



CHANCELLOR  
OF THE HIGH COURT

**The Law Society's Inaugural Lecture on the Future of Law**

**Tuesday 8<sup>th</sup> May 2018**

**Sir Geoffrey Vos, Chancellor of the High Court**

**Abstract:** In this lecture, the Chancellor will speak about his vision for the future of lawyers, courts and judges in the coming decades. He will mainly address the business lawyers' environment, but will touch also on criminal, family and administrative matters. His thesis is that Fintech, Legaltech and Regtech will revolutionise the way we educate, train, and utilise legal expertise, and that whilst some of the changes may be slower than people expect, many will be much faster.

Introduction

1. I am honoured and delighted to have been asked to deliver this inaugural lecture on the "Future of Law". As many of you will know, the subject is close to my heart. Lawyers – and even judges, dare I say it - are world-renowned for being a conservative bunch and for only accepting change at a glacial speed. In a world of rapid technological advance, we can no longer afford to be thought of in that way. Lawyers at all levels must start to demonstrate that they are thinking ahead and, most of all, embracing innovation across the board.
2. I am not the only one that thinks this is important. In the US, the American Bar Association's Model Rules of Professional Conduct provide by Rule 1.1, Comment 8 that legal practitioners are obliged to "keep abreast of changes in

the law and its practice, including the benefits and risks associated with relevant technology”.

3. In this lecture, I want to address some of the changes and some of the innovations that lawyers will need to become familiar with. Most of all, we need to expect that the ways in which solicitors, barristers and judges operate will be transformed within a generation.
4. Before looking forward, it is worth looking briefly back. When I was at school in the 1960s, we spent an entire term writing a “computer” programme on punch cards for it to solve a simple equation. We then took the cards to UCL to feed them in to the massive main frame computer that occupied something like the space in this room. The equation was duly solved, but it seemed unlikely then that the technology was going to change our working lives overnight, even if it was in the very same year that we managed to land a man on the moon.
5. I was called to the Bar in 1977 in an age when my opinions were put out for typing on foolscap paper, and came back a week or so later. If I wanted to make amendments, the choices were white smelly *Tippex* or a retype and another few days’ wait. Barristers hardly spoke to solicitors on the telephone – for reasons I never worked out. And advice was delivered in writing or in conference. In those days, go-ahead commercial practitioners had one instantaneous method of communication – the telex – but few chambers and solicitors’ offices actually had their own incredibly noisy machine.
6. The revolution began with the *Tippex*-reminiscent smelly fax machine, rapidly followed by computers used for word-processing, mobile phones the size of bricks, and eventually email, which took years to gain common usage because of the need to use “dial-up” in the absence of a functioning broadband network. Even now, unreliable wi-fi is the bane of many of our lives.

7. So, why am I telling you all this? It is to illustrate that, in fact, there have only been two technological innovations in our lifetimes that are truly important to the future. The first was the internet, and the second was and is the dramatic – and continuing - increase in the speed at which computers can process data. It is these two changes that we must keep in mind when we consider the future of the law.
8. Much has been said and written about the future, or even the end, of lawyers, but I do not believe that that is what is going to happen. What I want to do now is start at the end with the way I see lawyers and judges operating in the future, and track back through their practice methods and ultimately deal with how we will train people to do what they will need to be doing.

#### Financial services and commercial law

9. Let's start with financial services and commerce. In this area, we are in the course of a revolution. The areas in question are what are loosely called fintech, smart contracts, regtech, legaltech, digital ledger technology, cryptocurrencies and, of course, artificial intelligence. AI falls into two categories: ordinary artificial intelligence which has become a reality due to high data processing speeds, and what is becoming known as artificial general intelligence or strong or full AI. This latter is where machines can perform the kind of intellectual decision-making that we normally associate only with humans: for example, the decision of a judge to choose between allocating the custody of a child to her father or her mother, or the decision as to what happened at a contested business meeting.
10. In this short lecture, I cannot hope to provide details about the multitudes of projects in all of these exciting fields. But I can give you an idea of what is going on. In financial services, smart contracts are simply self-executing transactions, where the terms are written in to the computer

code. Smart contracts will often, but not always be executed on a digital ledger, but that digital ledger may be a permissioned one or a permission-less one. The latter is the kind that has scared many regulators internationally and others because of the risks to consumers and the vulnerability to cyber-crime and cyber-hacking. A digital ledger is simply a limited or unlimited network of computers or nodes that communicate with one another and verify the transaction according to the coded rules of their establishment. Bitcoin and other crypto-currencies generally operate on the blockchain or the digital ledger.

11. Legaltech covers many different fields, but is broadly aimed at expediting the work that lawyers do and making it faster, cheaper and capable of being undertaken without skilled legal training. For example, data processing speeds allows contracts to be automated and to be produced in large numbers almost instantly. Artificial intelligence software can make the production of transactional documentation far cheaper, quicker and less labour intensive. Software aimed at preventing intentional data loss and at identifying malicious incoming emails can provide greater security for financial services and legal operations.
12. Such projects are said already to have reduced JP Morgan's lawyers' bills by 360,000 hours in a year. McKinsey claim that by 2030, 83% of lawyers' work will be automated, and 79% of judicial work will be automated. I am not sure that I understand precisely the basis for those astonishing figures.
13. Our financial regulators here in the UK, the Financial Conduct Authority and the Prudential Regulatory Authority, are, I am pleased to say, actively promoting such technological systems, even including the use of the blockchain and cryptocurrencies, through their sandbox. This allows businesses and start-ups to test innovative products, services, business models and delivery mechanisms in a safe space in the real market. It has allowed ground-breaking initiatives including a corporate bond issue using a crypto-currency and entirely undertaken – successfully I may say - on the blockchain.

14. Perhaps the key to all these developments is their international context. None of these developments is confined to a particular country or jurisdiction. The blockchain seamlessly crosses borders and smart contracts will do the same. This is a potential headache for regulators, but an opportunity for lawyers, particularly English lawyers whose common law legal system is particularly well adapted to dealing with novel commercial problems thrown up by these advancing technologies. There have been many animated discussions about what the proper law of such transactions will be, but ultimately I think the law of most smart contracts is likely to be chosen by the parties, even if the computer coding experts often insist that no legal foundation is needed because the essence of a smart contract is that the code provides for every possible consequence of the engagement.
15. The UK has many successful start-ups in the areas I have been speaking about, but all of them have an international perspective. Even as we are leaving the European Union, parochiality is rightly becoming a thing of the past. We are already seeing how difficult it is to regulate the internet on a municipal basis. I am sure that in years to come, international regulation will become a necessity. Take, for example driverless cars – how will it be possible to have different rules for their operation in adjoining states? It can already be seen how impossible it is to confine social media to national boundaries.
16. So what, you may ask, will legal work and dispute resolution look like in 30 years once all these start-ups are mainstream businesses, once legaltech is used by all law firms – large and small, once digital ledger technology is employed in a wide variety of sectors, and once smart contracts are the norm for the 3 trillion financial services transactions each year? The likely uses for these technologies are endless and extend far beyond financial services: billing services for utilities, the management and execution of trusts and estates, the registration of land transactions at land registries, the provision of prescriptions and health services, the

registration of patents and other intellectual property rights, and the provision of energy supplies, to name but a few.

17. We need, however, in the commercial field at least to make a basic distinction between transactions and disputes.

*How transactions will change*

18. So far as transactions are concerned, there is little doubt that automation will advance very fast. The production of even the most complex transactional documentation is rapidly being made cheaper and quicker by the use of legaltech methods. Put bluntly, less time or perhaps no time will be spent by assistant solicitors in the square mile checking masses of boiler plate documentation for IPOs, bond issues or mergers. Buying and selling financial products, instruments and derivatives will be entirely automated – at least until those sales go wrong and more traditional dispute resolution mechanisms are called for.
19. But none of these advances will mean that commercial transactions will no longer need to be negotiated. Of course, they will. It is unlikely that consumers or businesses, even banks and financial services providers, will wish to allow their commercial contracts to be negotiated entirely by a machine, whether a learned one or not.
20. Moreover, we will need to become increasingly aware of the dangers of contract automation, as algorithmic trading increases. It now accounts for some 50% of trades on the S&P 500 and is already credited with having accelerated recent market collapses across the globe.
21. Transactional lawyers will still, I suspect, be in demand to provide legal advice as to the effect of the automated transactions to which their clients are signing up. However automated or smart a contract may be, its legal consequences and effects will still need to be explained to human beings, whose money is being engaged. The question here is what skills will these transactional advisers need. Some

undoubtedly think that it will be impossible to operate in the financial markets of the future without a good scientific and mathematical grounding, particularly in relation in computer code – at least so as to be able to understand the terms of the financial deals being entered into.

*How dispute resolution will change*

22. So far as disputes are concerned, technology must change the way we deal with them. The judiciary is leading the way with the current reform project to introduce the online solutions court, by which small claims, divorces, guilty pleas and social security benefit issues can be resolved speedily by an online procedure. That process will still result in a traditional hearing in the few cases where it is necessary, but will allow for mediated solutions along the way. Most importantly of all, engaging technology in dispute resolution will speed up the process dramatically. As I so often say, the millennial generation, which expect to be able to obtain everything they want in an instant on their mobile devices, will not make an exception for justice.
23. One thing that I think commercial lawyers need to understand is that these developments for small claims and for consumers generally are likely to affect them too. I hear many people in the Business and Property Courts saying that the online solutions court is not really their concern, because major litigation will carry on as before. I do not agree. I think that business lawyers need to look very closely at the developments in smaller litigation, because these are bound to be the blueprint for the roll-out of online dispute resolution to more significant and high value disputes.
24. So what will financial services and commercial dispute resolution, whether in court or by arbitration, look like in 30 years' time? One thing is for sure, it will need to be speedier and cheaper if it is to continue to be relevant to people's lives. Businesses, just like the millennials I have mentioned,

will, I think, cease to accept ponderous justice processes with months or years between hearings or appeals.

25. Paperless trials are rapidly becoming the norm, and I think they will be the norm by the time the current generation of judges and lawyers has retired. I recently sat on a 2-week appeal in which none of the three judges used much paper, and I looked at virtually no hard copy documents before after or during the hearing. The technology is hardly new – it is the people that need to get used to using it. The problem is that the technology here is quite expensive and only routinely used in business cases of high value. That will obviously change.
26. We are told also that machine learning is already able to predict the outcome of all commercial disputes with much greater accuracy than lawyers who give advice. The machines can consider the judge's propensity to decide in favour of claimants or defendants based on the issues at play, the previous decisions the judge has made, and all the other variables in the case, demonstrating that the claimant has a 93% - or whatever - chance of winning or losing so that settlement can be agreed to reflect the chances.
27. One problem is that this kind of machine learning does not take into account human frailties. There are many such frailties. One is unreasonableness. Individual humans and businesses, which are run by humans, are capable of much unreasonableness, even if judges are not ... Moreover, my experience at least is sometimes that some of the most unreasonable humans can be involved in litigation. Other human frailties include being driven by emotions such as jealousy, grudges and revenge. This provides a challenge in the age of artificial intelligence, because the humans that are in receipt of digital outcome predictions may simply refuse to accept the machine-driven forecast, and decide to take their chances. Moreover, there are other imperatives that cause or contribute to litigation that will not be easily amenable to AI processes – for example, the creation of delay can be a crucial commercial tool.



28. For these reasons, amongst some others, I think that talk of the end of litigation in the 21<sup>st</sup> century is overstated. There will still be commercial disputes, but they will need to be resolved with the benefit of legaltech software that will much reduce the workload of litigation lawyers. Disclosure, so far as it is necessary, will be automated.
29. In addition, I doubt that there will in future be so many disputes of primary fact in commercial cases, because we are living in a world of increasing levels of surveillance. We can and do photograph, film and record everything that happens to us, and that will shortly apply as much to business discussions as anything else. I know there are some disputes of primary fact even now that turn on what the dealers meant by the recorded jargon they had used in agreeing a trade, but the disputes are fewer where everything is recorded. Even though I recall one case where the most difficult thing to do, in understanding what the dealers were saying, was to edit out the vast superfluity of expletives that peppered their conversations!
30. So, I think there will still be commercial disputes to resolve, but they will require a greater understanding of computer code to interpret the smart contracts, and they will be shorter because all the documents will be in the cloud and sorted and analysed by AI. As for the 78% of judicial work that is said to be likely to fall by the wayside, I am in partial agreement. I think there will be less judicial work within a generation for some of the reasons I have already given. I also think it will be different. For example, some of the future judicial work will involve the promotion of mediated settlements before cases reach the final determinative stage.

#### Non-financial areas of law

31. Leaving business and financial cases for a moment, I have already mentioned the reform project in the courts. This will introduce a much-overdue streamlining of small disputes in

all the main fields like small claims, benefits claims and even crime.

32. There will, of course, still be criminals and criminal cases, even if the crimes will be different once the digital revolution is complete. Cyber-crime and sex crime is likely to be the most prevalent, but I doubt that even in 30 years' time, society will accept the digital determination of guilt in contested criminal cases. Computers will probably not replace juries, even if the jury's decision-making will be very greatly assisted by a range of digital processes. I heard the other day, however, that lie detection is a very inexact science. Apparently, it depends on how much the person taking the lie detection test is acclimatised to lying. Good liars pass such tests and bad liars fail.
33. Despite this, I think there will be far fewer contested criminal cases in the future, mainly because of the surveillance of which I have already spoken. We have recently seen the impact that digital disclosure of mobile phone records has had on rape prosecutions. One change in behaviour is already having a big impact on the eradication of contested criminal cases. Most people carry their smartphones on their person at all times with their GPS location switched on. They do this voluntarily, but if the legislators were, for example, to require citizens to carry phones at all time, it would be even more difficult to avoid detection. With or without such a rule, as the location of all persons is continuously uploaded to the cloud, there will anyway be far fewer identity issues in criminal cases. As society seems to accept more and more surveillance, I wonder how radical the change I have mentioned will seem to the population in 10, 15 or 20 years' time.
34. I recall the first time I met Professor Richard Susskind back in about 2006, when he was forecasting commoditisation of legal advice, and legal advice being given free and online to the disadvantage of the lawyers and the law firms. His thesis was that, all but the magic circle, would perish because conveyancing, family law, wills, probate, personal injuries and administrative disputes would be advised upon and dealt

with online for no charge. This is not quite as it has happened, but much of what he predicted is in progress now. Certainly lawyers cannot charge what they once did for conveyancing and there are far fewer lawyers engaged in the smaller kinds of cases, partly because of a reduction in legal aid, but also because of a vast increase in online information and advice.

35. This online world has allowed the litigant in person to flourish. Indeed, many of the online dispute resolution processes are designed to allow individuals to deal by themselves with their small legal cases.
36. In my view, online dispute resolution, mediation and ombudsman platforms will absorb much of the small legal work in years to come. It will be very rare to have a face to face interview with a lawyer in relation to a legal problem. Lawyers will be far more mobile and will be able to work anywhere. The millennials expect everything online and will be able to get what they need delivered to their tablet or mobile. That will apply as much to dispute resolution as it does to contracts.
37. Where will that leave judges? For my part, I think the vision behind our current proposals for the online solutions court is a good one. It allows ultimately for a proper judicial decision-making process in every case, even if such hearings may become far fewer than they are today. Which cases will actually require physical court hearings, as opposed to hearings without everyone being present in the same room at the same time, remains to be seen. But undoubtedly even in small cases, some judicial decision-making will still require a court hearing. There will always be vulnerable people for whom the judicial system will need to provide with due consideration. Others may well prefer to participate digitally in most decision-making processes.

#### The practice of the law in 30 years' time

38. With these prognostications, you will begin to see where I am going as to the practice of the law. First, I should say

that I would not predict meteoric changes in the law itself, only in how it is practised and what lawyers will be doing.

39. Unless we envisage the collapse of our capitalist society, which I personally doubt, I would expect that businesses will still exist in 30 years' time, and individuals will still have an element of personal wealth in 30 years' time. Also, unless human nature changes more radically than I expect, I would therefore predict that some advice will still be required about transactions that have either produced or are expected to produce profits or losses. Humans will always, by their nature, be solicitous for their private property, and will strive to protect it – digitalisation, smart contracts or cryptocurrencies notwithstanding. The fact that property will be created and traded digitally will not affect the fundamental need for advice as to transactional issues.
40. As I have said, however, I would expect that smart contracts and automated documentation will significantly reduce the grunt work for transactional lawyers. There will, however, inevitably be more regulation, however light touch we endeavour to make it, and therefore more work for those involved with ensuring that businesses and individuals comply with that regulation in almost every sector. Greater regulation is inevitable because, as we can already see, the online space is a dangerous one; and, in order to make it safe for businesses and individuals to operate within it, there will need to be reliable rules and rule-makers. As I say, I see these regulators as ultimately becoming cross-border, just as the internet itself is cross-border.
41. We are, as I have said, told that smart contracts will not admit of any litigation, because they are by their nature self-executing and all their consequences are written in to their computer code. I don't believe that. The discussions that are already taking place as to the law applicable to smart contracts indicate that I am not alone in this. There will be some smart contracts that will end in dispute, I am sure; if only because somebody will say that they were misled or deceived outside the terms of the underlying computer code.

But I think the level of surveillance already discussed will reduce litigation and make it quicker to resolve.

42. There is also another point. A great deal of legal advice is not actually legal advice at all. It is either social work in a legal context, or business advice in a legal context. As Professor Dame Hazel Genn QC explained in her recent President's lecture to the Bentham Society, many, if not most, health problems are caused or exacerbated by legal or social issues. Foremost amongst those issues are employment and housing problems leading, in whichever order, to loss of a person's job followed or preceded by loss of that person's home or at least a bitter dispute with their landlord. These problems are unlikely to decline as a result of the technological revolution.
43. The same can be said of business problems. Business people need advice in numerous fields from those with an understanding of the law, even if they do not always need detailed advice as to the law. This is how I see much of the future. Advisers will need a much broader expertise than just law if they are to fulfil the expectations of their commercial clients in the future. I will come back to this in a moment.
44. I would also expect criminal prosecutions to reduce over the next 30 years for the reasons I have given, even if family disputes may not. There is, as I have said, limited scope for asking AI software to determine which parent should have custody of a child – at least until artificial general intelligence is more readily available, and I think that is some way off. So family lawyers may turn out to be the lucky ones.

#### Training in the modern age

45. One of the most remarkable things, I think, about the legal profession in modern times is the glacial pace at which training for it has changed over the last 40 years. We still force our trainees to study the same or almost the same

subjects that I studied in the early 1970s. Whilst those subjects might have proved useful for me as a Court of Appeal judge, I doubt such training even now proves useful for the bulk of those that trained with me. In the Court of Appeal, we decide some 1,000 civil appeals per annum, each raising a legal issue. The training I had is less useful, I suspect, for the 140,000 solicitors and 16,500 barristers in practice today. I very much wonder how useful the current courses will be in 30 years' time.

46. There may be the need for some lawyers trained in a traditional way, but I doubt that very many will find it useful. Let us look first across the spectrum:-

- (1) For those advising in financial and commercial cases, perhaps the most important things to learn about will be business itself, regulation, technology and computer science. I can see that basic contract law will remain useful to the delivery of business legal advice, but it will need to be studied in a quite different context from the present historically based courses. I was surprised to learn a few years ago that there were 11,000 regulated advocates in Moscow, but some 50,000 unregulated so-called "business lawyers". It may be that we will need a cadre of business advisers with excellent technological and IT skills and an understanding of the law, but rather less fully trained legal experts.
- (2) In terms of tort and personal injury, I somewhat doubt whether lawyers will be much involved in that by 2050. Even if there is not a no-fault compensation scheme for road accidents and medical negligence by that time, the expertise required will not be legal so much as medical and scientific.
- (3) As for administrative law, there will obviously still be disputes between citizen and state. That has been the greatest growth area over the last 30 years, but I somehow doubt that it will be over the next 30 years

for a host of reasons that can perhaps await another lecture.

- (4) Employment contracts and disputes will survive, but will mostly I suspect be resolved online with less factual dispute in the surveillance age I have spoken about. Everyone's conduct will be traceable through their devices.
  - (5) Obviously, intellectual property will survive as a discipline, but IT lawyers already need a significant scientific, as well as a legal, foundation.
  - (6) I wonder whether criminal and family lawyers will become recognised as those dealing with the vulnerable and with social problems rather than with truly legal issues. Once greater surveillance becomes the norm, the law of evidence may become less central, and lawyers less indispensable to dispute resolution in these areas.
47. What then will a training course look like for a lawyer of the future: perhaps the training will depend on whether you want to be a "social lawyer", a "human rights lawyer" or a "business lawyer". I am not sure they will need the same skills, if they ever did.
48. Social lawyers will need training in dealing with people, in social science, in civil rights, in what causes crime and family break-up rather than hard-edged law. Human rights lawyers will need training in the relationships between citizens and between the citizen and the state.
49. Business lawyers will, as I have said, need to understand the ever-more-complex regulatory regime that affects commercial life online: this will ultimately affect smart contracts, digital ledger technology and AI. They will need to know some computer coding; they will require business and technological training, as well as legal training.

## Conclusions

50. The law and the legal profession never changes as fast as many of us think it should, but the changes I have mentioned are very significant. The legal profession needs to change as significantly if they are to remain relevant in a rapidly changing technological society. Judges are not exempt from this process. Indeed, I see the need for the judiciary to accelerate the modernisation of the way in which we resolve disputes in all disciplines to be urgent and overdue.
51. We need to pay close attention to developments in legal fields across the board if we are to continue to serve our society in the way we ought. Lawyers and judges do not exist for their own benefit. They exist to serve society. That is why they must be representative of it in diversity terms, and why they must continuously review the services they are offering to ensure that they cater for current needs, not the needs of previous generations.
52. The biggest changes are not just the internet and the increasing processing speeds that I mentioned at the start of tonight's talk. They are the changes in the people to whom the legal profession delivers legal advice. I used to joke, when I was practising in Lincoln's Inn, that you could see small groups of disconsolate, sometime inconsolable, people walking slowly through New Square at about 6 p.m. of an evening, and that these people had been the "victims" of legal advice. We will not be able in the future to provide legal advice or dispute resolution in a remote and inaccessible way. The digital generation will require the answers provided in a way they can understand, without the frills of a past generation.
53. I am trying to make sure that the judges in our Business and Property Courts have the training needed to fully understand the new technologies, so that we here in the UK can offer leading edge dispute resolution services in relation to smart contracts and DLT, and in relation to disputes that arise in our new online business world.



54. We have a good legal system here in England and Wales. Our lawyers are of a quality that is the envy of many other countries. We must make sure that we embrace the new technologies, which by the way create fantastic opportunities for lawyers and courts alike.
55. This will involve adapting our legal training proactively so as to prepare the next generation of lawyers for what they will actually be doing rather than for what we all used to be doing. Most of all it involves thinking long and hard about how best all of us in the legal community can best serve the new digital generation that our society is producing. One thing is for certain: it will not involve tippex, foolscap paper or even telexes.
56. Many thanks for your attention.

GV

---

*Please note that speeches published on this website reflect the individual judicial office-holder's personal views, unless otherwise stated. If you have any queries please contact the Judicial Office Communications Team.*

---