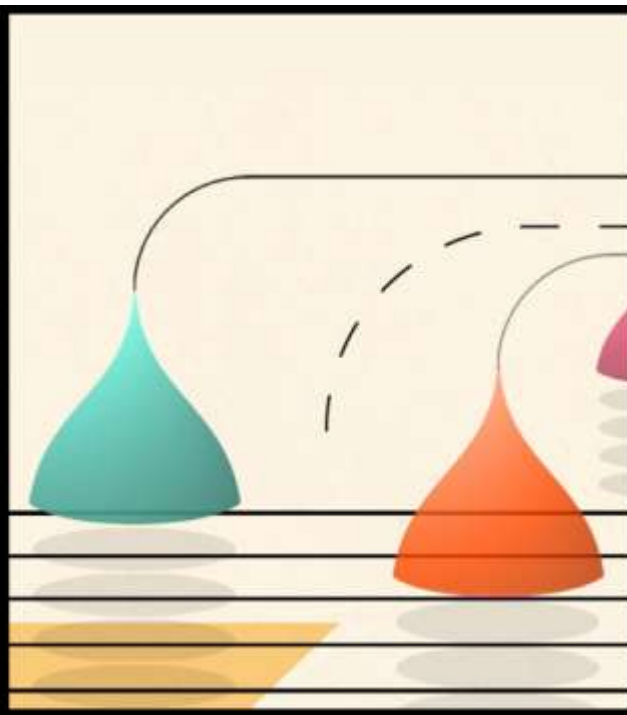
2

One of Lex Machi-
na's Web crawlers
collects the docu-
ments during its
nightly scans.



3

The Web crawler converts the documents by means of optical character recognition into searchable text and stores each document as a PDF file.



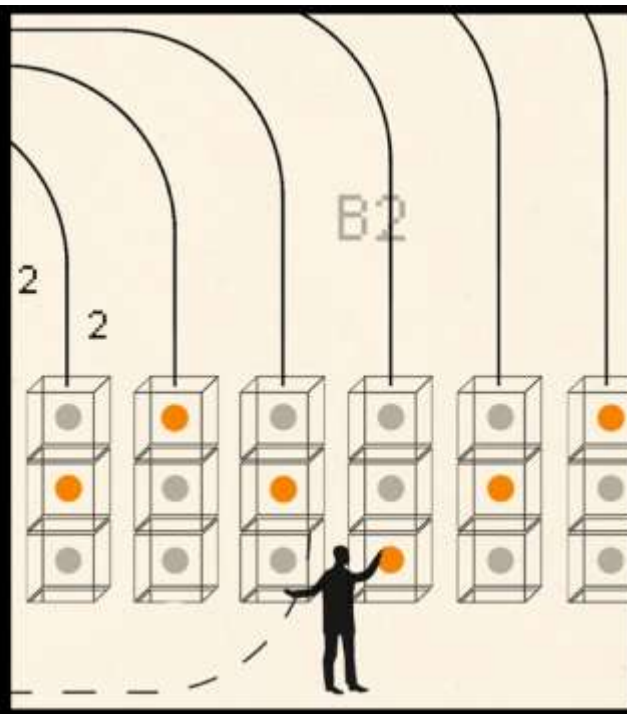
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If a document includes a patent number, the Web crawler grabs the patent abstract from the United States Patent and Trademark Office website.



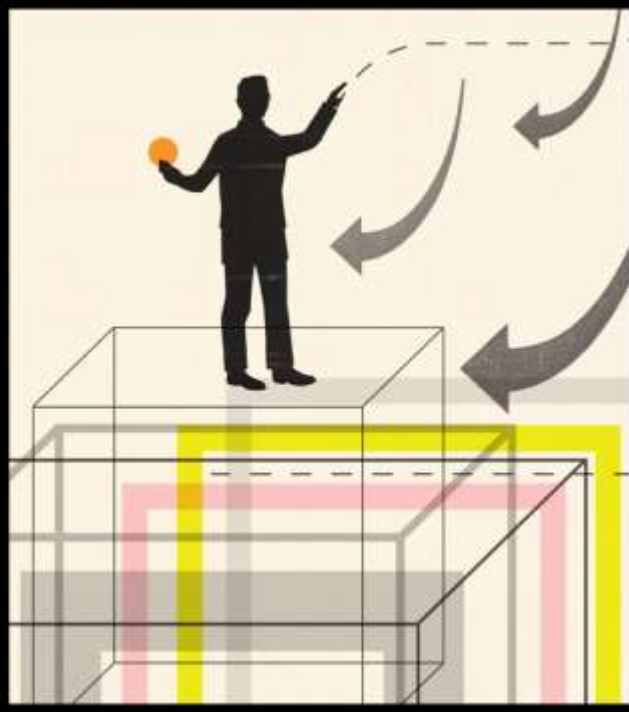
4

Lex Machina's proprietary natural-language processing system examines the documents and then classifies each case, standardizes entity names, and organizes the documents using 10 categories, including the complaint, the judgment, and any appeal.



5

Legal analysts review the classifications, correct any mistakes, and feed that information back into the algorithmic process to further refine the system's accuracy. In addition, certain aspects of all cases—including outcomes—are always reviewed and coded by legal analysts.



6

The data are indexed and stored in a software-as-a-service (SaaS) Web application, through which customers can access and search the data.



Lex Machina Study: Patent law changes, high-volume plaintiffs make for more litigation

- California-based Lex Machina, a now-private company initially set up by experts at Stanford University's computer science department and law school, released its first Patent Litigation Year in Review report in May 2014.
- The first annual report, which mostly focused on 2013, provides insights about judges, districts, parties, law firms and patents, and highlights trends and developments in patent litigation — something, the company contends, is needed because of the lack of reliable, unbiased data.
- Lex Machina mined the data for its report by “crawling,” or indexing, cases on PACER, an online service that provides access to federal court documents, and EDIS, the repository for all documents filed in relation to an investigation conducted by the U.S. International Trade Commission.

New Lex Machina study shows ‘dynamic’ patent litigation environment

- Lex Machina’s second annual Patent Litigation Year in Review said in 2014 not only did district court filings start to wane, but also Patent Trial and Appeal Board activity swung upward.
- Beth Provenzano, of the United for Patent Reform coalition, argues that the report paints a picture of a patent litigation system “urgently in need of legislative reform.”

Lex Machina's Legal Analytics Named 2015 New Product of the Year

- The American Association of Law Libraries (AALL) announced today that it has selected Legal Analytics, a first-of-its-kind software platform from Lex Machina, as its New Product of the Year for 2015.
- Lex Machina stands out from its predecessors as being the only start-up and legal analytics company to receive this prestigious award (which is not bestowed every year). Legal Analytics is revolutionizing the business and practice of law through the integration of the law and big data.

Lex Machina's Trademark Litigation Report

- The first comprehensive Trademark Litigation Report analyzed key metrics including filings, findings, remedies, and damages in trademark cases pending from 2009 through the first quarter of 2015.
- The report reveals insights to the timing of the 6,900+ cases where permanent injunctions were granted, and the over \$9 billion in cumulative damages awarded in trademark cases since 2009.
- Drawing on data from Lex Machina's proprietary intellectual property litigation database, these quantified insights into time-to-injunction, findings of infringement or fair use, and damages won can be used to help attorneys budget cases and craft winning strategies for trademark litigation.

Image Sources

Image Sources

Page number

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