



Select Committee on Science and Technology

Corrected oral evidence: Forensic Science

Tuesday 20 November 2018

3.35 pm

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Members present: Lord Patel (The Chairman); Lord Borwick; Lord Fox; Lord Griffiths of Fforestfach, Lord Hunt of Chesterton; Lord Kakkar; Lord Mair; Baroness Morgan of Huyton; Baroness Neville-Jones; Lord Oxburgh; Lord Renfrew of Kaimsthorn; Baroness Young of Old Scone.

Evidence Session No. 10

Heard in Public

Questions 99 - 109

Witnesses

Tom Nelson OBE, Director of Forensic Sciences, Scottish Police Authority; Stan Brown CBE, Chief Executive, Forensic Service Northern Ireland (FSNI); Anthony Harbinson, Forensic Services Leadership Board (FSLB) of Northern Ireland.

USE OF THE TRANSCRIPT

This is a corrected transcript of evidence taken in public and webcast on www.parliamentlive.tv.

Examination of witnesses

Tom Nelson OBE, Stan Brown CBE and Anthony Harbinson.

Q99 **The Chairman:** Good afternoon, gentlemen. We will turn the broadcast on now so we are being livestreamed. I thank all three of you for coming this afternoon to give evidence to our inquiry; we appreciate it very much. Before we start, to get you on record, would you mind saying who you are and the organisations you represent? After you have introduced yourselves, if any of you want to make an opening statement, please feel free to do so; otherwise, we will move on to the questions.

Tom Nelson: I am the Director of Forensic Services at the Scottish Police Authority.

Stan Brown: I am the chief executive of Forensic Science Northern Ireland, which is an executive agency of the Department of Justice.

Anthony Harbinson: I am director of safer communities for the Northern Ireland Department of Justice and I am responsible for forensics policy within Northern Ireland.

The Chairman: Do any of you want to make a statement or shall I get on to the questions?

Anthony Harbinson: I think we are happy to jump into the questions.

Q100 **The Chairman:** Okay, good. So am I. Let me kick off. We are told that forensic science is arranged significantly differently in Scotland and Northern Ireland compared with England and Wales, and that the way forensic science is used in the criminal justice system is different. Would each of you tell us briefly how it is different from England and Wales?

Anthony Harbinson: In Northern Ireland we have one key provider of forensic services and that is Forensic Science Northern Ireland, the agency that Stan is the chief executive of, and within that agency we offer a range of specialised services. It is a public service body that works directly for the range of criminal justice agencies within Northern Ireland, predominantly the Police Service of Northern Ireland, but also the Public Prosecution Service, the courts services, the Police Ombudsman, et cetera. Anything that we cannot provide internally, we broker to the commercial world to see where we can buy the services in. The key element is an internally driven, public sector-driven forensic science agency.

Tom Nelson: In Scotland, it is very different from England and Wales. In 2007, we established a national forensic science service—one of the first national services from crime scene through to court. We covered fingerprints, scene examination and all the laboratory services. In 2007, we brought together four laboratories, eight scenes of crime departments and the Scottish Fingerprint Service. Prior to 2007 they were all line-managed by the local chief constables. However, in 2007, the decision was taken to bring them together into one national organisation. The reason behind that was that science does not begin in the laboratory, it

begins at the crime scene, and therefore it is important to ensure that we have the right processes, practices and standards in place from the very outset.

We have a crime scene to court organisation under one quality-management system. It provides a one-stop shop to Police Scotland, the Crown Office and PIRC—the Police Investigations and Review Commission. It provides that service to the whole of Scotland from those four primary laboratories and 13 other scenes of crime departments. That allows us to maximise the forensic recovery at the crime scene and get the most out of that evidence when it comes back to the laboratory. A key reason for the establishment of a national forensic science service, and for bringing it out of the arena of the police environment, was to ensure our independence, and to provide a sterile corridor that allows us to provide an impartial forensic science service to the criminal justice system in Scotland. We have a very different approach to the delivery of forensic science in Scotland compared with England and Wales and Northern Ireland.

Lord Fox: I can see how this works for the prosecution. I am interested in how it works for the defence. If I want independent analysis of forensic information in your domains, where do I go? Do I go to England or what?

Stan Brown: The first thing to note is that our people are not prosecution witnesses.

Lord Fox: But normally you are commissioned by the police service to gather and analyse the data.

Stan Brown: Yes, but we analyse it totally objectively and take huge measures to do that. When our expert witnesses give evidence to the court, they have a sole duty to serve the court, and not those instructing or paying them.¹ We take that obligation extremely seriously and our quality-management system enhances that. In addition to that, we support defence experts should they wish to look further as an extra layer of protection for the defence.

Lord Fox: How often would the defence use a service other than yours to respond?

Stan Brown: It happens mostly in major cases, but we would have defence solicitors engaging with us.

Lord Hunt of Chesterton: What did you say at the end?

Stan Brown: In serious cases it can happen quite often, and we facilitate the defence fully—not adversarially but as partners—in trying to get to

¹ The witness sent this extra information following the session: I omitted to state that this obligation is not peculiar to Northern Ireland and applies equally strongly in England and Wales and is enshrined in both law/precedent and in the Forensic Science Regulator's Guidance. It applies to any Expert Witness (including those called by the Defence) and it also reflects the fact that only Expert Witnesses can give Opinion Evidence. Please see:

https://www.cps.gov.uk/sites/default/files/documents/legal_guidance/expert_evidence_first_edition_2014.pdf

the objective truth. That objectivity of science is extremely important. If science is not objective, it is not science. That is the bottom line.

Lord Griffiths of Fforestfach: Are you saying that you are providing a service to the prosecution and the defence and you treat them absolutely equally?

Stan Brown: Yes.

Lord Griffiths of Fforestfach: So if I were a defendant, I would not feel in any way that I had less access to you than the police?

Tom Nelson: One of the benefits we can deliver is exoneration of the innocent. That is one of our strengths. In fact, in Scotland we have just gone through a development of the strategy in forensic science in Scotland. The staff thought it paramount that not only are we involved in criminal justice through prosecution but we provide evidence which exonerates the innocent. Very like Northern Ireland, we have an access policy which allows defence agents to come in and engage with our staff.

Lord Hunt of Chesterton: That is very interesting and encouraging, but in discussion with previous witnesses it has been thought that this progress towards having a more objective prosecution and defence examination is relatively recent. Certainly, when I asked a PQ about this nearly 10 years ago, it was very clear that it was not looked at equally, and the judges were not calling on the science from the prosecution and defence side at that time. A Member of our Committee who is not here today—a judge—commented that there had been quite a change. Would you like to comment on whether there is now a clearer approach?

Stan Brown: Historically, we have always taken that approach; it is not new. Science is inquisitorial, but it inhabits an adversarial world of justice, so we have to act inquisitorially and not in a biased manner. For example, if the police were not submitting what we thought was a necessary exhibit to fully round out the analysis or examination, we would push back and say, "We also want that, that and that". If that was refused, we would take note of that and it would go into our case assessment, which would form part of the final report. You can capture that aspect. It is our duty to ensure, as Tom was saying, that exculpatory evidence is completely exposed just as much as other evidence. Just as the Public Prosecution Service for Northern Ireland has an obligation to ensure a fair trial, our obligation is to ensure science in support of a fair trial.

Lord Hunt of Chesterton: You seem to be saying that there has been no change in general policy, whereas other witnesses have been saying there really has been a change.

Stan Brown: There has been no change in policy.

Anthony Harbinson: In Northern Ireland, because we have had a divided society for quite a long time, we have always had an approach that our forensic science and judicial systems are completely and utterly independent. We have always worked on that basis.

Lord Hunt of Chesterton: Point taken.

Baroness Neville-Jones: The access that the defence has is very important to the Committee. I want to be quite clear about what I am hearing. As a practical matter, does the defence come to you as often as, say, you service the prosecution? How does it work? In the course of your work on the forensic evidence that is available, if you come across exculpatory aspects, do you take the initiative to inform the defence?

Stan Brown: Yes.

Baroness Neville-Jones: Not just the court but the defence as well.

Stan Brown: That is the case not only in live cases. If we came across an historical error that only emerged some time afterwards, we would inform the Public Prosecution Service, which would review historical cases no matter how many years they were in the past, and, if it was of a generic nature, we would inform the Forensic Science Regulator.² The defence solicitors have access to our laboratory. We have a disclosure team which gives them full disclosure and, if they wish, they can bring in experts to supervise and examine our work.

Baroness Neville-Jones: Do they avail themselves of that right?

Stan Brown: Yes, they do.

Tom Nelson: In Scotland, we have a system unique to Scotland of precognition. Prior to a defence expert coming in, a defence expert can precognise the scientists involved and ask them any questions they want in relation to the specific case. If they want to come in, arrangements can be made for further examinations to take place or questions to be developed further. Certainly, there is a process in place if we ever came across anything that would exonerate any individual. We would manage this through our quality-management system, we would make that available and known to the appropriate bodies, including the regulator.

Lord Griffiths of Fforestfach: The reason some of us are asking these questions is that we had a previous witness who was, I think, a very credible witness from a scientific point of view, who ran a company, and he said that over a long period, and I cannot remember the exact length but a substantial period, he had had 300 and something requests by the prosecution, and my memory may be wrong, but four—it was certainly fewer than 10—by the defence.³ From your perspective in Northern

² The witness sent this extra information following the session: To clarify, I am referring here to an historical error or shortcoming in the forensic science evidence which was uncovered at a later date (after the trial) and which, on objective consideration, may potentially have contributed to a miscarriage of justice. For ongoing cases, we would most certainly fully disclose any exculpatory evidence to the defence and PPS.

³ The witness sent this extra information following the session: The probable reason for this discrepancy is that it is relatively unusual for a defence scientific expert to conduct their own scientific examinations or to be called to give evidence in court, due to the fact that in the majority of trials the forensic evidence per se is not contested (although its weight and meaning might be). Criminal Procedure Rules and Practice Direction in England & Wales are actually "ahead" of N. Ireland in that they encourage/require a Defence Proposition (i.e. what they say transpired in the crime incident) and a discussion

Ireland and in Scotland, is there something in the structure of our system which leads to a bias, which you have corrected because of the structure of your system?

Anthony Harbinson: I do not know the English system well enough to make any comment on that aspect of it.

Lord Griffiths of Fforestfach: You are Northern Ireland.

Anthony Harbinson: I can say that the Northern Ireland system has always tried to work on the basis of complete and utter independence, openness and transparency in everything we do. That is more easily done when you have the core of your services being provided by a single public sector body rather than a range of smaller companies, because at least in Northern Ireland both defence solicitors and barristers know how the system works. They know what they can get. They know where to get it. They know who to speak to. It is not a problem for them in any way, shape or form. I would always point out that in Northern Ireland, and to a degree in Scotland, we have one police service with one prosecution service. We are small enough to know everything and everyone within that system.

Lord Fox: That is a helpful cue because, to be clear, in England and Wales, the police have retained quite a lot of the forensic capability, and in Northern Ireland and Scotland, the police have zero forensic capability and it is all external to the police force—is that correct?

Stan Brown: I can say for Northern Ireland that the PSNI is located about 80 yards away from us in the same complex. It has the fingerprint bureau and does the matching of fingerprints and straightforward fingerprint recovery. We do specialist fingerprint recovery and imaging which we send to it and it does the matching. We do the DNA databasing and most of the advanced science with advanced laboratory facilities and expertise at scenes. It does footwear screening, so it would screen multiple possibilities of footwear, and we would do the matching of that. There is no overlap as such, but there is some dovetailing between what it does and what we do. It does cybercrime and we have a digital forensics unit.

Lord Fox: I am going to ask about that later.

Tom Nelson: In Scotland, it is different in that we have a national forensic service which sits outside policing and, therefore, the crime scenes examiners, fingerprint department and all the laboratory functions are within my remit as Director of Forensic Services in Scotland. The only area outwith my remit at the moment is digital forensics.

Chairman: Do you charge both prosecution and defence for your services?

Tom Nelson: I report to the board of the Scottish Police Authority. It is given a budget by the Scottish Government and it allocates that budget

between prosecution and defence as to which elements of the forensic evidence are in dispute. The court (or prior to court the forensic laboratory and/or CPS) can then focus on these elements.

to the Chief Constable for policing matters and to the Scottish Police Authority for corporate and Forensic Services. Our budget is effectively top-sliced from the overall Scottish Government Policing budget.

Stan Brown: Our funding is different. We are funded through service level agreements, the biggest one being with the PSNI, but we also have them with the state pathologist and the Police Ombudsman for Northern Ireland, and we do some work for the National Crime Agency and HMRC as well. We charge for cost recovery. If the defence uses a solicitor, we charge the solicitor and they recover that from legal aid.

Baroness Neville-Jones: Is there a transaction charge?

Stan Brown: Yes.

Baroness Neville-Jones: Is that applied to both sides, prosecution and defence?

Stan Brown: I am sorry, I should have mentioned, we have a service level agreement with the Public Prosecution Service and it also pays us an annual fee. The purpose of the charging is to try to right-size demand versus capacity. It is not that it has control over us; it does not have any control whatsoever over the casework. It is just a question of right-sizing the organisation.

Lord Hunt of Chesterton: What do you see as the main benefits of the system as it works in your two nations? In a way, you have been addressing that question. I was going to add a Brexit tweak because there is, of course, another country adjacent to you which speaks English.

Stan Brown: A form of English.

Lord Hunt of Chesterton: And there is no border, effectively. Would you like to comment upon how this fits in?

The Chairman: Could you deal with the first question first?

Stan Brown: The advantages from our point of view are numerous. First, as Anthony expressed, there is an adversarial background to justice in Northern Ireland and, therefore, it is very important that we are demonstrably objective and independent, especially when we look at legacy inquests going back to the time of the Troubles and the possible establishment of an historical investigations unit. It is hugely important that we are seen to be completely objective and independent from the police and to do things scientifically, with no holds barred as regards that. The other advantage—and Anthony will probably blush at this—is we have access to strategic capital investment. Recently, we completed a new laboratory costing £14 million, which probably has some of the finest facilities for DNA and trace evidence in the world. That is funded by the Department of Justice. A private organisation would have to fund the capital expenditure and get a return on that investment over a period.

We invest in advanced instruments on an annual basis. Advanced chemistry and instrumentation is expensive. It can cost a quarter of a million pounds for one mass spectrometer, for example. We might have

£2 million or £3 million-worth of kit in one laboratory room. The ability to have the best science and facilities is critically important, together with objectivity and demonstrable independence.

Anthony Harbinson: I should say that Stan has painted a very rosy side of the picture.

Stan Brown: Times are tight.

Anthony Harbinson: There will always be tensions between the service provider and the purchaser; the main purchaser being the Police Service of Northern Ireland, which wants more and wants it quicker and cheaper. There are always those tensions. That is why we have it on a semi-commercialised basis, with the forensics agency selling the services through a service level agreement to the PSNI, ensuring that it gets what it pays for.

Tom Nelson: In Scotland we have tremendous facilities. We have four laboratories; two of them very new and built in the last six years. We have the Scottish Crime Campus at Gartcosh. Millions upon millions of pounds went into those facilities. We have amazing equipment which allows us to bring in the best science. My aim as Director is to ensure that Scottish policing and the Scottish public have access to the best science on every occasion. In fact, we did some work looking at our values. Our vision is "scientific excellence for safer communities". We want to ensure that we provide the best equipment and facilities to support the public and people of Scotland. The Scottish Government have supported us in that. One reason why we have had that support over the years is because Policing and the Criminal Justice Partners see a real value in forensic science. It is disappointing that quite often people do not see that value and, therefore, they do not invest and do not want to invest. Forensic science can add significant value to the public in making our communities safer and supporting the criminal justice system as a whole.

Lord Hunt of Chesterton: Could you answer the second part of my question?

Tom Nelson: Would you mind repeating the question?

The Chairman: Do you have any relationship with Ireland?

Stan Brown: Tom's organisation and mine, the four major commercial providers in England and Wales, and Ireland are members of the Association of Forensic Science Providers, which works extremely well, considering it is a mixture of public and private organisations.⁴ We help each other in quality trials and all sorts of things. I know the Irish laboratory well. Ireland has made the decision recently to more or less

⁴ The witness sent this extra information following the session: For clarity, the phrase "commercial providers" in this sentence does not apply to Ireland which is a public sector laboratory.

I forgot to include, in my list of AFSP members, another very significant public sector provider in England & Wales, namely the Defence Science & Technology Laboratory's (DSTL) Forensic Explosives Laboratory (FEL).

follow the Scottish model. It is absorbing that part of forensics which was with the police—the Garda Síochána—absorbing it into an independent forensic organisation.

The Chairman: Can you answer two quick questions? Are forensics services in both Northern Ireland and Scotland accredited?

Tom Nelson: Yes.

Stan Brown: Yes.

The Chairman: Who accredits them?

Stan Brown: We have one of the broadest ranges of accreditation in Europe, possibly.⁵

The Chairman: What standards do you use?

Stan Brown: ISO 17025.

The Chairman: You have no problems with these ISO standards.

Stan Brown: It is fit for purpose and it is rigorous and demanding but, if you are genuinely committed to quality, you should not have an issue with it.

The Chairman: What is the budget in both Scotland and Northern Ireland for this service?

Stan Brown: Our budget is roughly £11 million to £12 million.⁶

Tom Nelson: We cover the whole range of services: scene examination, fingerprints and laboratories across the whole of Scotland and our budget is around £30 million.

Q101 **Baroness Neville-Jones:** My question is largely directed at Northern Ireland. The forensic science board and the operations group have in their regime, as far as I can see, a commitment to the following: providing a layer of governance and supporting and facilitating collaboration between stakeholders. Can you unpick that sentence a little

⁵ The witness sent this extra information following the session: I should have answered “UKAS” as an answer to the direct question “who accredits them?”. This is relevant to the Committee’s deliberations as Scotland and N.Ireland are inspected and accredited to the same standard by the same body (UKAS) as all the accredited providers in England and Wales.

⁶ The witness sent this extra information following the session: I (and Tom) may possibly have misconstrued the question. The figures given in our responses were for our total annual organisational budgets. FSNi pay UKAS an annual fee of approx £60k for their accreditation services. That however is just a portion of the total costs of running a rigorous quality management system in a forensic laboratory. These costs are extensively spread throughout the organisation (in both direct costs of Quality Team members and indirect costs of many other staff members) and total over 10% of the total organisational budget. A systematic programme of internal scientific audits, peer reviews, collaborative exercises, blind trials, specialist working groups, contamination monitoring, complaints handling, demand and capacity planning, continuous improvement, etc. are all essential components of achieving and maintaining Accreditation to ISO17025 in a full service forensic laboratory. These stipulations apply equally to all accredited providers in England and Wales, including the commercials.

and say who are regarded as the stakeholders and what is meant by a layer of governance? It is probably implicit in a lot of what you have been saying, but it would be interesting to know exactly what the purpose of that commitment is, and how you find it works in practice. Do you think this is a good approach—I take it you do—and are there any limitations to it?

Anthony Harbinson: We have a criminal justice inspection facility within Northern Ireland that goes around looking at different areas of the criminal justice system and deals with thematic issues. In 2014, it did a review of forensics and said that we needed a forensic service strategy that encompassed everything that Stan's organisation was doing in Forensic Science Northern Ireland and the other forensic elements that the police would buy in directly from other areas—services that Stan's team does not provide—to ensure that we had a complete map of what it was used for, how it was used, where it was going; and to cover areas such as the Public Prosecution Service and how it fits into the courts service. I commissioned a forensics service strategy and pulled that together.

Baroness Neville-Jones: Who did that for you?

Anthony Harbinson: My own team did that. We specifically brought in Peter Gilleece to lead on it, develop it and take it forward. He worked with a small team and we took that forward together. The biggest recommendation out of it was that two groups should be created: a strategic leadership group, made up of senior leaders within the criminal justice agencies, such as the police and prosecution service, forensics, et cetera; and an operational group that would sit under that and work out the day-to-day issues of how specimens would transfer between services and how we would look at it. There were tensions over the budget and how much we were spending and how much the police were getting. The police would always want more for less. It is a common factor. Stan has to maintain a threshold of expertise, a number of staff in each area. He has to keep the science accredited and keep the standard high, so there is additional add-on cost. We do research and development as well, to a degree.

We set up these two boards, the operational board and the strategic board. I initially chaired the strategic board but I thought that since I was from the department it would be better if we had someone more independent taking that forward. We asked a retired judge—Judge Tom Burgess—to take on the role. He is now the chairman of the Forensic Services Leadership Board. His independence and his insight into the judiciary have also been very impactful in taking it forward. The strategic leadership board reports to the Criminal Justice Board in Northern Ireland, which is the head of all the criminal justice organisations.

We were building a matrix of organisations and structures to ensure that we were doing the right things in the right way. At the top level of each of those agencies, there was a realisation that forensics was important; what its role was, where it needed to be and the resourcing of that, so that we could maintain and stabilise the sources that we had. We were

conscious that in this jurisdiction the public service laboratory had collapsed and had not succeeded, and we wanted to make sure that ours did.

We set it up on that basis. We set a range of key issues that we wanted those groups to take forward. We particularly wanted them to begin a project measuring the value of forensic science, to understand the importance of forensic science and what value it gave—not the cost but the value. We wanted to look at, as Tom had mentioned, and as I would describe it, the end-to-end process, from the scene of crime right the way through to the court, and the impacts that would have, to look at how we could make it more effective and efficient. We also wanted to develop a gateway project which would encourage better communication between criminal justice organisations and the defence, to ensure that we had a better understanding of what we were doing at each and every stage.

Baroness Neville-Jones: Who exactly is the “we” in that? It is a very interesting process and it would be interesting to know what you think it has delivered by way of improvement.

Anthony Harbinson: The “we” is the Criminal Justice Board, which is made up of the Permanent Secretary of the Department of Justice, the Minister, and the chief constable, the Director of Public Prosecutions, the Lord Chief Justice and a range of other criminal justice bodies.

Baroness Neville-Jones: What have been your conclusions as a result of the process you have set up? Have you seen results and assessments that have changed how you do things?

Anthony Harbinson: Yes, we have. We have been going for about a year now in full mode. We have set up those three projects that I described to understand and look at it. We have seen benefits in terms of how we direct the funding. Stan will be able to give you the details. It has become a lot better. We have moved from annual funding of policing to a three-year funding model. There is a much better understanding and a lot less friction between the police and forensics in them asking, “Why are you not doing this sample now? Why is my case falling behind?” There is a better understanding of the process and where it is and how we can take that through.

Stan Brown: We are helping them understand where forensics injects value into the crime-scene-to-court system. At an early stage, it might inject value into speeding up the investigation. Eliminating suspects at an early stage saves the police money in not having to go down nugatory lines of inquiry, for example. If forensics can support an early guilty plea and avoid a trial, it saves money. If the forensics is fast enough, you do not have to have repeat remand proceedings, where people are held on remand pending a further outcome. It is about understanding how it injects value into the end-to-end process and applying logic to that: the just-in-time element, if you like, of forensic science. Beneath the Forensic Services Leadership Board and the operational group, which looks at a range of different projects, there is joint research and development, with the Joint Innovation Delivery Group—JIDG. (There are too many

acronyms in Northern Ireland, or NI as we call it). We work with the police to try to identify needs for research and development and to see how we might be able to contribute scientifically to benefit them, and we try to prioritise that.

Baroness Neville-Jones: Might I ask one more follow-up question? We have heard in previous evidence sessions that the turnaround time in getting a piece of forensic assessment back has sometimes been long. Do you have any statistics on typical turnaround times?

Stan Brown: Yes, we do. It depends on how you prioritise the work. A case or work within a case can attract priority. In the case of stranger rape, we would maybe turn around DNA in 24 hours. The average for DNA in total might be 12 days. The mean average for all cases might be 35 days, but some will be much longer than that, depending on how complex they are. In forensics you might have lots of exhibits and they bifurcate and split into multiple streams that are recombined and evaluated into a series of reports going over a period.

Anthony Harbinson: I could give an answer from a non-scientific point of view. Northern Ireland has a problem with the length of time our criminal justice system takes to process cases. Part of the work that we were doing was trying to speed up the process. I am responsible for the speeding up justice agenda in Northern Ireland as well. We have been trying to move to proportionate forensics reporting, where we are reporting on the things that are in contention rather everything and everything to a gold-standard level. Where there is no objection by the defence, we can move things forward more quickly and people can focus on the bits that are a matter of contention and take those forward. We are trying to find ways to use forensics not as a delay but for speeding up the whole justice system.

Baroness Neville-Jones: Who would establish that the defence had no objection?

Anthony Harbinson: We still have committal proceedings and it would be discussed. It be would the role of the judge and judiciary to find out what is in contention and what is not.

Stan Brown: We would also be very transparent. If it was an interim proportionate report that did not have the full evaluative package behind it, we would be clear about that in writing it up, and we would make sure that not too much weight was put on the evidence at that stage when it was only interim results.

Baroness Morgan of Huyton: I have a very small follow-up question to Mr Brown. The logic of saying early spend is a good investment seems clear, but do you have any statistics on that? Do you financially measure and prove that? If so, may we have it, please?

Stan Brown: One of the projects in the forensic service's strategy is to do that, and Anthony could perhaps speak about the work of the University of Ulster on that.

Anthony Harbinson: We are working, as I was saying, on understanding the value of forensic science, and we have commissioned the University of Ulster to work with us to take that project forward. We have done the academic research element to it and we have found that no research was previously done in this area, so we are looking to take this forward as a piece of groundbreaking work. I know that the Home Office and the England and Wales system are interested in what we are doing, and they are keeping an eye on it, as is Tom's department.

Tom Nelson: On the question of value, quite often we can add value in intelligence, but it is sometimes very hard to measure that value. Certainly in Scotland, particularly within the Scottish Crime Campus, we have been able to work with Police Scotland and other partner agencies particularly around the serious and organised crime groupings, and begin to add significant value in those cases. It is very hard to measure that. Certainly, we are looking at value in Scotland, because, obviously, everyone is up against tight budgets, but we want to demonstrate that investing in forensic science leads to better outcomes at the end of the day. We are also working with Stan on that project.

Lord Fox: But this is more of an aspiration than having solid data.

Stan Brown: The data is being amassed at this point. They are working out the model of how they measure some non-monetary things such as societal benefit, and advantages in the process of the criminal justice system—cost avoidance, or whatever it happens to be. Any trial that is avoided, for example, saves a lot of money.

Baroness Morgan of Huyton: What is the timescale for this research?

Anthony Harbinson: It probably has another 12 to 18 months to go in that sense. Tom is absolutely right that we should not underestimate the impact that forensic science has on intelligence-led policing and on counterterrorism, particularly in Northern Ireland.

Q102 **Baroness Young of Old Scone:** Let us turn to Scotland because your governance structure is different and does not appear to be as well plumbed in to the judicial side of things as Northern Ireland. Do you think that is a drawback or does it work in some other way?

Tom Nelson: I do not think it is. Obviously the Police and Fire Reform (Scotland) Act brought in the Scottish Police Authority and that was established with the single Police force in Scotland. The Scottish Police Authority board is there to hold the Chief Constable to account on Policing. I report directly to that board as well, so I report to the Scottish Police Authority on Forensic Services delivery and performance and forensic science issues. Beneath that board in terms of governance, we have the Forensic Services Committee, and that committee is chaired by one of the board members, along with up to three other Board members. Represented on that committee are Her Majesty's Inspectorate of Constabulary in Scotland (HMICS), the Crown Office and Procurator Fiscal Service (COPFS), Police Scotland and other agencies. Those meetings as well as the SPA Board meetings are partly held in public. There is plenty of scrutiny and oversight of the delivery of forensic science in Scotland.

We are also very much aligned to the justice outcomes and there is a Justice Board in Scotland to which we contribute and are members of a number of working groups. We are working together to try to improve the whole end-to-end justice process for the victims of crime.

Baroness Young of Old Scone: You have not been tempted to add a judicial representative to your oversight board.

Tom Nelson: This is a fairly new committee, which was established following HMICS's inspection about a year ago. The committee has been running for about a year. The remit and membership are always under review, and, moving forward, we would probably consider that, but at this moment in time the judiciary is not a member, no.

Baroness Young of Old Scone: If I were a lawyer for the defence, or indeed a defendant, would I worry that your committee was a creature of the police system?

Tom Nelson: I do not think you would need to worry because we are open and transparent, and we are there to serve the criminal justice process, not the prosecution.

Baroness Young of Old Scone: But at the end of the day you get sacked by somebody who is in the police system?

Tom Nelson: I would not get sacked by anybody in the police because I do not report to the police. The Scottish Police Authority board ensures that sterile corridor between ourselves in terms of scientific investigation and the police investigation. It is separate.

Lord Hunt of Chesterton: When you are collecting data, do you have common data available across the four countries of the UK?

Stan Brown: The data picture at the moment is very poor. There is lots of anecdotal information on how valuable forensics is, but there is not enough quantifiable data.

Lord Hunt of Chesterton: So if you find somebody who is accused and that person has moved around the four countries, or however many we have—

Stan Brown: The difficulty is how you measure how much impact forensics had on a particular stage in the process—how influential it was in an early guilty plea, for example. How you measure that is going to be the hard part.

Anthony Harbinson: I think Lord Hunt is asking a slightly different question, Stan. There is a common DNA database and a fingerprint service. You are right that there are common systems that we feed in to and feed up to.

Tom Nelson: There is a National DNA database in which all the countries participate, and there is also a National Fingerprint Database.

Lord Hunt of Chesterton: It is just fingerprints and DNA, is it? For example, behaviour patterns could be monitored.

Tom Nelson: No there is no National database across the UK for behaviour patterns.

Stan Brown: We run the Northern Ireland DNA database and Scotland has its own, and we both feed into the national DNA database to the same standards, so the standards are interchangeable.

The Chairman: Is there any link with the rest of Europe?

Stan Brown: We are both members of the European Network of Forensic Science Institutes. There is a lot of linkage between our laboratories and more than 60 laboratories across Europe, with specialist working groups. That plays a big role in the standardisation of best practice across Europe. We also share DNA through Interpol, Prüm or Europol, so DNA profiles can be shared between countries.

Baroness Young of Old Scone: Do you know what is going to happen to that post Brexit?

Stan Brown: We understand that will continue. That is my understanding at the moment.

Anthony Harbinson: Certainly part of the withdrawal agreement is that we would keep access to those systems, but, obviously, that is all part of the negotiation.

Baroness Young of Old Scone: Not part of the future arrangement. Thank you.

Q103 **Lord Renfrew of Kaimsthorn:** Turning to the market for forensic science in England and Wales, we have heard that the scale of the market has declined, from perhaps £170 million to £50 million over 10 years, and we have heard reservations from providers about the sustainability of the market. It will be very interesting to hear your views on that system in England and Wales and what the impact or the consequences will be on admissibility of evidence and on the reliability and credibility of forensic science evidence.

Tom Nelson: There is no doubt that the market is not sustainable. If you look as far back as a report of 2008—the McKinsey report—it predicted what would happen to forensic science if it went down a particular route. It predicted what would happen to the market, and all its predictions have, in effect, come true. It predicted that it would risk compromising the impartiality of forensic science, that it would increase the screening of items and therefore reduce the number of tests that are done, and it would reduce the size of the market due to insourcing; and it was unclear how innovation and productivity improvements would be incentivised. All these things were predicted in 2008 and it seems to me that the way the market is at the moment, it is not sustainable. There is a significant risk there unless we take some action.

Lord Renfrew of Kaimsthorn: Could you say a little more about the consequences for justice since that time in England and Wales?

Tom Nelson: We have already seen a number of companies going bust during that time. In January/February of this year another company went

into liquidation. That put a significant strain on the provision of forensic science services. People are leaving the organisation because no value is seen in it. It is not being understood or appreciated and therefore people are leaving the organisations. There is a significant risk in England and Wales if someone does not wake up and take some decisive action to change that situation.

Lord Renfrew of Kaimsthorn: Do you feel that is likely to have a greater impact on the defence as compared to the prosecution in the English and Welsh system?

Tom Nelson: We have been asked by other forces in England and Wales whether we could do some work for them so, obviously, there is a risk to the marketplace. Therefore, it is not sustainable in the long term.

Stan Brown: Forensic science is an added-value technical service into another organisation's business processes. In any other walk of life, price would not be the driver; it would be the quality and value that you are generating for your customer in a win/win situation. If you treat it as a commodity and you are procuring on price alone, you drive down the costs. It is very difficult for a commercial provider to maintain its long-term investment in staff and capital equipment if it does not have surety of income and profitability going forward. We work with commercial providers and have great respect for them. They are very committed to quality and their quality ethos is as good as ours. However, there is no question but that they are suffering because of the spiralling down of costs, the loss of profitability and the lack of investment in research and development and other things. If we have insufficient specialism or capacity in Northern Ireland, we would wish to broker to an English provider, and that is not there. For example, in toxicology, following the debacle involving Randox Toxicology Services in Manchester, some 11,000 cases have been compromised and are being re-examined. The price to us of forensic toxicology has more or less doubled as we try to access that market. We are all influenced by that. We work collaboratively on research on transfer persistence, quality and things such as that, and that is compromised, potentially, with the loss of key players with a long experience and tradition in forensic science.

Lord Griffiths of Fforestfach: Mr Nelson, you mentioned the report by McKinsey and said that it predicted 10 years ago that there would be this problem in a market solution?

Tom Nelson: Yes.

Lord Griffiths of Fforestfach: Over that period, in England and Wales, we have seen a very significant budget cut of roughly 50%, which is huge in terms of the market. Was the argument of McKinsey that there was something intrinsic in the market in forensic science services, or was it looking forward and saying that if you have cuts on this sort of scale, and the spiralling down, as Mr Brown said, you are in trouble, because they are two quite different issues?

Tom Nelson: There are two issues there. If you are under cost pressures and you have a reduced budget, you are going to look at where you are

spending your money. If that is being done in an environment where people do not see the value that forensic science is bringing, you are going to reduce the number of tests that are being done. When I read the forensic strategy for England and Wales, what concerned me was that it seemed to be driven by the driving down of costs and, therefore, to me, that means that the market is going to collapse even further. They are not seeing the value question.

Stan Brown: The other point to note is that each sizeable forensic laboratory will have a number of different specialisms, and there is a minimum irreducible size for each specialism below which it is not sustainable. You have to have peer review of every report, for example. They will have to make a decision at a certain point to discontinue a particular specialism. To rekindle a specialism from scratch would take three years, because you have to get the people and train them up to the official competencies, validate your instruments and all that sort of stuff. The flexibility of a forensic organisation to plan laterally to load-balance is very difficult between different specialisms, or to plan forward. It needs a three-year minimum horizon to do that. In a commodity-based procurement approach, it is virtually impossible for it to do that.

Q104 **Lord Fox:** We have had a hint as to what would happen in England and Wales if one or both of these large private sector suppliers were to flounder. What would be the knock-on effect in your respective territories in the event that one or other—or both—of the big English and Welsh firms exited the market?

Tom Nelson: There would probably be very little impact on the casework in Scotland because we provide that crime-scene-to-court service and therefore we have all the specialities, and, in fact, even more than is provided down south currently. The impact on our service delivery would not be the same, but in terms of collaboration and the really positive working that we have within the Association of Forensic Science Providers in relation to quality and trials could be lost, and that would be a real challenge.

Anthony Harbinson: It would also be a challenge for us because, as Stan has said, the biggest issue is the accreditation of staff as you go through the training of staff. We had an early retirement package in Northern Ireland that saw a lot of our staff leave and Stan had to retrain staff to get them up to the level. During that period we were brokering out to external organisations based mainly in this jurisdiction. If they were not there, we would have difficulty during those peaks and troughs, particularly in toxicology services, where probably we do most of our brokering.

Stan Brown: Yes, we do.

Lord Fox: We will come back to skills in a minute.

Lord Griffiths of Fforestfach: May I ask one more question on this subject? Over the last 10 years, if you look at Scotland and Northern Ireland, what is the percentage of your budget that has been devoted to buying in services from the market as opposed to providing them in-

house?

Stan Brown: For myself I would say less than 10%, at a guess.

Lord Griffiths of Fforestfach: Has it gone down during that period?

Stan Brown: Toxicology has gone up because of the increasing demand through drug-related deaths. Toxicology is the most complicated of forensic sciences. That is the one we are experiencing most difficulty with. When we did not have specialist DNA techniques, we brokered those to an English provider, but now we have brought most of those in-house.

Lord Hunt of Chesterton: When you say the need for toxicology has increased, is that due to poisoning?

Stan Brown: It is not only poisoning. It can be drug abuse and victims affected by drugs or perpetrators affected by drugs. For example, you might have a drug rape and a victim affected by drugs, or drugs used in the perpetration of the crime. It could be related either to suspicious or unexplained deaths.

Lord Hunt of Chesterton: It could also be due to lifestyle changes.

Anthony Harbinson: It can also be alcohol. It does not need to be drugs. It is what was in the system of the perpetrator or the victim at a particular point in time.

Stan Brown: And prescription drugs.

Lord Griffiths of Fforestfach: What happens in Scotland?

Tom Nelson: In Scotland generally a very small percentage of our work would ever be sent elsewhere. We are using external support at the moment because we are training biologists. We have been very fortunate in that we have an additional 21 biologists coming into the organisation, and we are using some scientific expertise down south to support that, and that is probably all we have done recently.

Lord Griffiths of Fforestfach: Could you put a number on it when you say "very small"?

Tom Nelson: Less than 0.01% probably.

The Chairman: I think nil would be closer. Lord Mair.

Tom Nelson: I did not want to say there was nothing.

Q105 **Lord Mair:** May I ask about research? Where are the gaps in research and understanding of forensic science?

Stan Brown: Research in forensics is needed in three different areas. The first is how you bring science more rapidly to the scene so you get answers more quickly. Something that will give you identification within minutes or hours is potentially very helpful in terms of investigation. Secondly, there is research in what can be done within a laboratory to speed up the efficiency or effectiveness of the process, detecting things better and more sensitively, with more discriminating power, at lower

cost and in a shorter time. The third one, which is quite different, is the research into the evaluative side of forensics.

Forensics has two different concepts underpinning it: the source and the activity. The source is what the material is, how much of it there is; for example, for the identification of a DNA profile or a drug. The second question, the activity question—when and how it got there—is a very different question. That requires an understanding of the real world and what happens in the real world and how DNA moves from one position to another position or one person to another person. That is called transfer and persistence. The Association of Forensic Science Providers has a beautifully named Body Fluids Forum, which works on that and its job is to understand how likely transfer of DNA is between exhibits. That is hugely important and that is why we have expert witnesses—highly skilled senior scientists—who evaluate the evidence. It is not just a factual thing; they evaluate the meaning of the evidence for the court. They look at the probability of finding the evidence they have found given what the prosecution says happened versus the probability of finding exactly the same evidence given what the defence say happened. It is the converse of how the court works. It is the probability of the evidence given the proposition rather than the probability of the proposition given the evidence. It is a fundamental difference in how science works.

Lord Mair: I would like to hear the Scottish view.

Tom Nelson: I totally agree with Stan. As we bring in new sciences—for example, DNA technology—interpretation becomes key and paramount in that investigation. Therefore, there is a real opportunity for doing further enhancement and looking at transfer and persistence trials. There is certainly some work that we could do in relation to research and development in that particular area of transfer and persistence trials. However, we also want to keep ahead of the game and bring the best science in. There is real opportunity to see where the new science is coming and how we can bring that into a forensic environment.

In Scotland we are very fortunate that we have the Scottish Institute for Policing Research (SIPR), which brings the 13 Scottish universities together. I sit on the board of that research body and we take on PhD and MSc projects over a given year. The money comes from the Scottish Police Authority and from Police Scotland and SIPR looks for grants from other research establishments. We also have the Leverhulme Research Centre. We work very closely with the Leverhulme Research Centre to identify where the new science is coming from and how we can bring that into the forensic environment, and we are taking forward some of the transfer and persistence trials for some of the activities with it.

Lord Mair: Thank you. I understood from your written submission, despite what you have just said, that since the closure of the FSS there has been very limited research right across the sector.

Tom Nelson: Totally. There was an awful lot more research going on then. The research has been stifled because, unless people can see a value in doing that research, that research is not going to go ahead. The universities, and particularly in Scotland the Leverhulme Research

Centre, are filling that void, effectively. It is early days and there is a lot of research that we could be doing.

The Chairman: There are lots of hands up so lots of to-the-point questions and to-the-point answers, please.

Q106 **Lord Kakkar:** To come back to that point about stifling research, in a commercial marketplace, how can one achieve the same commitment to research and development that one was seeing before when there was a national Forensic Science Service?

Stan Brown: If you reward the provider for its effort and it gets a return on that particular investment, it has an incentive to do that research. In the case of a provider designing some new concept which might have intellectual property, you would need a mechanism for it to license that property across the UK so all the courts would benefit from it. You could not have it isolated through one supplier. Usually, that intellectual property would be co-created between academia, an equipment manufacturer and a provider working together to create an application. Forensic science is an applied science; it is not a pure science. It always comes down to how you actually make it work.

Lord Kakkar: Is there a mechanism currently for achieving that kind of collaboration and securing the intellectual property?

Stan Brown: Potentially, there are standard ways of doing that through royalties and licensing, but the difficulty is that the commercial providers do not have the wherewithal to do the research because there is not enough funding or investment to make that happen.

Baroness Young of Old Scone: Can I return to the Scottish system? Does what you describe capture two things? The first is science from whatever discipline it is arising, not just forensic science research, and the other one is whether it is sufficiently blue sky to anticipate what changes there might be in crime or society or science that you can get ahead of the game.

Tom Nelson: The science within the Scottish Institute for Policing Research is primarily around evidence and evaluation, so it is very much forensic-led. The money for the Leverhulme Research Centre was to support justice and the legal process and forensic science coming together for that conversation. Again, it is primarily around forensic science. However, I would say that within Scotland we have developed a new role in our structure of a lead scientist. We see the role of the lead scientist as going out there to see what science is coming next and whether we can bring that into Scotland. This is a specific role that we have in the different disciplines. The main goal of those people is to let me and my organisation know basically what is coming down the road here, and how can we bring some of that new science into forensic science.

Anthony Harbinson: The point I would make is that research is international; it is not just within these islands. There is a wider basis there and certainly on the Northern Ireland side we tend to focus on the

development of that rather than the pure research. It is about, as Tom was saying, how you can use it and take it forward.

Stan Brown: That is quite correct. Most of the instrumentation that we use, for example, is born from other parts of science. If we use gas chromatograph mass spectrometers at £250,000 each, they are not created for forensics; they are created for analytical chemistry, which is a much bigger market than forensics. We have to adapt that instrument and validate it for use in forensics. There is a lot of research worldwide on that.

We cannot do it in isolation and academia cannot do it in isolation because it is an applied science, so it is a combination of academia, equipment providers and manufacturers and forensic providers working together to define what is needed in terms of more rapid science or more effective science or more robust evidential science, and designing a concept or a project around that and getting it funded.

Q107 **Lord Borwick:** Do you train the large numbers of staff that you need to do this really complicated work yourselves? Do you have a big enough training establishment?

Stan Brown: There is training between ourselves, but there are also lots of conferences and specialist working groups that people go to across Europe in which they learn about best practice.

Lord Borwick: Do you headhunt from other parts of the country to come over to Northern Ireland, or is that functionally impossible?

Anthony Harbinson: To be honest, it is difficult to get people to come to Northern Ireland if they are not originally from Northern Ireland. Some do, but we tend to home-grow as much as we possibly can. It is a cheaper and easier way. If you buy people in they tend to move back out when a better offer comes along. It is a difficult area for us.

Stan Brown: We recruit from higher educational qualifications, so all our reporting scientists would have degrees, MScs or PhDs, and there are two to three years' further training after that to make them into forensic scientists.

Tom Nelson: There is also a lot of training to bring them up to speed on the standard operating procedures (SOPs) that we are currently using. It usually takes at least two to three years in some of the disciplines to get new recruits up to speed with those specific standard operating procedures. A lot of it is done in-house, but we look externally for the likes of CPD training and CPC training as well.

Q108 **Lord Oxburgh:** If a young person who was about to graduate in natural sciences came to each of you separately and said, "I am thinking of making a career in forensic science", what would your response be: encouraging, discouraging? What would each of you say?

Tom Nelson: Very much encouraging. I have been in forensic science for 38 years. It has been the best time of my life. I have seen it change and grow over that period. I would encourage anyone who is interested in

science, and the application of that science in a court environment, to come along and test it and see what it is like. It is a wonderful career. Yes, the marketplace has reduced the number of scientists around the country, but certainly in Scotland we are taking on more staff because, although we hear that crime figures are falling, we are doing more forensic science and getting more cases coming into our organisation. Why? Because we are adding value in some of the cases we were not doing previously.

The Chairman: You would be encouraging to the youngsters?

Tom Nelson: Very much so.

The Chairman: Would Northern Ireland be the same?

Stan Brown: We would encourage it as well. We have recruited more than 20 new staff in the last couple of years, following the early severance scheme, and, for the most part, they love it. Interestingly, although it is not highly relevant, a large proportion are female.

Lord Oxburgh: Were these people recruited in response to an open advertisement?

Stan Brown: Yes.

Anthony Harbinson: I know what I pay them so I would encourage my nieces and nephews to join.

Lord Hunt of Chesterton: A different type of crime is crime within prisons, and there is quite a lot. I would imagine that special research or capability would be needed for that. Could you comment on that?

Stan Brown: We have been talking to the Northern Ireland Prison Service about assisting in the control of drugs in prisons, for example, and it has been out to visit the laboratory, and we are hoping to put together some sort of programme to help, because drugs are a major cause of crime, as you know, and of recidivism among people who are incarcerated.

Anthony Harbinson: Any major crime or unexplained death within a prison would be investigated by the Police Service of Northern Ireland and the samples would go through the forensics as normal.

The Chairman: It is the same service.

Anthony Harbinson: It is the same service, yes, exactly.

Lord Hunt of Chesterton: Quite a lot of high technology is being used by people in prisons to do the mischief.

Tom Nelson: There is, and I chair a psychoactive substance working group and we are working, again with Dundee University, to understand what drugs are present in prisons, which is quite an innovative way of looking at it. Obviously, that is going to be reported back up through the appropriate channels.

Q109 **Lord Fox:** I think the skills part has been somewhat pre-empted by Lord Borwick's intervention, but I have a question about digital forensics

because you have both carved that out and I think said that the police forces in your respective areas are still covering that particular important and vastly expanding arena. Where do you think, ideally, digital forensics should lie? How can it be tackled given the huge volumes of it that we are beginning to see? How can the issue of proper controlled disclosure to the defence be managed? We do not have long, but I think this is a very important arena.

Tom Nelson: It is important to ensure that they are accredited. If they are accredited, disclosure should be part of that process.

Lord Fox: But the police themselves are not accredited, are they?

Tom Nelson: No not all of them, therefore we must say that the minimum standard is to ensure that they all have accreditation to carry out that work. If they have that, disclosure should and will be part of that. I know in Scotland where I would like it to go, but that is not my decision, obviously.

Lord Fox: You have a vested interest.

Tom Nelson: It will be for the Scottish Police Authority and the board and the Chief Constable to agree where, ultimately, digital forensics sits.

Stan Brown: We have a digital forensics unit which is smaller than the police's one, but our speciality is in bespoke. When the mobile phone is damaged, the chip has been damaged, we extract the chip and interrogate it directly, or—and this is quite important—we get multiple evidence from the device, so we are looking for fingerprints, DNA, fibres and data from the device. That has to be done in a controlled environment suitable for DNA, and everything else, to get the data. You cannot send it out to a commercial data provider which does not have those strict laboratory regimes.

The other main point is: because of the quantity of data inside these devices, how do you know you have got it all? Frequently, what happens is the police may have a look at a phone, find nothing, send it to us and we find more than they found, because we are using perhaps more advanced kit in some cases. How do you know and validate that you have got it all, because if you do not know you have it all, how do you know whether you have got the exculpatory bit? Part of the accreditation is confidence that you have it all, confidence that you have seen it all and discovered the important bits, and confidence that you have disclosed it all. There are three stages in that.

Anthony Harbinson: I think we are moving into a different arena whereby the police will be focusing much more on intelligence-led policing and using cyber and digital recovery for those sorts of techniques in preventing crime and going forward and passing stuff on to Stan's area.

Lord Fox: But that is a blurred line.

Anthony Harbinson: It is, but it is hand in glove. Both have to work together because there is immediacy in terms of cybercrime where something is hacked or stopped and there is a denial of service. Those things are immediate and have to be done right away by policing. I do

not think you will ever get to the stage where you could take that all out of policing but, certainly, the evidential recovery and delivery for prosecution is a different element, so the two will go together.

Stan Brown: I agree completely with Anthony, but it is important that if you are going to do early intelligential work, nothing you do should compromise the evidential value later. So the evidential value at the end must never be compromised.

Lord Fox: The intelligence work would not need to be accredited, but the evidential work would need to be, in your view?

Stan Brown: As regards the chain of integrity coming through to the evidential, it would need to be, yes.

Baroness Neville-Jones: One addendum to that set of issues is that it looks like a very rapidly expanding area. Do you anticipate a capacity problem?

Stan Brown: Yes.

Baroness Neville-Jones: How do you define it?

Stan Brown: Artificial intelligence will absolutely be needed to interrogate these things. You need to validate the recovery mechanism, both the skills of the operator and the instruments and software used.

Baroness Neville-Jones: Is there any planning going on?

Stan Brown: For the volumes that we deal with in FSNI, we do not need to do that yet, but the police across the country will be looking at that as a huge issue.

Anthony Harbinson: There is an estimation that 50% of all crime now is either cyber enabled or delivered so, yes, we are moving into a different world. It is like industrialisation; we are moving from where we are into a very different space.

The Chairman: Are we doing this development nationally or is each country doing it differently?

Tom Nelson: We work together but it is done nationally. Police Scotland's long-term strategy includes digital crime and there is a budget allocated to that, so it is significant and it is being addressed, but I do not know if it is being addressed nationally across the whole of the UK.

Anthony Harbinson: There is the National Cyber Security Centre and other national bodies set up by the police and counterterrorism experts working on this area.

Baroness Neville-Jones: Is there is a nationally funded programme, though?

Anthony Harbinson: It is nationally funded through those bodies. There is national money going directly into those areas and the police can tap into it as and when they need to.

Stan Brown: We should differentiate between cybercrime and digital forensics. They are not exactly the same thing.

Anthony Harbinson: And there is not a national element to it.

The Chairman: Time is up, but it has been a very interesting session. We have learned a lot about the differences between England and Wales and Scotland and Northern Ireland. I am not allowed to comment as to whether it is for the better or not, but we have learned a lot. Thank you all for coming.