

**ICA 41st Conference
Opening Session
Keynote Address**

**Trust and Transformative Government
Dr. Frank Bannister
Trinity College, Dublin**

Introduction by Nachman Oron, Israel

It is my pleasure to introduce our keynote speaker this morning. Our keynote speaker is Dr Frank Bannister who is Senior Lecturer in Information Systems and Head of the Department of Statistics in Trinity College in Dublin. Dr Bannister has written numerous articles and conference papers on information publication technology usage in the Irish Civil Service. He wrote papers on IT evaluation, e-Government, e-Democracy, he also wrote a book on the purchasing and financing management in IT. He is a joint editor of a book called e-Government and has contributed to several other books in the field of IT value and e-Government. His primary research interest is input of ICA on public administration and governments. Frank is the founding member of the European conference on e-Government and the co-convenor on the study group on e-Government in the European group of the public administration. He is the editor of the electronic journal of e-Government, and a former co-editor and member on the editorial board of a number of other publications. Frank is a member of the International Institute of Administrative Science and of the Institute of Management Consultants in Ireland as well as a Fellow of the Irish Computer Society and Chartered Engineering. So, as you see, this is quite a long CV and many achievements, Frank just told me that the academic year in Trinity College started yesterday so he should have been very, very busy and yet he is here with us, thank you very much Frank for coming, and the floor is yours.

Dr Frank Bannister, Trinity College, Dublin

Thank you very much. Good morning everybody. I must say its a great pleasure to come here to something really well organised after the chaos of the first day of term yesterday when I turned up for my first lecture to find half of the students missing, one group because it wasn't on their timetable and another group because they had been told it was a tutorial and they didn't need to come to it! So it's a great pleasure to see a well organised conference and well organised audience. Like myself, you probably sat through a lot of keynote speeches, I think I've heard about 4 or 5 already this year, mostly of academic conferences, and in my

experience, most keynote speakers just launch off in any subject that happens to interest them, usually very little to do with the conference theme at all and only a minority actually address it head-on.

What I would like to do this morning is to redress that balance and directly address the theme that you have chosen. Its a very brave choice because you've chosen to tangle with two very complex ideas, particularly as, I will show you the idea of trust – trust is an extremely difficult idea – and I've been wrestling with it for a couple of years, in fact when Tim Duggan and Enda Holland asked me to speak at this I was pleased in one way because I have both been concerned with trust and transformation in my own research work but I have never actually tried to bring the two together so this has concentrated my mind somewhat on this topic. What I would like to do is give you some of the research that has gone on into this topic in the academic field and some ideas of my own maybe for you to take away with you which you can choose to reject, if you wish. So what I am going to do is to give a very brief introduction in which I am going to give you a few things to think about, and then I want to talk about two specific types of trust. As we see, there are many, many different dimensions to trust and I am going to concentrate on two because I think these two are particularly relevant to ICT and the public service and particularly to this conference. I am then going to talk about transformation which, as you see, I have given the sub-title: The Continuing Dream and I will explain what I mean by The Continuing Dream. Then I am going to turn to the art of the possible with a question mark after it, and then some reflections and conclusions at the end.

So lets start by looking at the background to this. I want to start by showing you this pair of photographs: on the top left is De Havilland Dragon 1936 EIAB1, Aer Lingus's first ever aeroplane, known as Yela which is the Irish word for eagle. On the bottom is a 2006 picture of an Airbus 320 in Aer Lingus's current fleet, representing 70 years of progress, in aircraft technology. Now, I am going to leave you to think about that during the rest, I am going to return to that photograph at the end and draw some possible analogies for ICT and for government from that. But let me leave that with you for the time being. There are lots of theories of trust. Here are some of the fields in which you will find large literatures on trust. Each one of these fields, you can go and you can find books on the subject. For example, there is a whole sub-set of computer science as the field in computer science that deals with trust between machines. You can go and you can find academic papers on it. There's sociology, there's economics; at a conference I was at in Ravesburgh about a month ago, there was a parallel conference running on trust in business.

There's trust in anthropology. One area is trust in public administration; one area is trust in political science. So this is a very big field, and its very complicated and there are various theories around. What I would like to do, however, is rather than trying to sweep across the entire field from anthropology to zoology is to actually look at two specific types.

Type 1, which I will talk about first, which is the idea of trust as acceptance of personal risk. And that, as we see, is very important for government and for the public sector. The second type of trust that I am going to talk about is trust as faith in institutional behaviour. Now there are other types of trust but these two, as we will see, are particularly relevant when you are thinking about ICT in the public sector. And what I am going to ask is three questions. First of all, what can ICT or e-Government do to improve institutional trust in government? What does the research say about the ability of everybody in this room to actually improve citizens' trust in government as such? The second question is what extent can government itself be transformed by ICT? This is the type you've chosen transformational government, to what extent is this possible? And the third question is what can be done to improve of citizens in online government services? Now, those are three separate questions covering the two aspects of trust, and at the end of this presentation I am going to try to give you an answer to those questions.

So lets start with the idea of trust as acceptance of personal risk. The basic concept of trust comes down to the fact of what of putting myself in the position where another party can take advantage of me? So supposing the Minister asks me to lend him 100 Euros and promises to pay it back to me at the next election. So I am now making a judgement on the Minister's character and so on and so forth and I might decide that he's a very honourable man and therefore I am willing to lend him that money and I have a reasonable expectation of getting it back. But all of these every day make these small decisions. Sometimes these are very big decisions, if you ask somebody to marry you or you invest a 100,000 in some scheme, you are indulging in personal trust behaviour. And this matters. One definition of this trust is the willingness to expose oneself to the possibility of exploitation by another party. Now this actually matters, as we will see later on, in an Internet age because we start to talk about trust in people say, using a government service. One of the phenomena that's much noted in Internet shopping is people cancelling at the last minute. They buy the product, they even go so far as to enter the credit card number and when they get to that little yellow button that says "confirm" they hit escape or they close the browser. Why do they do this? Because there is a failure of trust at that very last minute. There is quite a lot of research going into that, some of which I will refer to. So trust, then, is important. Why? Because trust leads to

trusting behaviour and trusting behaviour in the case of personal risk is very important. It is actually what oils the wheels of society.

If people trust one another, particularly say in business, you can reduce transaction costs, you don't end up with huge legal complications, its an entirely different business from a society where nobody trusts anybody else. Let me give you an example: back in the early 1980's when I was a consultant I was doing work for a grain trading company that bought and sold maize and wheat and things down in the south of Ireland and I went into the dealing room and there were four guys with phones, there was no Internet in those days, and they were buying and selling large amounts of grain, probably millions of Euros worth in today's money, and I remember saying to one of the traders, I said 'Have you just bought 2 million Euros worth of maize to be delivered in 6 months time?' and he said 'yes'. I said, 'This is done on the phone?' And he said 'yes, in this business my word is my bond'. This business simply could not work if traders in the business did not trust one another. Later on there will be paperwork, later on there will be contracts but entirely relied on this.

So trusting behaviour has all sorts of good things for society. It enables the wheels of society to work. In a society where people do not trust one another then society tends to break down. So, there is therefore a great deal of interest in what I call the antecedence to trust. And antecedence is the word used by psychologists to say what are the things to lead people to actually have trusting behaviour? Now, there is a massive amount of research that has gone into this. But basically four things tend to lead to trusting behaviour. The first is a belief in the competence of the person you're putting your trust in to do what you want them to do, so competence is the core thing. I actually believe this person can deliver for me. Secondly, benevolence and that means that the person is your friend, they are on your side, they are not hostile to you. The third thing is integrity; that you believe the person is honest, they might be benevolent and they might be competent, but they could be dishonest, and the fourth factor that matters most is openness and transparency, the obviousness of what's going on. Now, there are other factors and if anybody is familiar with the literature they will know more. But these three factors tend to dominate.

There are a couple of other things that come into play; first of all there is the question of propensity to trust itself – some of us are more trusting than others – there's also the risk, perceived risk, involved in the transaction: its one thing to lend the Minister a 100 Euros, its another thing to ask somebody I don't know very well to marry me! So obviously a considerably greater risk in the second, and the third then is the legal situation, the contextual basis that the transaction is in. If I know that I can go to law if there is recourse I am more

likely to take a risk in a transaction if I know I can sue you later on if you don't deliver. So there is a huge amount of interest in the antecedence to trust.

Here are a few models of many that I could choose. This one is looking at personal trust, x trusts y and that is determined by four factors: competence, the disposition that y will do what they want, a dependence of x on y and fulfilment that x trusts the goal that x is going to achieve. Now, as you can see that is a slightly different model from the one I have just given you but I did say there are various models around. Taking that back further, competence is judged by somebody's ability, their self-confidence, their know-how and their disposition is determined by willingness, persistence, trustworthiness and so on. So what we have in antecedence is a series of factors that leads to other factors.

Let me show you two models of customer trust in Internet shopping which might be more directly relevant to you. Here's one I'm looking at. First of all, it starts with control beliefs. How much do I feel I control this situation? The Minister I referred in a speech to Ryanair and the belief that Ryanair, that people will be confident enough to book a ticket on the phone initially, or on the Internet, and then turn up and to be able to get on the plane without necessarily having a piece of paper that they had bought in the street in Dublin to do that. So, our control beliefs are important, how much we control the situation. We then look at the perceived competence, integrity and security and controls provided by that Internet provider.

So, for example, I would use the Irish revenue's tax online system to do my taxes every year. One of the things that is critical to me is that I get a digital certificate which is on my own computer which gives me a good sense of security. If I didn't have that sense of security I might not be prepared to use it. What I also believe is that the revenue have integrity, and I also believe they are competent. On the other hand if I am going to buy a piece of electrical equipment from some dodgy company in some foreign country in a different currency where I'm not sure what the legal situation is, then I am going to perceive a higher risk and be less trusting. So this leads to trust in Internet shopping, and this in academic modelling: this arrow going into the other arrow, suggests that in fact all of this is modified by previous experience. So that's one model.

Here's another slight variance on the same thing. In this instance, we look at the trustworthiness of the Internet vendor, here we are looking at perceived security control, perceived privacy control, perceived integrity and competence. We then look at the external environment and this I mentioned earlier, third party recognition, the legal framework within which we are working in, we will discuss other aspects of this later on. This leads to a trust in

Internet shopping; this is modified by my own personal propensity to trust. Just as an aside: the one area that trust literature where there is really great controversy is over propensity to trust, and the same nature versus nurture debate goes back. Some people arguing that propensity to trust is something we are born with, we come out of the cradle as trusting or not, and other people saying its a learned behaviour. That in turn then leads to a perceived risk, and that perceived risk then leads to behaviour, which is either to purchase or not purchase in the case of Internet shopping. So what we can see is in personal trust we are looking basically at our own personal risk: this is my potential risk: if I buy this thing online and it doesn't turn up this is my potential loss; if I lend this money to the Minister and he skips the country and I never see it again. So, that is a kind of different type of trust from the second type of trust that I want to talk about.

So lets now turn to this second type of trust which is trust in institutional behaviour. Now this is rather different, this is trust in the ability of institutions to behave properly. Now, in this context lets read institutions as government. But it doesn't have to be government it could be the banks or the banking system, it could be the police, it could be the army, it could be any institution, it could be the church in some instances in where people have faith in a particular institution. A definition here is whether or not political parties and institutions are performing in accordance with normative expectations held by the public. So the public expects certain standards from the government, standards behaviour from the civil service: is the civil service delivering on those standards?

Now, it is quite interesting, I won't get into the actual countries here because I don't want to offend anybody but there was an experiment carried out a number of years where a number of sociologists took, I think about roughly 100 Euro in a purse, and they put it near police stations in different countries, within visual sight of the police station so there were ten in each country and in some countries, and I can mention the positive ones, Norway, I think was one, all ten purses were returned to the police station. In other countries, 7/8 purses were returned, in one country no purses were returned. Now, what does this say? It doesn't say that the people in the last country were less honest than Norwegians, what it says is that they didn't trust the police! Okay, so there are all sorts of advantages in having trust in government.

Here's another definition: Abraham Lincoln I put there because his wonderful summation in the Gettysburg address of government of the people by the people and for the people summarises in some ways the same concept: its the level of confidence that citizens have in the government, both public officials and politicians to do the right thing, to actually run the

economy, to manage the health service, to have a decent education system, to act appropriately, to act honestly, so we want our politicians not to be corrupt, we want our public servants not to be corrupt, we want them to act fairly – all the values that we think or take it for granted of public service: fairness, equity, integrity, courteousness of service, and so on and so forth. All of these things are things that we expect and basically, at the end of the day, we expect our public service to act on behalf of the public. That is a very different kind of trust from the first type of trust, this is trusting things to do right so that both of these types of trust, I suspect, are of interest to this conference because they are both different aspects of things that you might want to do. So in this case we have the same model with different implications: here are trusting behaviour is what's called good social capital, people pay their taxes (the Minister referred to people not paying their taxes in the early 1980's) people today will pay their taxes if they believe the government is good, if they believe the revenue and the people collecting the taxes are straight and honest. People will engage civilly, they will obey laws, you need less regulation, you need less policing, all sorts of good things come out of this.

I will show you a list fairly shortly of some of the benefits of trusting behaviour. However, the antecedence is also different. This is not necessarily a question of control beliefs. The kinds of things that will actually affect our view of the government are rather different from the ones that affect our trust in people. So one of the things that tend to lead to a trust in government is what was called political efficacy: if I feel political influence and power then I am more likely to trust the government.

I am more likely to trust the government if its not corrupt, I am more likely to trust the government if I perceive processes to be fair and, not surprisingly, I am more likely to trust the government if I support that political party in power. So we are looking at a rather different set of antecedence, a rather different form of trust and a rather different form of trusting behaviour. So trust in government tends to be driven by the individual's characteristics, by my personal wealth, by my political preferences, it also tends to be driven by the standards and professionalism within the civil service itself so an independent civil service and things like ombudsmen, methods of checking accountability for civil service, that all matters. And it will also be driven by personal experience: if I continue to have good experiences of dealing with the government then over time my trust will build up. But I want to make this point, and its an important point, that the factors that affect this type of trust tend, as we will see, to be a bit beyond the realms of ICT.

I perceive that my local government planning process is obscure, corrupt, subject to virus, etc, no amount of computer systems is going to compensate for that, and that's the point I will be returning to later. So, I said why does trust matters? Well, research suggests that increased trust leads to greater economic growth, to more trade, to increased levels of happiness in the population in general, to more civic engagement, to more political engagement, to more democratic stability, to better general health in the population, to less crime, to reduce stress and better quality of life.

All this is however. There is a perception, and it's quite strong in some circles, that trust is in decline. Here is some data from the USA; the US Centre for Excellence in Government Data: Do You Trust The Government? Now, what's interesting about this graph is, first of all, the points of the dips are with the Carter administration and Bill Clinton's troubles with Monica Lowenski but there is a general downward trend in it and a lot of American academics have noted that back in the 1950's, in the time of Dwight Eisenhower, 78% of people trusted the government. Now we are down in the mid-30s and the trend of the graph is down, and therefore we need to do something and hence the title of this conference, building trusts through transformational government.

Now, the interesting thing is if you look at the other countries, and I just picked one country at random here, which is Malta; here's Maltese data, and this is from Eurobarometer and in the case of Malta you see in fact there is very little trend at all. It goes up and down but trust in government doesn't tend to vary a great deal over time, and in fact if you look at Belgium and other countries and Belgium is a particularly interesting example because even for example when recent awful problems in Belgium confidence in the government etc did not take a particular knock. Now you could indeed argue that 50% is not very good but we are not necessarily in a very long-term decline. However, 50% we could do better, what might we actually do about it. So this has lead to what I call the transformation hypothesis and it runs something like this. People don't trust governments and this is getting worse. Now you can debate that, but certainly in the United States there is some long-term trend downwards.

Trust in government is a good thing. We have seen there are all sorts of benefits for trusting the institutions of state. Therefore if government is different, if we change government somehow maybe people will trust it more, now this goes therefore we should transform the government. Okay, now we get the interesting bit, technology is the vector of change, technology causes change, we can alter things with technology and we can use technology to transform the government, therefore we can use technology to increase trust in government. Now, this is the line of argument and you will find this in papers and journals and arguments.

Now, first thing to say, this is not new. We have been here before and this idea has certainly been around in one form or other since the 1970s, the earliest days of computing. The question really is will it be different this time because so far there is not a great deal of evidence that technology particularly in the United States has done much to actually transform government itself, government services yes but the actual process of government itself not that much.

So let's look at this continuing dream of transformation. Now here again we run into another definition of problem what do we mean by transformation. If I can make something run twice as fast as before is that transformation? If I used to take three weeks to get a passport and I now can get it in two days is that transformation? Transformation is a nice word. The kind of word politicians, forgive me Minister, like because it is so wonderfully vague. It sounds good, it's a feel good warm and fuzzy word transformation. It's a good thing but what does it actually mean? Here is a quotation from a leading American academic called Daryl West whose photograph I will show you on a later slide and he says this "It is difficult to determine how much innovation and over how long a period of time is required before something can be considered a quote "Complete change in character a condition the classical definition of transformation". So a problem that we have when we talk about transformation is what exactly do we mean by it. Now I am going to give you one view of it, a fairly positive view, while I think transformation should be about the government and I will come back to that later on.

Here is the dream as expressed by John Taylor and Christine Bellamy, I couldn't get a photograph of Chris Bellamy she doesn't seem to be very fond of putting her photograph on the web, John Taylor is a good friend of mine and himself and Chris wrote in 1998 that the best theory of transformation lies the simple but hugely potent claim that liberating the power of new technology will drive down the costs of public services and at the same time help rebuild relationship between governments and their citizens.

So this is not a new concept, this idea that somehow we can invoke technology, we can do something with it, not terribly clearly specified but we can somehow transform the way the government actually does and as a result of that although John doesn't refer to it here we can end up building more trust.

So the transformation model looks something like this, this is from an American academic, we have a government website use, this leads to e-Government satisfaction. Good government websites, people use them, they pay their taxes, they register their cars, they

renew their passports, they get the dog licence whatever it is they do, they use it and they have a satisfactory experience. This is a good website. I use the Irish tax service, I renew my car on line, these are great services and I am delighted with them, they save me lots of time and make my life a lot simpler. But this bit of the argument is a bit less easy to follow that overall satisfaction with government, i.e. the extent to which general expectation governments are perceived to be met, so that will actually improve and that will lead to citizens trust in governments. So that is another version of I think 2004 paper this comes off what John Taylor was expressing in 1998 that somehow if we get really good e-government websites that will somehow lead us to trust our politicians more.

Well, what actually affects Type 2 trust let me go back, I touched on this briefly earlier and these are the kinds of things that turn up in research. First of all the absence of corruption; if governments are corrupt people will not trust them and that's not rocket science. Also economic freedom is important. You will find that in states that have very little economic freedom; former East European states and some other states in the world you don't tend to get much trust in the government or of state institutions. Good process, transparency, fairness and equity so the understanding that whether I am trying to register my child, buy a house, get married, set up a business, lodge a complaint, that somehow the process is transparent, fair and equitable and I can deal with that strong and fair legal system and none of this is coming as a surprise I hope to anybody. Recourse, that I can actually get back this freedom of information ombudsman, there is somewhere that if I feel the state has treated me badly I can go and complain and somebody can do something.

So in Ireland we have got children's ombudsmen and we've got Garda ombudsmen, we've got business ombudsmen so on and so forth. These are people to whom I can go and I can say I have got a problem with what the government has done and these people have power to actually do something. So that will increase trust. Secure property rights, not unsurprisingly, political ethics which I mentioned earlier; even the political colour of the current government so if our current government is a coalition lead by Fianna Fail if I am a strong Fianna Fail supporter then I am more likely just by that fact to trust the state as a whole not just the politicians but actually the whole apparatus of state as well. And all of this is part of what's called social capital. Now of that list only one I would argue at the end of the day is really an area where ICT can make a great deal of impact. Transparency and by implication communication. Now that impact is not insignificant but there is very little that computers are going to do to improve property rights or reduce corruption in the government. Something maybe to reduce corruption with good systems but maybe not as much as we had hoped. So the bad news is really that while we can do quite a lot for Type 1 trust in improving it, the

evidence would seem to suggest that we cannot do a great deal for Type 2 trust. Here's Darrell West again, this time complete with photograph. Darrell said in 2001 there is no significant detectable correlation between the use of e-Government and views about trust, confidence and government effectiveness. In other words, so far the academic research, well, of course that was 2001 so its a number of years ago now, but certainly in a fairly big study at that time they found there was actually very little correlation between the way the government used ICT.

Perhaps a more interesting study, a much more recent one, comes from these two gentlemen: tKen Kreamer who recently retired after thirty years as director of the Christ Institute in the University of California and John King who can be considered to be the founding fathers of research of academic research into ICT and public administration, they wrote the original papers way back in the 70's and they have been, I suppose, almost god-like figures. And they did a study a number of years ago, mostly based on US data although they did come to some European countries, what affect ICT had and their conclusion was this: this paper suggests that e-Government will fundamentally alter government structures or performances, engagement and so on are likely to be dashed. Now, let me say at this stage, does this mean we should probably all fold up now and see if the hotel will open the bar? No, it doesn't. I believe in fact there are some very positive things that can be done and I would like to turn now to the art of the possible – politics has been defined as the art of possible, also Von Bismarck I believe was the first person to say that.

There are two things I think we can do here in ICT: one is we can look at what can be achieved with transparency from better communication; I would like to look at just a couple of examples. The second, which I would like to spend a little more time on is the concept of transformation by incremental improvement, because my view, a very firm and increasingly more as I get older and uglier, of the view that incremental improvement is really what its about. We've got to move away from the era of big bang, lets change everything with one great glorious project to a world view which, as we see reflects the best thinking in industry. Here are two examples of transparency by communication: this is Missouri government and this system is actually quite fun if you've ever looked at it, do have a go. You can drill down into your Missouri state taxes and you can see where your money is being spent. Its simple, I'm sure its not simple underneath but from the citizen's point of view you can actually search contracts, I can click on the vendor button here and I can see which contracts has this vendor got from the State of Missouri? Now, that's given a good deal of transparency, and as a citizen I can go in there and if I suspect Smith Industries has got someone inside the government I can go and see how many contracts has Missouri State given to Smith

Industries. So, that increases transparency and, of course, at the same time makes it more difficult to have corruption within the public service. Here's a rather more radical one which is City Soup, which is a local communication system within California, and that again is providing all sorts of local government information. So there are things that can be done within IT to actually improve communications to make information available to the public. There is reasonably good evidence that that does actually add to trust in the government as an institution but not in a kind of radically transforming way.

Which brings me to the second theme that I want to look at. Those of you will recognise this as the Toyota logo, and that is the concept of incremental improvement. Tashiro Toyota founded the Toyota Motor Company in 1937 out of his family business, Toyota Industries. At that time General Motors was, I think, the second largest company in the United States, certainly by the mid-50's General Motors was the largest company in the United States. Most of you will know that this year, Toyota overtook General Motors as the largest car company in the world. Now, how did Toyota do that? They did not do it by launching any stunning product, apart from possibly the Prius which is a relatively recent arrival, Toyota have not brought out a Walkman, they have not brought in an iPod, they have not brought any stunning new shape in marketing to change the name of the game product, they have built cars. They have built cars that have consistently got better, and it was Toyota himself and his engineers that developed the concept of continual improvements: small changes everyone making things better. And over a period of time (this will not happen overnight) but over a period of time that has enabled Toyota, with some justification, to advertise they make the best built cars in the world. I can remember in the 1970's when I was buying my first car, that even in those days Toyota had a reputation for reliability that Ford and Opel and other European and American cars did not. I think this is a model that we can adopt for use of ICT in government.

This is the late Claudio Ciborra who died last year; he is a distinguished academic from the London School of Economics. Claudio Ciborra writing about competitive industry but the analogy still holds. He said that real competitive advantage in a competitive company arises not from some enormous breakthrough – you can do that in IT but you can't sustain it so some famous examples, people talk about Latin American airlines and Laymen Brothers and American hospital supply, these were big competitive leaps but they couldn't be sustained in the long run. What is sustainable is, he said, are a thousand small advantages. Claudio was quite fond of paradoxical statements, and he said plan for small breakthroughs by which he meant lots of small improvements, ever making something better and better and better. And he says that companies that do that are very difficult. He uses a wonderful paradoxical phrase

called imperfect limitability. By which he means it's extremely difficult for a competitor to copy this. Now we are not in a competitive business here but the same principles, I believe, can apply. I want to give you one small example from Ireland just to beat the national drum for a bit. This is the national pig identification trading system. I suspect nobody will have ever heard about Aujeszky's Disease and most of you within a week will have forgotten what it is but it is a serious disease of pigs. This used to be controlled basically by an inspection regime, so the government would go out and they would inspect pig farms and they would certify farms as being disease free or not. This is a very expensive process even though the pig farming business is not an enormous part of Irish agriculture. They then changed the system whereby they actually gave pig dealers and farmers access to information on the status of each herd. So I, as a pig farmer, could log in to this system and actually look up a particular herd. So if I was going to buy a pig from somebody I could check this person's herd status very quickly. Now, what this meant was if I bought a pig from x and x's herd was infected then my herd was immediately suspect and I would find it difficult to sell my pigs.

Within a relatively short space of time, of course, pig dealers with infected herds were not able to sell any of their animals. So we now have a win-win-win situation: win in the sense that the consumers are informed, win in the sense that the government needs regulation; win in the sense that the disease starts to climb much more rapidly than before. It's a very simple thing. Its only a small community, this is a tiny fraction of 1% of people working in Ireland. It's a small improvement, but it's a big improvement. We could use lots and lots and lots of these. So this is an example of moving from regulatory to simple market control by just providing information. So the Agency becomes not a regulator of a market but a provider of information, and then lets the community sorts its problem out itself.

So, lets go back to the three questions: what can ICT e-Government do to improve institutional trust? I would argue not a great deal. But it can do something. It can improve communication, it can improve transparency and help that but fundamentally you are up against much larger forces that will undermine the best efforts of ICT. Can government be transformed by ICT? I would argue yes. Now, there are some of my academic peers who would say no, and I have argued with them in bars across the continent of Europe but I believe yes. I believe if we adopt the principle of incremental improvement then we can totally transform government, and I will show you why in a minute. What can be done to improve citizen trust in online government? A great deal. By cutting good systems; secure systems of high quality; we can certainly build trust. So there are very two positive areas, and one area in which I believe a limited amount can be achieved.

So let me come back, I know you've all been waiting for this, I want to come back to the aircraft. But before I do this, I just found this in my travels about two weeks. We will all have wasted time here because American scientists have discovered a hormone that you can have in a bottle if you squirt it into somebody's nose they will be more trusting. So maybe the way to build trust in government is to issue people with bottles of spray and that's what will be happening! I just have this vision of you going to invest in this huge mega-project and somebody has loaded this into the air filter system!

Let me go back to my two planes. I want you to observe something about these aircraft. First of all, they are both basically the same shape. They both have, this one has two wings but the engine is on the wing, there is the fuselage, there is three wheels over the wheels in the front here, the tailplane arrangement has got two elevators which is actually quite different from the original Kitty Hawk, if anybody looks up the Wrights' aircraft, or the way most birds are constructed. So, by the 1930's a basic shape for aircraft had emerged. Somebody who had gone to sleep in the 1936 and woke up and found themselves looking at an Airbus A301 would recognise that it is an aircraft instantly. We still have two engines on the wing, we still have a tailplane, we still have the fuselage and we still have the three wheels. However, between these two aircraft there is a vast difference. What? Well, in 70 years we have jet engines, with super-critical wings, with pressurised cabins, with avionics, with retracted undercarriage, we have hundreds and thousands of improvements. This was not one big breakthrough. What I am saying is that the form of an aircraft really established itself in the 1930's, there are small variations, people put the tails on top and the engines at the rear but only one really radical difference in design which is the helicopter which is very specialist. Most commercial aircraft, and if you look at the Airbus A380 and you look at the new Boeing 3-Line they still look like that, almost exactly the same shape. But inside, they are totally different. Now, I am going to argue that governments are somewhat similar.

Governments have evolved the way they are for good reasons, right. And radically changing the shape of government using technology might just not be the right way to go. But we can certainly change the inside of government. And we can change it in radical ways so that it is much better, cleaner and safer. We would feel much safer getting in, I suspect most of us, into the De Havilland that used to be on display in Dublin Airport, its a very frail looking plane, I can tell you when you are up close to it but, and this is the big but, despite the fact that we now feel safe about the aircraft it does not make us love the airline.

The Minister mentioned Ryanair; I flew to Sweden last week in Ryanair. It cost me 3 Euro and 1 cent, including taxes, and I felt perfectly safe getting into the plane. I trust Ryanair's

planes, I trust their pilots, I trust the aircraft's control systems to get me there. I still don't entirely trust Ryanair because they have cancelled flights on me; when a plane wasn't full they cancelled the flight. So, its one thing to trust the technology, it is another thing to convert that trust into the actual institution that runs the technology.

This is my message to you: that really we can do an awful lot to improve how we are governed, and the way we are governed but that won't necessarily deliver trust in government itself. We can deliver trust in government systems, and trust in government processes but trust in government is a more subtle idea. Let me finish with this thought: I am an engineer and some of you may also be engineers but whether or not you carry engineer on your business card everybody in this room is in some sense an engineer, a software engineer or software desire. About four years ago, I suddenly found myself having to teach all of final year engineering at Trinity in course and project management at 4 o'clock on a Tuesday afternoon, and I can tell you that's not an experience any of you ever want to have. But since I hadn't taught so many engineers before I borrowed a book called 'An Introduction To Engineering' and in the opening section of that book there was a sentence that I found really interesting, and it was what is the difference between a scientist and an engineer? And the answer was a scientist wants to know can it be done; an engineer wants to know can it be done better? And I suggest, maybe as a thought for you to take to your conference today, can I do it better? The process of continual improvement and if we can do that we will deliver great things for e-Government. Its a very challenging, a very brave subject, I thank you for inviting me here and I hope you have not regretted inviting an academic to give you a talk, and I wish you a very productive and enjoyable conference. Thank you very much.

Nachman Oron

Thank you very much Dr Bannister. This was an excellent introduction to these three days we are going to have here in Ireland. As you agreed, I'm opening the floor for questions and comments. If you wish to do so please state your name and country and Frank will be happy to answer your questions.

John Riddle, Canada

I was surprised you didn't consider recourse – you had a list of slides where you said that ICT could only help in one area and you didn't say recourse, and I am wondering why you omitted it because it seems to me that ICT is incredibly useful and will continue to be more useful in providing recourse for citizens. You also didn't mention the media and the kind of debilitating impact of the media on trust.

Dr Bannister

Yes, lets deal with those points in reverse order, if I might. I did not mention the media; I did not mention a lot of things. I had 45 minutes and I tried to keep within my time but there are a lot of angles that I could have explored. What I meant by recourse is that if I, as a citizen, feel that I have a grievance, a problem with the government or with the police or with some arm of the state or the health service or the department of social welfare, that I have some mechanism whereby I can actually address that. In Ireland, if I go back 20, 30 years we did not have such mechanisms so often government departments, for example, would, if you had a problem with a government department, you could have spent ages trying to get somebody to speak to. Now, most government departments are much better and we actually have several ombudsmen and complaints commissions to whom you can go. Now, what can ICT do to improve recourse? Not a great deal, I would argue. It can do the same things that I said on the slide, it can improve communications and it can improve transparency and we can certainly put in systems for filing complaints and for tracking complaints through the system, etc. But the real nub of the trust issue is the accessibility to such things. The ICT facilitates it but its recourse in its own right. So ICT can facilitate a lot of this stuff but fundamentally if you got a government that tells you to go take a hike every time you complain then nothing that your computer, no matter how good your computers are, if the state says that, you are stuck!

Frank McDonough, US

Is there any data, which compares the different types of governments, like social democratic governments, capitalism versus democracy, communism, and dictatorships? Is all the data coming out of pure democracies?

Dr Bannister

I don't know the answer to your first question because I am an information scientist so I don't spend a huge amount of time in the political side, I do spend some time in the political side of literature were I suspect you will find that kind of data. The answer to your second question is to the best of my knowledge is yes, all of this stuff is coming out of democracies. I am not aware of anything coming out of a non-democratic state, and by that I would include, for example, certain middle-Eastern states where I would hear people at conferences but you don't tend to find this subject being brought up! Its particularly a US concern and in certain European countries. There is quite a lot of some excellent work done in the University of Leuven in Belgium and particularly people like Don Norris and others have done good work in the United States but I am not aware of anybody looking at it in a non-democratic, lets not say capitalist, lets say free enterprise or open economy.

Jim Alexander, Canada

Thank you for the talk, I thought it was wonderful, very insightful and covered a lot of material as you said in 45 minutes. I think one of the things that I observed and wouldn't mind your comment on is that I do agree that ICT really can't do a lot in terms of transformation but I think one of the things that CIOs in a lot of jurisdictions find is that they are often called upon or, I don't know whether its the discipline of ICT or the work that one does, we tend to be in a position where we are responsible for those horizontal things across an organisation and/or for somehow being involved in the thinking around transformation. Its not necessarily ICT which is directly involved but its almost the discipline of ICT leads one to question either better ways of doing it and one in partnership then with the programme areas, or the business areas, in government causes something to change, whether its dramatic and transformative or just incremental is a question but its often not the ICT but more one's background and discipline and where one finds oneself in the senior management ranks of the administration that causes us to be involved in transformation, as individuals in an organisation more than as purveyors of technology.

Dr Bannister

Yes, I could talk about this at some length but I will try to be brief. Leadership, wherever it comes from, either comes from the CIO or from elsewhere in the organisation, is critical. I did my PhD, essentially looked at two Irish government departments and how they used ICT over a 30-year period. One of them was extremely successful: pioneer at various stages – at one stage they were Digital Equipment's largest customer in the world in Ireland, a very successful system. Another starting from roughly the same base got nowhere, got really stuck with this technology in the early 1980's and things only happened in the late 80's and early 90's when there was a real crisis with the system. My diagnosis of that was that it was really a leadership issue, and you really needed three types of people to lead. You needed somebody who was non-IT visionary at the top, typically the senior executive in the department. You needed somebody who was a technical genius who had the IT vision but most critically you needed the third person who had an understanding of the IT and understanding of the politics and who could clear the way, and when those three things are in place then you can see this in business as well as the public sector, things happen. If you don't have good leadership then things don't happen. Its fascinating, but let me stop there because I will continue on too long and I know somebody else wants to ask a question here.

Frank Leyman, Belgium

First of all thank you for your presentation; it was really interesting for me. You say that ICT as such does not give us a lot of improvement if you keep it too technical a level. I come from the private sector and I strongly believe in the customer/supplier relationship that we might as well do in the public sector; we tend to forget that citizens, at the end of our day, are our customers. Will you agree with me that besides using the ICT tools we could start by just putting a face on the surface that is often by public sector? You tend to come into a cloud of services which is completely anonymous, whenever there is a possibility to contact over the Internet a government service, it is info at --- 'I do not know what'; completely frustrating! Putting a face on that immediately allows you to put the notion of accountabilities, I think. That generates trust with the citizen – I drop a question to a certain service department and I know who I am dropping it at and I know at which door to knock to ask him for additional information.

Dr Bannister

I think that's a great idea, the problem is it costs money. The solution to this will be, I think, maybe 15, 20 years from now when artificial intelligence has got sufficiently sophisticated that people cannot tell the difference between a computer and a human. But at the moment, for example, the difficulty is simply that if you want to put a face there you have got to put a person there. There was a very interesting example of this in the early days: somebody from The Guardian, the British newspaper, one of the British ministries, government departments, announced that they were now taking press queries by email, big breakthrough, right? So this Guardian journalist sent in some question to the Minister. And he waited three or four weeks and there was no reply. So eventually he rang up and he said, what happened to my question? And he discovered, somebody may know this story, that what had happened was that it came in on email, it was printed out, it was stuck into the old paper system and when the paper system had done with it, it would be printed back into email. So we are stuck with sometimes ancient structures behind our nice faces, and one of the arguments, another day's work here is that far too much time is being spent on the web and not enough time on the linking of what's behind the web. We are only now getting round that, the British government, I think, abandoned 500+ web sites recently, and that says it all. Okay? Thank You.

Nachman Oron

Okay, and thank you very much Frank for your participation, thank you very much for the excellent kick-off you gave to our conference.