

FutureNovo Interviews – Ian Pearson, futurologist

FutureNovo – Anticipating things to come

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For much of his twenty-two years at BT (formerly British Telecom), Ian Pearson worked as their futurologist, tracking and speculating about future developments and their impact on society. He has written and spoken widely on a broad range of futures topics and has several inventions and patents to his name, including the active contact lens, a technology which has seen recent advances in the lab. Since leaving BT at the end of 2007, he formed Futurizon, a futures consultancy and speakers agency.



FN: Since leaving BT, you're working with Futurizon. What does Futurizon do in the futures field?

Pearson: Futurizon is a small futures consultancy. It's essentially just myself on the futures side and my partner runs the business side and the speakers agency. We look at all aspects of the future right across the board .

FN: What areas are you currently focusing on?

Pearson: I suppose the only degree of focus is to start with technology and then work from there. Other than that I suppose I have a bit of a bias toward the future of information technology rather than biotech. I'm definitely focused on the implications of the future of IT advances and a few other advances across the board. I suppose the challenge of the current focus is from looking at translations of the real world to the virtual world. Also looking at the biotech convergence with information technology.

FN: Your recent paper "Carbon" has a number of ideas for dealing with carbon emissions. Where would you say we're currently falling most short in terms of our approaches to CO2 and climate change?

Pearson: I would say that we're still following 1960's and 1970's ideas which I would call environmental dogma rather than following a bigger plan. And what I think is particularly missing is systems-wide thinking. People look at one little tiny component of the environment and that's all we get. So we get people saying, "We need substitutes for oil so we don't use so much oil", and they jump on the first bandwagon that comes along which is biofuel. As a result of that people are now chopping down rainforests to make land available to grow biofuels on, which is completely counterproductive. And of course we're seeing echoes in the price of rice and other stuff because of the shortage of land available. A tiny bit of systems thinking would've shown them that it's a really stupid idea from the outset rather than going all the way down this road. But it's already heavily ingrained policy.

In other areas, people are putting way too much emphasis on trying to recycle stuff. In some cases it's a good idea, in some cases it's pretty borderline. I think the overemphasis on recycling takes people away from other ideas, such as putting it in blocks and creating a carbon sink by chucking it into the sea. You could compress the plastic into great big blocks and substitute them for concrete blocks for dealing with coastal erosion which is a big problem where I live. Producing concrete creates large amounts of CO2. But produced as plascrete we wouldn't have to do that and it would still stop the erosion. It would also solve the land fill problem and we'd be reducing our carbon stake at the same time so it would be a four-way environmental benefit. What I think we're missing is there's too much focus on old fashioned ideas. The idea being that we must stop doing this or that, that we must find a path backwards. I'm much more

in favor of finding a path forwards and trying to accelerate toward tomorrow's high technology to deal with the problem.

Another thing that's worth saying on the environment, climate change particularly, is there's a lot of scope and possibility to use technology. We all know that solar power is capable to a degree but we also know that the panels aren't very efficient and there's quite a lot of pollution in making them. But there's a heck of a lot of R&D going on in that field. I don't think it's too optimistic to expect that at least in desert areas in the future – there's quite a lot of desert in the US and quite a bit in North Africa, as compared to Europe – given advances in superconducting cabling, we could look forward in 20 years time to seeing African solar farms – large areas of desert covered with solar panels which are fairly efficient – producing all the energy requirements for Europe. And then we could just stop using oil.

FN: Once you start bringing together the different technologies, converging the superconductors into the equation it really opens up a lot of possibilities in terms of distance.

Pearson: A huge problem there of course is you can't get power to the right place because it evaporates out of the cables due to EM loss. With superconducting cables you can solve an awful lot of that and export the energy from where it's produced to where it's needed.

We could also bring about the hydrogen economy if we still want to do that but I think even the hydrogen economy is a bit over-rated. I'm not sure we actually need it.

FN: Given the changes that have occurred, the new technologies, the convergences, the amount and rate of change, would you say your work is harder or easier than it was twenty years ago?

Pearson: It's probably harder but it's much more fun. I think there are far more things to look at now which makes it much more interesting trying to analyze where it's going to go. I think the world was a lot simpler twenty years ago. There weren't so many technologies moving so quickly in so many different directions. Now it's much harder to work out how they'll all interact, but of course that creates more work for us futurists to analyze. And if you're good at analyzing it then you come up with some good insights and make a decent living from it. I think that the rate of change has become so fast that a lot of companies are really quite worried about it, how it's going to affect their business.

FN: The converging fields of biotech, nanotech and robotics are going to bring some enormous changes in the coming decades. What development do you anticipate will have the greatest impact, both on society and on individuals?

Pearson: I think it depends how far in the future you're going. But if you take a quick timeline, in the next 5-10 years we'll be able to print electronics straight onto the skin surface and start making rudimentary connections between the electronic world and our nervous system as we're eventually able to treat our nervous system as an extension of our IT. I think we'll be able to do things like recording sensations and replaying them, using them in virtual worlds and other sensory environments. We'll also enormously improve communications. With artificial intelligence coming in parallel with that, we'll eventually see conscious machines which are as smart and eventually smarter than people. I think things progress in parallel and nanotechnology of course is one of the drivers but so are biotech and information tech. With the ability to link all of these together as they develop, around the 2030's we'll eventually start seeing what are essentially brain nanos spreading technology into our brains. Not probably as an implant or something like that, more likely an injection in your arm where the nanos migrate and make connections with the neurons in your brain. I think once we can get to that point then we can start seriously increasing the capabilities of the human brain by adding an external capability to it. Then we start seeing something that's very exciting which is a convergence of man and machine. We'll be able to increase the abilities of man and bring it up to machine level. Eventually, we'll need to do that so we can

keep up with the capabilities of the machines because we have to make sure we can maintain control. Otherwise the “Terminator” scenario becomes entirely feasible and none of us wants that.

FN: As technology has sped up our lives and made them more stressful, one response – as you’ve noted elsewhere – has been the development of a go-slow movement. Another response has been to develop further technology to better keep up. Down the road we’re looking at implants and meta-cortexes to vastly expand and off-load our own memory and processing. But what kind of coping technologies do you anticipate we’ll be using until then?

Pearson: I think what we’re going to see is a polarization of society to some degree with a lot of people who really don’t like this, who really want to conserve a very natural, very slow, traditional existence. Those are the people who want to go backwards and would rather live in the 19th or 20th Century. I don’t have a problem with that as long as they don’t try to stop the rest of us from moving ahead as fast as we possibly can in using technology to make our everyday lives even better.

We technophiles have to recognize that not everyone is a technophile. Some people are technophobes. And we must learn to live in the world in parallel with each other.

I think one solution for these people who don’t like the technology and try to avoid it, is that it’s going to get a lot easier. I think one of the really big focus areas in the next couple years is making things much easier to use. That’s already well under way in the iPhone and iPod. They’re ridiculously easy to use and they’re selling like hotcakes because of that. And people who buy those devices use the capabilities more than they ever used to with more difficult PDAs. So in making things easier, there’s much more of a market. I think we’re going to see much more design featuring simplicity rather than higher functionality. We have far too much functionality and people like Apple have realized to their enormous profits and sales that by throwing away a lot of the functionality, making it easier to use, people are using them far more. I think of that sort of thing as a coping strategy, getting rid of all the fat and all the things we don’t need, things that are just there to show how clever some software engineer is and putting the customers ahead of the ego of the engineer writing the code.

FN: You’ve written a lot about technology invading our privacy, creating a surveillance society. Do you think this is inevitable given the changes that are occurring or could we be doing more about it?

Pearson: We have here in the UK an information minister and he used the delightful expression that we’re sleepwalking into an Orwellian society. I think “sleepwalking into 1984” is the way he put it. I think government or any administrator or administration is naturally inclined to want to administer more. If you give them access to technology that allows them to monitor everything, they will, given half a chance. It’s up to the citizens to reduce that, and we do see it in civil rights, civil liberties movements around the world. But nonetheless, we’ve ended up here in the UK with probably more surveillance per capita than anywhere else in the world. I’ve heard some figures that we have one quarter of the world’s CCTV cameras and only one percent of the world’s population. We don’t need that level of surveillance. In some cities they’ve been criticized of human rights abuses. It’s the sort of thing you’d expect in some African dictatorship or China. We’ve really got too much surveillance, far too much erosion of our privacy. And the way this has been allowed to happen is that people haven’t been very consciously aware of it. Most people don’t know that they haven’t got that privacy, but they still think they have. They think that when they send a text message to their friend that no one else is able to read it. They don’t understand that the government is able to read it, that it’s being analyzed by machines to check that it isn’t being used for terrorism. There are authorities all over the place who have control and access to our personal data. As you add computer technology and centralization, what we’re seeing are huge amounts of data which are very personal being concentrated in a number of ways where anybody in public service can get access to it. I’m very worried by that. There aren’t enough checks and balances.

FN: Over the years you've put out a number of extensive technology timelines forecasting the development of everything from emotion badges to video tattoos to smart yogurt. How do you feel about their accuracy over time and do you find most of your earlier short-term forecasts coming about a little sooner, a little later, or about on-schedule?

Pearson: We were challenged quite often with people saying the technology timelines are a waste of time because you can't predict the future. When we've actually looked at the older ones and looked at each item to judge whether it has happened, more or less on schedule as we expected it, we found that we got between 80 and 85% of them reasonably accurate. I'm quite pleased with that. It's difficult to predict the future with accuracy and to get 80-85% is very useful. But we didn't actually put a whole lot of effort into making those. I think if we'd put more effort into thinking about it, we could probably be more accurate, attaining 85, maybe 90%. When you really think about it, with technology, that's probably not unobtainable.

But in terms of whether we got things too early or too late, we pretty much had a mixture. We got memory technology happening sooner than we thought. Mobile phones also took off much faster. Other areas like virtual reality have really gone off on a tangent and not really happened the way we expected at all. We expected a fully immersive virtual reality and what we're seeing instead is a flat screen where you're in sort of a virtual world where you wander around but it's not really immersive. But people are happy with that compromise. You don't have to wear a clumsy headset and get eye strain. We really didn't anticipate it that way. We really thought that the immersive form was better. We made a few mistakes based on misjudging what people really want. So there are always surprises.

But we got far more right than we got wrong. Almost all of the development that we've seen on the World Wide Web, all the social environments, all the auction houses and the search engines and things like that, we pretty much predicted those. Pretty accurately, I think, way back in 1990, 1991. So there were no real surprises there. Most of the telecom stuff was pretty much the way we expected as well. Although, the bandwidths that we're getting to the home are much more disappointing than we expected. We were expecting to have gigabits per second by now rather than just a few megabits.

FN: But that last mile issue is still big.

Pearson: It isn't just the last mile issue. There was a whole change of progress caused by the interaction of regulation and an unfortunate invention which was DSL technology. Somebody very clever invented it but had they not invented it, we would've been forced to go all the way to bringing optical fiber to the home and we certainly would have had it in by now. But because we got DSL, it gave people who are a little bit tight-fisted the opportunity not to spend, not to invest and to take it much easier. So we're seeing a much slower rollout for the web than we would've done had DSL not been invented. So to some degree, the combination of government interference and regulation coupled with a penny pinching, risk-averse telecoms industry coupled with a couple of unfortunate inventions like DSL have really slowed things down.

FN: How do you think your time at BT influenced your approach to forecasting and the future?

Pearson: I suppose being at BT exposed me to the capabilities of the future of computing. Before that I was working with computers in the missile industry but I was never working with computers per se. When I moved into BT with the system engineering skills which I had already developed in the missile industry, I found it was really interesting looking at the future of computing. Although I was getting involved in optical fiber networks and computer protocols and things like that, I found that my attention kept wandering back to the kind of future computers were promising. I spent more and more time thinking about the potential of IT rather than actually designing the stuff for the present. So I became

more and more future-focused and after five or six years of that I became a full time futurologist just thinking about the future all the time.

FN: What advice would you give to aspiring futurologists today?

Pearson: I think the most important thing futurologists can do is that you've got to make a lot of time just to stop and think. I think far too many people spot a new technology and they just jump to the immediate conclusion that everybody's going to want to do this. So we get these lunatic fringe predictions. By now we were all supposed to be flying to work in helicopters or going in hovercraft. There are lots and lots of new ideas and people just look at them and jump to the conclusion that it's a good idea and it's definitely the way it's going to go. What the futurologist is supposed to do is have a systems-wide view where they think about all the different implications, not just the technology on its own, but how we combine the data with this, how will regulation adjust, how will the politicians treat it, what will the market do? If we think about how all these things interact, then we get a much better, more insightful view of the future. I think that's really what a futurologist should focus on. Too many people look at too narrow a field and don't allow enough time to take a whole system-wide view.

FN: Finally, is there any topic you'd like to speak about that we haven't addressed?

Pearson: I think one of the things which we tend to overlook is the ethical side of all this. I think that's going to be a really big challenge. If you look at the speed governments analyze technology, how fast they respond to it, how long it takes regulation to catch up, if you think about the amount of convergence in nanotech, biotech and information tech, AI, genetic modification, the man-machine convergence, there are so many issues out there which will address the fundamental nature of life on earth and us as human beings. It's going to take a great deal of thought to figure out what we should do, what should be allowed, what we should not allow and how to regulate. I don't think we're putting anywhere near enough time and effort into that as a society. And these things will just suddenly arrive over the horizon and we won't have time to think about what we want to do with them. These are very powerful technologies. Things like artificial intelligence and genetic modification which would allow us to change the whole nature of the world around us. In the wrong hands these could become weapons systems or there could be an accident that would cause absolute devastation on an unimaginable scale right up to the full extinction scenario. If we're not careful and we don't think things through now, we're just asking for it.

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