Legal Risk and Compliance

Handout from a talk presented by Bob Semple at the Law Society on 9 November 2017

The complexity of the law is a mess, says Chief Justice

The Irish legal system has become extremely unwieldy due to the ever increasing numbers of regulatory bodies and appeal mechanisms, according to Chief Justice Frank Clarke. Other elements of the law, particularly environmental law, have become so complex that not even expert planning lawyers can make sense of them, Mr Justice Clarke said on Wednesday.

The Chief Justice was addressing a conference of the Law Reform Commission conference, which is seeking submissions from the public as part of its fifth programme of law reform.

Mr Justice Clarke compared the law to a house that has been built "higgledy-piggledy" over the years; a new part of the house is built on whenever a new need is identified. The end result was a house that looks awful and doesn't fulfil its function, he said.

The Office of the Ombudsman has 31 regulatory bodies under its remit, he noted. The Department of the Taoiseach lists 99 bodies that have regulatory powers in Ireland, not including local government bodies.

Judicial review

"It seems to me that what we have in Ireland is that every time there is a new form of right or obligation...we create a new regulatory body." He said that when a new body was set up, an associated appeal body was sometimes required. In some areas, there was a further right to appeal to the Circuit Court, in others to the High Court. Some bodies only allow appeals to the courts on a point of law while others allow an appeal on the merits of a case. And all parties have a right to mount a judicial review at any stage of the proceedings.

"I think we have got ourselves into the significant mess in this area. Perhaps the judiciary has played a role in creating this mess by creating concepts which make sense in a limited way but not quite so from a bigger picture point of view," Mr Justice Clarke said.

'Too unwieldy'

The current system of ad hoc bodies which are set up as the need arises is unwieldy, costly and "less likely to deliver on rights and obligations", he said. "It's far too unwieldy. I find it difficult not to believe that a more streamlined, straightforward and simplified system would make it much clear for parties."

Former attorney general and former minister for justice Michael McDowell told the conference that Ireland's current legal system was "not sustainable" and that "the volume of cases is such that it cannot be managed". He asked why the regulatory bodies of professions such as nurses, pharmacists and dentists could not take steps to discipline a member without referral to the High Court. Mr McDowell also cited the discovery process in civil cases as an area in which "we have overcomplicated our law". He said he was aware of one case where the claim was for €250,000 and the discovery process alone cost €200,000.

Article by Conor Gallagher, Irish Times, October 2017

If legislation and regulation is less than optimal, what chance for legal risk and compliance? Experience already reveals the shortcomings in risk management. Independent studies provide important insights too (see "Roads to Ruin" overleaf).

But risk and compliance professionals face even bigger challenges. This talk focuses on four transformational forces that will present fundamental challenges if legal risk and compliance is to keep pace.

ROADS TO RUIN

A STUDY OF MAJOR RISK EVENTS: THEIR ORIGINS, IMPACT AND IMPLICATION

This report investigates the origins and impact of over twenty major corporate crises of the last decade.

The crises examined involved substantial, well-known organisations such as Coca-Cola, Firestone, Shell, BP, Airbus, Société Générale, Cadbury Schweppes, Northern Rock, AIG, Independent Insurance, Enron, Arthur Andersen, Railtrack, the UK Passport Agency and also some smaller firms. Several did not survive and most of the rest suffered severe damage. Our aims were to trace the deeper causes of the crises, to assess the post-event resilience of the companies involved and to consider the implications for the risk management of companies in general.

Our report is built around eighteen detailed case studies that analyse the impact of critical events both on the enterprises most directly affected and, in many cases, on other associated firms. There are references to around forty organisations in total. The case studies provide a rich source of lessons about risk, risk analysis and risk management, in the context of critical events of many different types, ranging from fires and explosions, product-related and supply chain crises to fraud and IT failures.

Our report details over one hundred specific 'lessons about risk' that emerge from the case studies. Much broader lessons have also been distilled from the case studies. Several of the firms we studied were destroyed by the crises that struck them. While others survived, they often did so with their reputations in tatters and faced an uphill task in rebuilding their businesses. We found that the firms most badly affected had underlying weaknesses that made them especially prone both to crises and to the escalation of a crisis into a disaster.

These weaknesses were found to arise from seven key risk areas that are potentially inherent in all organisations and that can pose an existential threat to any firm, however substantial, that fails to recognise and manage them. These risk areas are beyond the scope of insurance and mainly beyond the reach of traditional risk analysis and management techniques as they have evolved so far. In our view, they should be drawn into the risk management process. They are as follows:

1. **Board skill and NED control risks** – limitations on board competence and the ability of the Non-Executive Directors (NEDs) effectively to monitor and, if necessary, control the executives.
2. **Board risk blindness** – the failure of boards to engage with important risks, including risks to reputation and 'licence to operate', to the same degree that they engage with reward and opportunity.
3. **Poor leadership on ethos and culture**
4. **Defective communication** – risks arising from the defective flow of important information within the organisation, including to board-equivalent levels.
5. **Risks arising from excessive complexity.**
6. **Risks arising from inappropriate incentives** – whether explicit or implicit.
7. **Risk 'Glass Ceilings'** – arising from the inability of risk management and internal audit teams to report on risks originating from higher levels of their organisation's hierarchy.

We conclude that a number of developments are necessary to deal with these risks.

- The scope, purpose and practicalities of risk management will need to be rethought from board level downwards in order to capture these and other risks that are not identified by current techniques.
- The education of risk professionals will need to be extended so that they feel competent to identify and analyse risks emerging from their organisation's ethos, culture and strategy, and from their leaders' activities and behaviour.
- The role and status of risk professionals will need to change so that they can confidently report all that they find on these subjects to board level. However, these risks will remain unmanaged unless boards – and particularly Chairmen and NEDs – recognise the need to deal with them. Boards will also need risk professionals with enhanced vision and enhanced competencies to help them do so.

Who cares about numbers?

Arguably, too few people! Without a deeper appreciation of numbers – especially large numbers and fast rates of change – we are unable to comprehend the scale of change already happening – and about to happen.

Although Homo Sapiens has been on the planet for something over 200,000 years, our Palaeolithic ancestry has failed to equip us for the massive changes we have seen in the last 10,000 years (agricultural revolution) and the last 200 years (industrial revolution and technology revolution). For the fourth industrial revolution, on which we have already embarked, we are even less prepared.

> **How big is a billion?**
>
> If you were to count each number from one to a billion – assuming one second is required to say each number, and assuming no rest periods whatsoever – it would take nearly 32 years.

Exponential Growth

The graph below shows increases based on linear growth (50x), geometric growth (x to the power od 3) and exponential growth (2 to the power of x – where each successive value is twice its previous value).
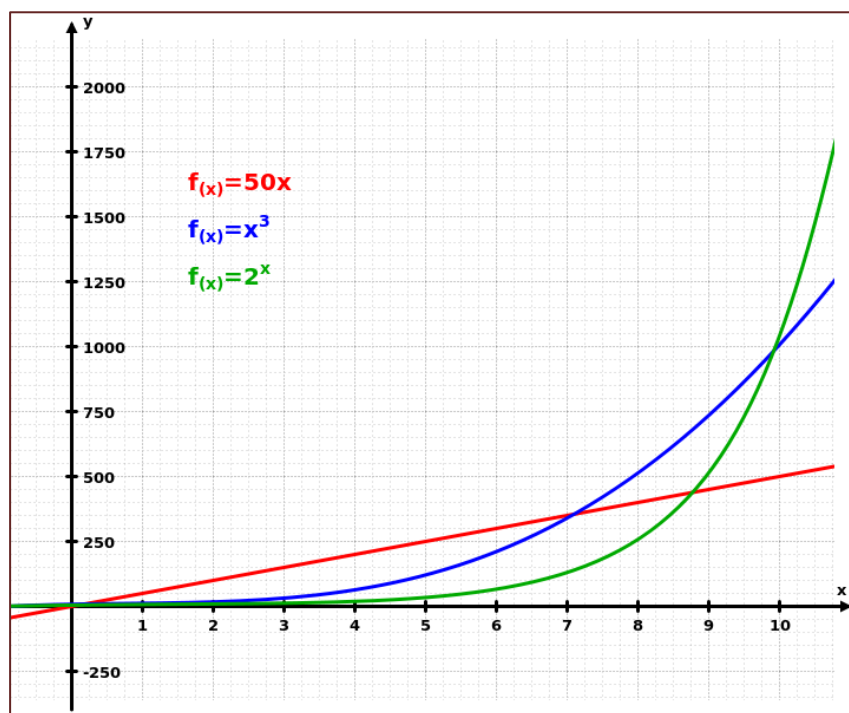
The formula for exponential growth of a variable x at the growth rate r, as time t goes on in discrete intervals (that is, at integer times 0, 1, 2, 3, …), is:

$$x_t = x_0 (1 + r)^t$$

where x_0 is the value of x at time 0

So what? After only 10 iterations, exponential growth shows an increase of 1,024. After 20 iterations, an increase of 1,048,576 (compared ot linear growth of 1,000 and geometric growth of 8,000).

Since IT generally has been demonstrating exponential growth since the 70s – and promises to do so for some time to come - the implications for increased speed, reduced cost and vastly greater storage are almost beyond comprehension.

Big Numbers and fast-growing numbers in today's world

World population has grown from 3 billion in the 50s to over 7 billion today – and may be as high as 12 billion by the end of the century. In Nigeria, for example, the current population is 170 million, more than half of whom are under the age of 14. By the end of the century, scientists predict that Nigeria's population will be in the range 500 million to 1 billion.
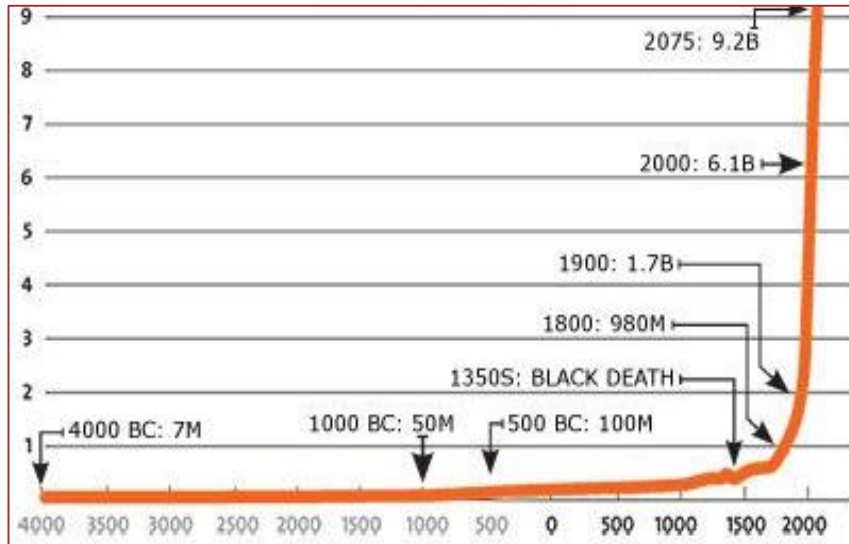
By 2050, it is estimated we will need to produce 70% more food than currently to feed the increased population.

In the meantime, there are many risks and uncertainties. The latest World Economic Forum provides a useful snapshot of issues:
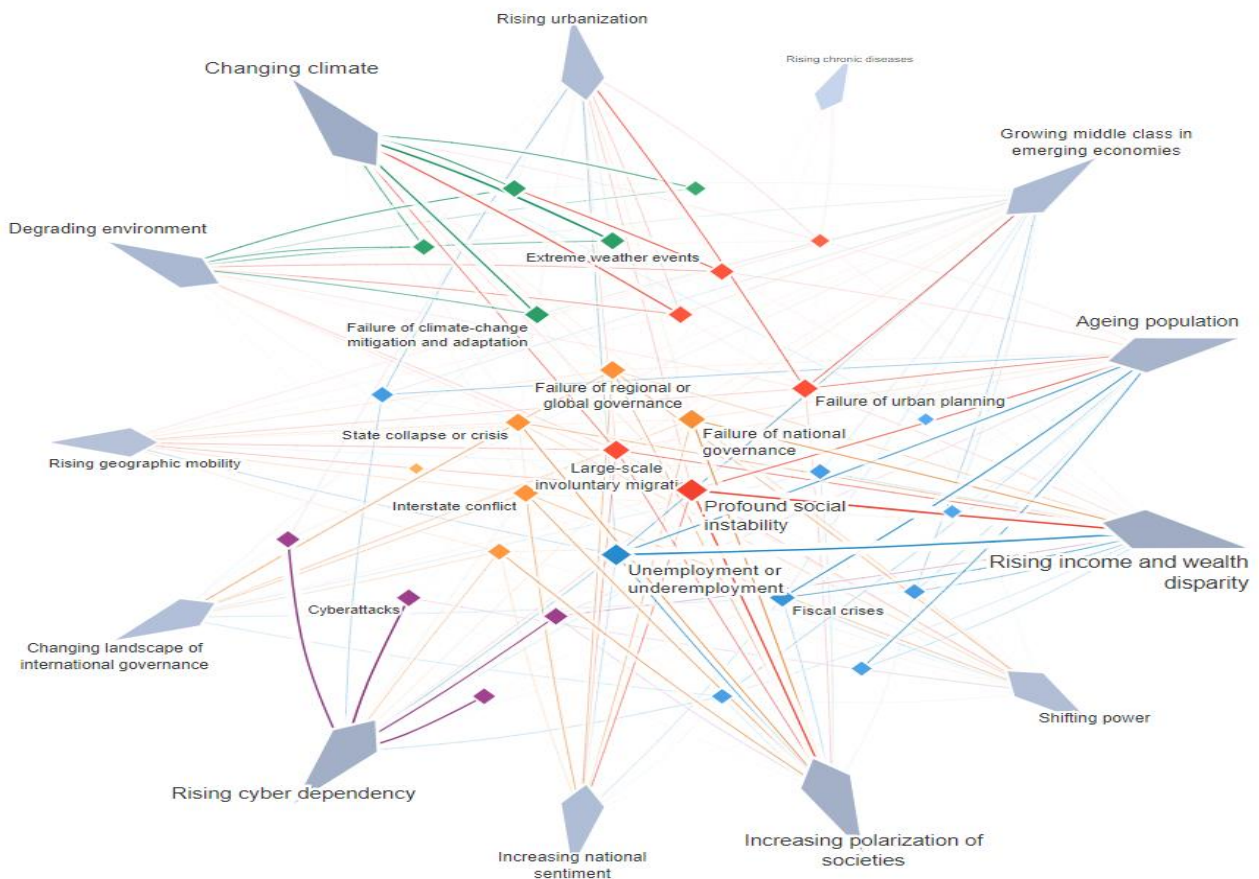
Under-Employed, Under-Inclusive and Under Threat: the World in 2017

- Trends such as rising income inequality and societal polarization triggered political change in 2016 and could exacerbate global risks in 2017 if urgent action is not taken, according to the Global Risks Report 2017
- Key drivers of risks can be arrested or reversed through building more inclusive societies, for which international cooperation and long-term thinking will be vital
- Climate change ranks alongside income inequality and societal polarization as a top trend for 2017, with all five environmental risks featuring for the first time among the most likely and most impactful risks before the world

Economic inequality, societal polarization and intensifying environmental dangers are the top three trends that will shape global developments over the next 10 years, the World Economic Forum's Global Risks Report 2017 found. Collaborative action by world leaders will be urgently needed to avert further hardship and volatility in the coming decade.

In this year's annual survey, some 750 experts assessed 30 global risks, as well as 13 underlying trends that could amplify them or alter the interconnections between them. Against a backdrop of mounting political disaffection and disruption across the world, three key findings emerged from the survey:

- Patterns persist. Rising income and wealth disparity and increasing polarization of societies were ranked first and third, respectively, among the underlying trends that will determine global developments in the next ten years. Similarly, the most interconnected pairing of risks in this year's survey is between high structural unemployment or underemployment and profound social instability.
- The environment dominates the global risks landscape. Climate change was the number two underlying trend this year. And for the first time, all five environmental risks in the survey were ranked both high-risk and high-likelihood, with extreme weather events emerging as the single most prominent global risk.
- Society is not keeping pace with technological change. Of the 12 emerging technologies examined in the report, experts found artificial intelligence and robotics to have the greatest potential benefits, but also the greatest potential negative effects and the greatest need for better governance.

While the world can point to significant progress in the area of climate change in 2016, with a number of countries, including the US and China, ratifying the Paris Agreement, political change in Europe and North America puts this progress at risk. It also highlights the difficulty that leaders will face to agree on a course of action at the international level to tackle the most pressing economic and societal risks.

"Urgent action is needed among leaders to identify ways to overcome political or ideological differences and work together to solve critical challenges. The momentum of 2016 towards addressing climate change shows this is possible, and offers hope that collective action at the international level aimed at resetting other risks could also be achieved," said Margareta Drzeniek-Hanouz, Head of Global Competitiveness and Risks, World Economic Forum.

The complex transitions that the world is currently going through, from preparing for a low-carbon future and unprecedented technological change to adjusting to new global economic and geopolitical realities, places even greater emphasis on leaders to practice long-term thinking, investment and international cooperation.

The propensity of the Fourth Industrial Revolution to exacerbate global risks also came under scrutiny in the Report's Global Risks Perception Survey. Basing their analysis on 12 distinct emerging technologies, experts clearly identified artificial intelligence (AI) and robotics as having both the highest potential for negative consequences and also the greatest need for better governance. Notwithstanding its potential to drive economic growth and solve complex challenges, experts also named it as the top driver of economic, geopolitical and technological risks among the 12 technologies.

Add to this the challenge of Volatility, Uncertainty, Complexity and Ambiguity and the challenges in coping with Legal Risk and Compliance are tougher than ever before.

But that's not even the start of it. Consider the impact of 4 transformational technological changes: Bio Info- Nano- and Cogno-.

Bio- Info- Nano- and Cogno – 4 transformational Forces profoundly changing our World

Bio-

We have discovered how to document the make-up of DNA, into 4 constituent building blocks of life: cytosine (C), guanine (G), adenine (A) and thymine (T). Research is now decoding which components are responsible for different life functions – especially disease.

CRISP/cas9 technology provides a vastly simpler way of manipulating DNA, opening up the possibility of genomic-based medicines and cures. The NHS is spending over £1billlion on research in this area and promises to revolutionise our approach to medicine.
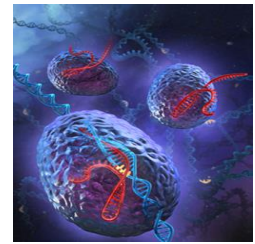
CRISPR – a brief overview of a revolutionary gene editing technology

"CRISPR" (pronounced "crisper") stands for Clustered Regularly Interspaced Short Palindromic Repeats, which are the hallmark of a bacterial defence system that forms the basis for CRISPR-Cas9 genome editing technology.

In the field of genome engineering, the term "CRISPR" or "CRISPR-Cas9" is often used loosely to refer to the various CRISPR-Cas9 and -CPF1, (and other) systems that can be programmed to target specific stretches of genetic code and to edit DNA at precise locations, as well as for other purposes, such as for new diagnostic tools. *With these systems, researchers can permanently modify genes in living cells and organisms and, in the future, may make it possible to correct mutations at precise locations in the human genome in order to treat genetic causes of disease.*

In January 2013, the Zhang lab published the first method to engineer CRISPR to edit the genome in mouse and human cells.

CRISPR genome editing allows scientists to quickly create cell and animal models, which researchers can use to accelerate research into diseases such as cancer and mental illness. In addition, CRISPR is now being developed as a rapid diagnostic.

The potential for CRISP/cas9 technology is immense – but not without potential difficulties – especially ethical ones. Much concern has been expressed about the use of this technology on so-called 'germline' cells (namely, cells that affect future generations of cells) versus somatic cells (solely confined to fixing an existing cell (which will not reproduce or 'pass on its genetic material' to the next generation).

Enormous progress has also been made in generating artificial organs using a combination of 3D printing (to create an organ 'scaffold') along with stimulated stem cells.

In food science, the first artificial hamburgers have been produced in the laboratory by cultivating muscle tissue samples from a cow and replicating the cells a billion billion times. The cost of a single Lab-Burger has dropped from US$250,000 to US$10.
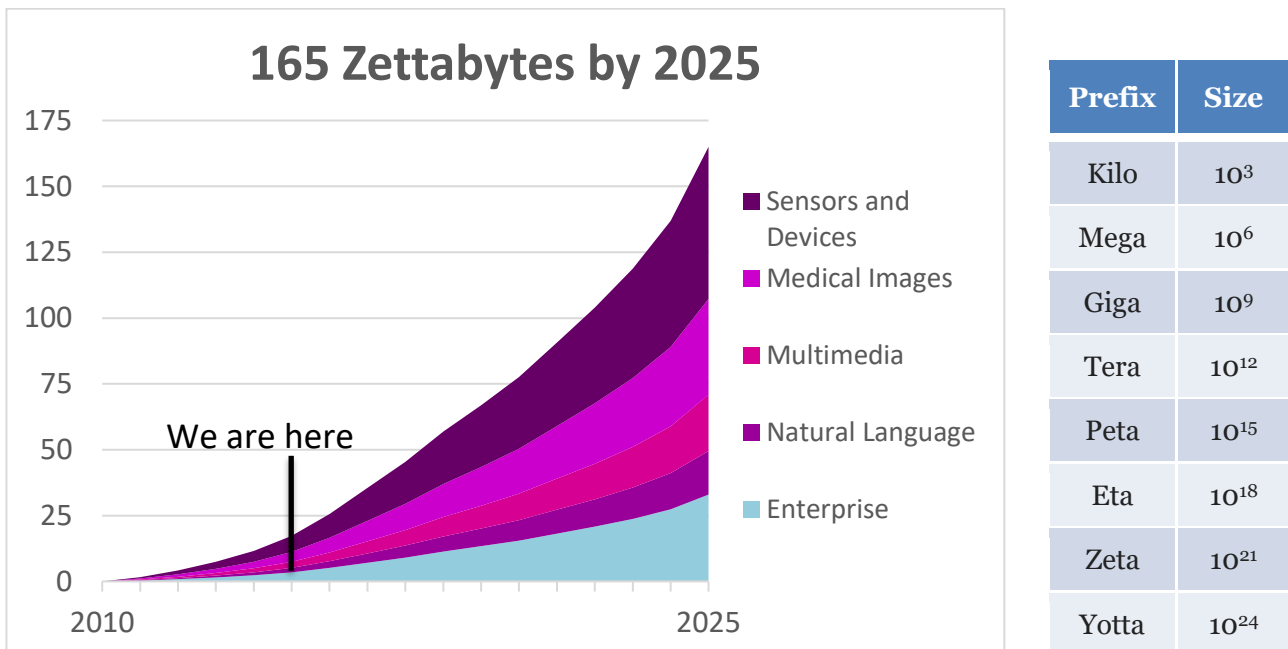
Info-

Computer processing power and computer storage has been growing at an exponential rate since the 70s.
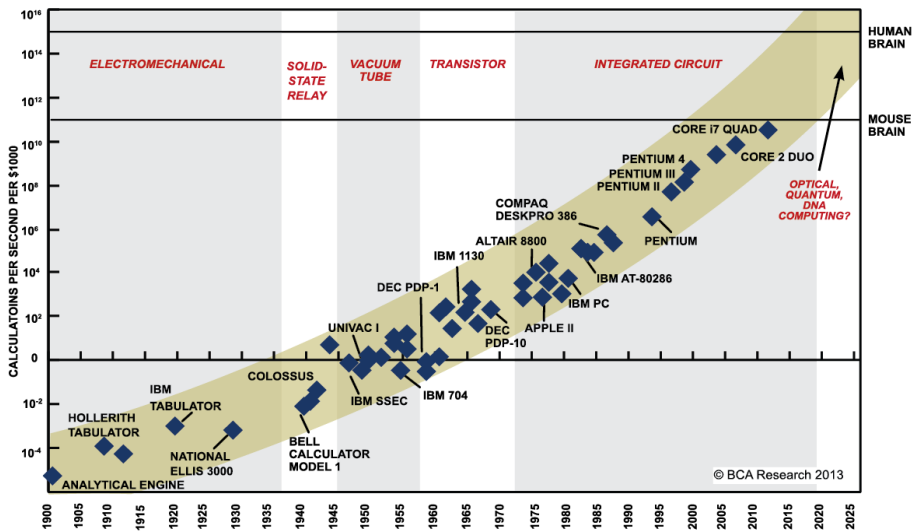
We have generated more information in the last 2 years, than in the history of mankind, combined.

For example, a typical jet engine now produces 500 GB of data in a single flight as it monitors as many as 5,000 separate parameters every second.

Predictions suggest we will generate as much as 165 zetta bytes by the year 2025 – a zetta byte is one thousand billion billion bytes!

| Prefix	Size
Kilo	10^3
Mega	10^6
Giga	10^9
Tera	10^{12}
Peta	10^{15}
Eta	10^{18}
Zeta	10^{21}
Yotta	10^{24}

With such massive volumes of information, we simply cannot process it without the assistance of the same technology that created it.

In a recent case in Dublin, a large law firm turned to AI systems to help reduce a theoretical total of 11 million discoverable documents to a more manageable set of 11,000, for more detailed examination.

Nano-

Nano is the art of the incredibly small. A Nano-meter is one billionth of a meter:

Prefix	Size
Milli	10^{-3}
Micro	10^{-6}
Nano	10^{-9}
Pico	10^{-12}
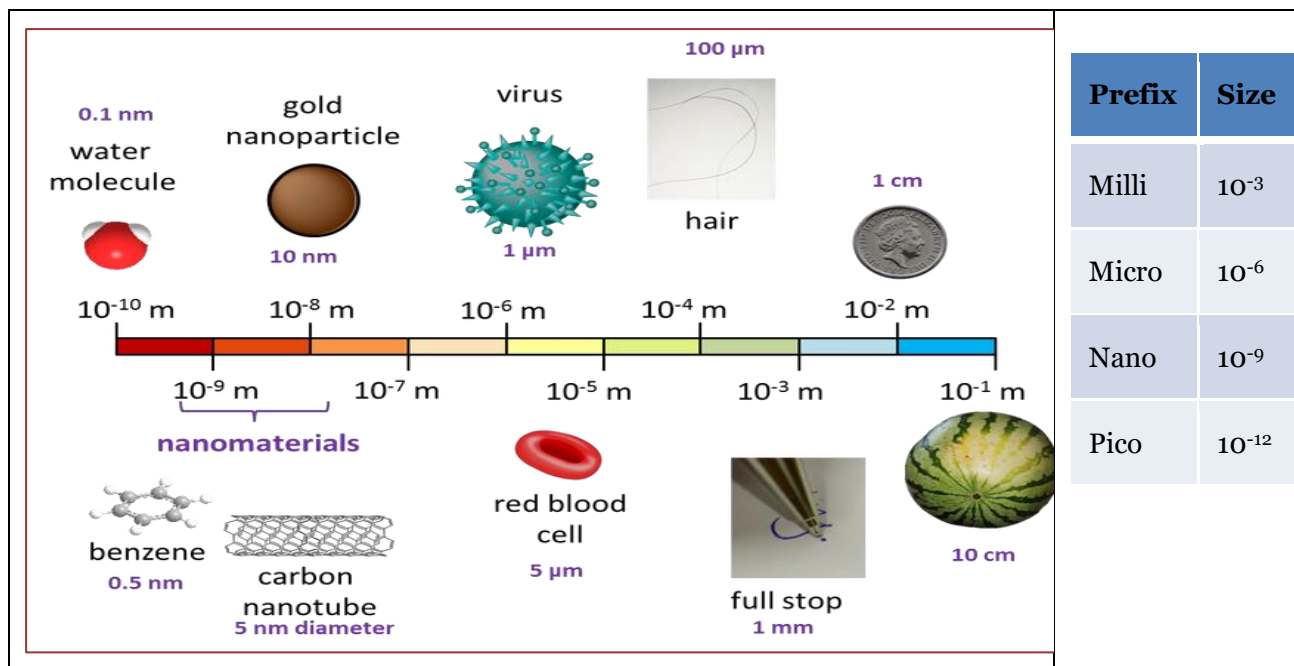
Advances in technology mean that we now have more devices, that are smaller, more powerful and less costly than ever before. Connecting these to the Internet results in the so-called "Internet of Things", with over 50 billion connected devices expected by 2020.
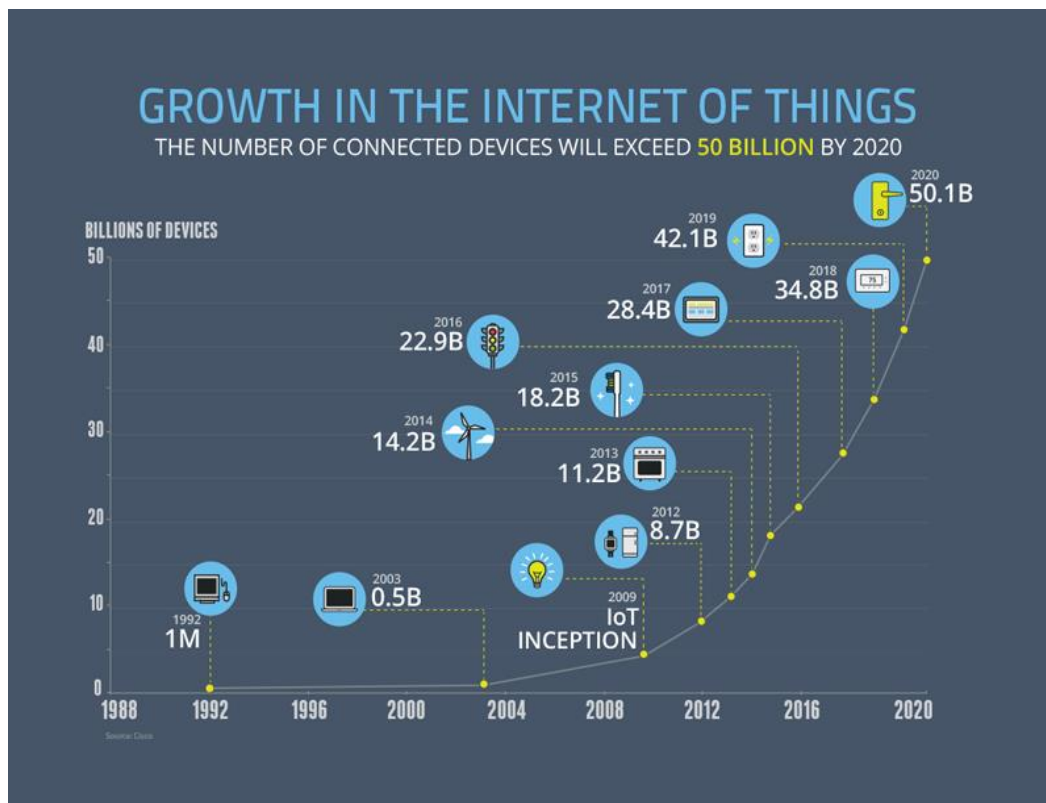
Cogno-

The advances in computer power and storage are being matched by corresponding enhancements in software, particularly in:

- Robotics
- Augmented and virtual reality
- Deep machine learning
- Blockchain, and,
- Artificial Intelligence

Robotics have advanced substantially; for example, a robotic weeder can now traverse a field autonomously (no driver required – it uses GPS) and selectively destroy weeks (using machine vision and deep machine learning), leaving the desired crop intact.

Augmented Reality applications are growing – initially from the gaming area (such as Pokemon Go) to traditional business processes; for example, enabling inspection of residential and office properties from afar, enhancing education programs etc

Deep machine learning is exploding in the range of applications:

- In medicine, systems have been developed which match and exceed the skills of specialist clinicians in areas such as cancer, dermatology and psychiatry
- ChatBots are replacing traditional Call Centre staff and customers are often hard-pressed to distinguish the difference between a human operator and an AI-powered application
- AI-powered applications are generating automated financial analysis of corporate filings

Blockchain has already caused a stir in initiating new cryprto-currencies. Its real potential, however, lies in disruptive innovations that replace traditional processing; for example, in registering and tracking assets (such as title to land), financial transaction processing, etc

Artificial Intelligence is manifesting – in a narrow way – in a host of specific applications such as intelligent personal assistants (Siri, Amy, Viv), customer mining (Netflix's recommendations of new movies/series) etc

Future breakthroughs will, increasingly, use combinations of these technologies to deliver unprecedented functionality. Widespread use of autonomous vehicles is likely less than 10 years away.

McKinsey predicts that no industry will be immune from displacement from these technologies.   The recent complete domination by computer systems in every major gaming area demonstrates the enormous advancement in these technologies.

Implications for Legal Risk and Compliance

The implications for Legal Risk and Compliance are numerous and multi-layered:

- At a policy level, Nature magazine captured the issue concisely:

  *"Policymakers are flying blind into what has been called the
  fourth industrial revolution or the second machine age"*

- Within organisations, the fourth industrial revolution will impact employment enormously. On the one hand, experts predict that nearly one half of all jobs will be displaced; other experts point to the creation of entirely new jobs as a result of such displacement.

- Use of these technologies will bring corresponding threats from bad actors, especially in relation to cyber threats. Net new threats are already arising, such as with so-called "Lethal Autonomous Weapons" (robots or other autonomous weapons that engage a perceived enemy threat and use lethal force to eliminate it)

- In-house lawyers will find their work as exposed to displacement from these Congo-innovations as other professionals. Their challenge will be
  - to identify areas where such systems are less likely to displace human operators, and,
  - to engage in continuous learning to stay ahead of Cogno -advances

- In-house lawyers need to engage the C-Suite in conversations about the full impact of these transformative technologies on their organisations

- In-house lawyers also need to ensure all managers play an active role in identifying legal risk and compliance issues that arise from these developments; for example:
  - What privacy and confidentiality issues arise from DNA advances?
  - How do they stay abreast of increasingly rapid creation of new datasets? And the related risk and compliance issues (especially access, retention, informed consent etc)
  - What new issues arise from the infiltration of Internet of Things devices into every aspect of business processes and daily life of workers and customers?
  - What opportunities and threats need to be addressed in connection with AI applications of competitors?

- In-house lawyers will be under great pressure to use these technologies themselves to address the risks (and opportunities) they generate

- Finally, the pressure to keep abreast of developments will require an even greater commitment to continuous learning if in-house lawyers are not to be left behind

Key Personal Skills and Attributes

Skill	Percentage
Adaptability	86%
Problem Solving	85%
Collaboration skills	81%
Emotional Intelligence	76%
Creativity and innovation	74%
Leadership skills	69%
Digital skills	69%
Risk management skills	60%