



Capturing the Past, Inspiring the Future

Eva Pascoe

Interviewed by

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Welcome to the Archives of Information Technology. It's the 17th of November 2019, and we are in Hampstead, London. I am Elisabetta Mori, an interviewer with Archives of IT.

[00:11]

Today I'll be talking to Eva Pascoe. She was co-founder of Cyberia, the first Internet café in London, in 1994. During her career, Eva pioneered women's participation in online business, online secure payments, e-commerce fashion solutions, and electronic customer relationship management. She is currently the chair of Cybersalon.org, a non-profit digital think tank she co-founded in 1997. She works with a retail practice, developing strategies for large and small international retail companies supporting young fashion brands with women founders, like Bluebella.com and Thefoldlondon.com. In 1995, jointly with Gene Teare, she was awarded the Sunday Times Technology Award. Welcome Eva. Where and when were you born?

I was born in Poland in 1994[1964], in a small town, Tarnów, in the mountains.

[01:10]

Can you describe your parents?

Well I was born in communism, so, people did what the communists told them to do. So my father wanted to be a musician, but the communists needed economists, so he became an economist. Which with time he learnt to love, even ended up doing a PhD in economics, and met my mother at university, and she was studying economics as well. So, from a family of economists. [laughs]

What was your family life like?

In a way we were brought up in communism, so there was very little money, and you had to entertain yourself, doing things that kept you interested and stimulated. So I remember reading a lot, but also making things. You know, if you wanted a computer, you needed to make one. So we would go from one tech market to another just buying different components and putting them together. Eventually we got a Commodore 64, but that was much later, that was at the first university. So, earlier on it was really, make yourself. So we had lots of friends who were interested in

computers, because at that time there were, early games were arriving, and we see the boys wanted to play, and you wanted to play, you had to build one. But, you know, in Poland women were interested in computing as well. It wasn't such a big gender difference. So I don't remember that big of gender as in the UK. So, yes, all, all my friends were interested.

[02:41]

Who were the important influences on you in your early life?

I think my father was one of the biggest influences. He was multilingual, spoke German and English and later on Spanish. Had always a very global outlook, and travelled a lot for work. So at some point we ended up living in Africa, in Zambia, where I got the taste of, the first sort of English environment. And so, it, it helped me, because, before, I wasn't really aware that I actually can learn phrases and street language really quickly. You know, I never lost my accent, but, you know, I can do one-liners like anybody if need be. [laughs] So, so definitely influenced me with my more global outlook. And even today, he is in his eighties but he is very interested in life, and, corresponding with his colleagues in New York, and always digging out some interesting projects. So he sort of taught me to be curious.

[03:45]

What was your first business?

Well we never had any money in communist countries, and, despite the fact that my father had a decent job it didn't actually translate into much finance. So, I wanted to travel. Even in Poland, we didn't have passports, so I couldn't travel that much further, but, I came up with this idea of making dresses from material which people used for nappies, petra. So when you think today, everything is Pampers, but then, people made nappies of actual fabric, and it, you could dye it in a kind of hippy way, with the tie-ups. So I used to make these dresses and dye it, and ruined my mother's bath for years onwards, full of dye. And the dresses were kind of, slightly arty and bohemian, and I used to sell them in little market stalls in Wrocław where we lived then. And I kind of, realised that actually if you make something, people were prepared to pay for it. And that stayed with me, that ability to, you know, use

something, use your hands to making beautiful creations. But I wasn't really interested in fashion, so then, my second business was, teaching English. I set up a little gig economy thing for teaching English during university, and that was a much better business. [laughs]

[05:04]

Which schools and universities did you attend in Poland?

I was quite lucky. I was educated in Wrocław, which had a very creative environment. It was a town which came to Poland after the war, originally a German town. So it wasn't really settled, and it wasn't conservative, it was very liberal and progressive, even for the communist standard. So I went to a school which was extremely radical in a way, and definitely politically radical. So that's where we learnt what's slightly counter to current line of thoughts. So it opened my mind to having a different view on life. Then I went to Warsaw to study languages, mainly Spanish and modern languages, and really with the view that I probably will want to travel. So to get out of Poland, get some interesting projects, you needed to study languages. And I absolutely fell in love with Spanish. Even now, you know, I don't use it much at work but it's just such a wonderful language. So I did a few years there. But then Chernobyl happened, and after Chernobyl I realised that, actually human error and human brain is very restricted, and technology, exciting as it is, is very unforgiving. And I got interested in that interaction and the juncture between human brain and display of technology, [Polish]. So I became obsessed with, saving the world from [Polish], but interfaces. Because essentially Chernobyl was a number of different things, but one of them was poor display, and the poor display was an interface design problem. So, and I found this degree in Birkbeck College in UK, one of the very early human-computer interaction degrees, and, got myself through that degree.

[06:51]

When did you move to London?

Well I moved when I started, just before I started college, and, you know, I had absolutely zero money, so I had to work. And I got a fantastic job as a business analyst for a company in, I think it was in Royal Oak. So, you know, discovering Bayswater, multicultural, the smells of beautiful Arabic food. It was just so amazing at that time. But, that lasted about, three years, because my degree was part-time. So studying, I was working full-time and working on my, on my undergraduate degree in the evening. So, I basically had a full-time job and a full-time degree in the evenings. But I don't remember being tired, so I must have enjoyed it. [laughs]

And this was 1986, '87?

It was, yes, I started sort of, '86, '87, and then I graduated in '91, from Birkbeck College, psychology degree. I managed to get 2:1 somehow, despite the fact that, you know, I had a full-time job. But it was fascinating, and also the lecturers were from UCL, so that's why I got to know about the group that we followed with Peter Kirstein and the UCL computer science.

[08:05]

And then you also started a PhD?

Yes, when I finished my undergraduate studies, I got really interested in decision-making, and particularly decision-making and the dynamic context. So how people respond to, a situation of crisis, situation where you have to make a decision quickly. And as it happened, there was a grant for such PhD. So I thought, it must have been karma. So I applied for that, got it, and then spent three years researching interface design for nuclear power stations.

So what were the influences on you at this time?

I... I was very lucky actually. As part of the degree we had courses with people who designed interfaces for a number of different industrial settings. So we had the setting, I could study how the operators approached interpretation of information in a fast-moving environment, from chemical environment, from oil exploration. So everywhere where decisions are made quickly, and the decisions need to be made in a,

in a way that you cannot correct it, you know, your first call is the last call. So I was interested in that, and that was the subject of my PhD.

[09:23]

And in 1993 you continued your research and got a fellowship at City University.

Yes. That took me in a slightly different direction, because that fellowship was with Imperial Cancer Research, and it was about how people interpret information on the screen when it's a health risk. So for example, how doctors can be supported giving women information about the percentage of the breast cancer. Because for most people, obviously nobody understands percentages. So how can you translate percentages into language? And then again, I spent, you know, quite a long time looking at how people understand numbers on the screen, versus words, and that taught me that, with the interface design, when you start showing numbers, neither... You know, absolute numbers and percentages are really challenging for people. So, then we started looking at display of graphical, visual, to, to support people better. And I think that, I used that information later, because I realised people are incredibly limited in what they can interpret, particularly under pressure in the dynamic sense. So, further work with hypertext, and visualisation of communication on the screen was really the solution to, really disappointment [laughs], how limited humans are. You know, how little can we cope with, and how often and how quickly we make a mistake. And then insist that we made the right pick. So I was always interested in that limitation, and I think we still under-appreciate the limitation of human brain and interfaces.

[11:04]

And on the 1st of September 1994, Cyberia Café opened, 39 Whitfield Street in Fitzrovia, proving desktop computers with full Internet access. So can you tell us about the opening and the first days of Cyberia, how you arrived there?

Well, the opening of Cyberia, the first day was pretty crazy, because, although we didn't tell anybody that we were actually opening, because we didn't even have a PR agency, suddenly the word has gone out, and everybody told everybody, and we had a queue three deep around the house. But I was sort of hoping that we will get some

women, because we were telling our female friends that it was happening. But unfortunately, for the first day, and then for many months after, all the visitors were men. So that was the first day. But, then we very quickly started attracting digital artists, so we found quite a few women digital artists who were using the early Dreamweaver, which was the Macromedia tool. And I met a team, co-operative team from Australia, VNS Matrix. They were using computers for digital arts. So we started putting digital art into the café, and slowly, slowly women started coming.
[12:23]

But the opening was crazy. We got everybody from *Vogue*, *Cosmopolitan*, *Marie Claire*, and we didn't even invite them, they just came. [laughs] I think we were quite lucky, because, Charlotte Street was near the area where all the big advertising agencies were, so Saatchi's, yeah, all the big agencies. And they were very interested in the new media. Because at that time, Mosaic just opened, Mosaic browser had just become available, so they could see digital pictures on the computer.

[break in recording]

[12:58]

Yes, I think, just to give you the context. The tools we had when we opened Cyberia were extremely limited, because the speed of the Internet at that time relied on very early modems. I think it was Sportsters. We, we were connected, but it was tiny, you know, the bandwidth was still tiny. So, people were very excited about it, but I think they were more excited about the idea than the reality. But we did have email, we did have FTP, and so, Mosaic just started, so you could download software, you could download little games. You definitely could email. And so, if you knew the address of the page you wanted to look up on the Internet, you could find it. And that was enough. [laughs] I remember people dialling up to Louvre. Louvre had just gone online, I think virtually, a few days after we opened Cyberia, with quite nice collection of scant images. And, you know, that was such a revelation to people, that you don't actually have to travel to Louvre, you can put URL in to the computer and see a collection of amazing paintings. You know, it took a while to come down, and it wasn't like, you know, smooth surfing as we know today, but it was there. So I think it was just the revelation of the visuals. Because before, you could send pictures but it would, you would have to use FTP, and then open another URL, and it was all a big faff.

[14:28]

And also with email, before email was available, you know, I had email as a PhD since ever, but, it wasn't exactly easy to use email. We started using interfaces that made it intuitive, so people could just get the hang of it really quickly. I mean, people still didn't understand what's a back button on Mosaic, still quite, took forever. I still don't think people understand back button when you bring new people to it. So there were still navigation issues. But more or less you can, you could function. And that was the reason why we had Cyberia in the shape, in a U shape, so the computers were facing inwards, and people... It wasn't private, it wasn't private browsing. We were very keen for the browsing not to be private, because, obviously the Internet was full of good things, but also, slightly dodgy things. So we wanted to make sure that the environment was welcoming, and everybody was comfortable with it. But more so that people could help each other. Because if you have a number of computers next to each other, and somebody could stack, you know, if the FTP didn't work, or, the searches, because there was no Google or no Yahoo!. We had to Gopher and Veronica. So the searches were a little bit difficult to operate. You needed to know Boolean search phrasing. So people could help each other, so they, they could ask the neighbour on the next-door chair, how do you do this, how do you do that. So that was, that gave, made it a bit easier for us. Because my staff was called cyberhosts, and they were people who trained, but obviously I didn't have every person one-to-one training; we had one or two cyberhosts for like, 20 people. So I was sort of hoping that people would help each other, and they did, particularly with women, people were very keen to help each other. So it was a very collaborative environment.

[16:20]

And where did you get the idea of Cyberia?

You know, the idea of cyber cafés was sort of floating around for a while, because, the Americans had cafés with bulletin boards connected to each other. So it was called SF NET, San Francisco Net, created maybe a year or two before us, but they were not connected to the Internet. So, I went to have a look at it, and I thought, mm, it's interesting. And at that time, our partners, Dave Rowe and Keith Teare, were just about to launch Easynet ISP, Internet provider, and we were looking how to make it easy for people to understand why they want to be on the Internet. So we knew why we wanted to be on the Internet, but, if you've never seen it, how do you explain to

people? So we thought the café would be the best way to contextualise it, and show them all the wide range of tools, you know, the email, FTP. I don't know why we thought FTP was so exciting, but we did think so. Browser, the ability to download games, the ability to download music. And a lot of that was really only possible in the café, because you had to help people. You know a lot of people were techno-, completely technophobic at that time. So we combined our resources, and I wanted to teach computers, particularly HTML, to, whoever we could teach, but really for women. So it seemed like a good idea to combine the way of showing people the Internet and encouraging them to sign up for the Internet from home, and helping them to become, you know, fully-fledged interneters, but also provide a training centre, and make it non-anorak-y, non-geeky. You know, at that time people who, perception was that if you knew about computers, you were a geek. And, we knew that it wasn't true, but that was the public perception. So we had to make it really light, that's why we had beautiful windows, and, lots of light, and, bright, beautiful pictures. It was very digital. So the whole ambience I was aiming at was really about European café. So the computers were there, but it was almost secondary, that you wanted to go there for nice coffee, fresh croissant. I remember there was a time in London when the only other café was really Bar Italia in Soho. People drank tea. And so, coffee hasn't really happened yet. So we were probably five years before Costa, and many more before Starbucks. So we were really introducing coffee to Londoners, not just computers.

[18:54]

Who chose the name Cyberia?

Do you know, I can't remember. I think, it came because at that time cybernetics were really on top of everybody's mind, because we knew we were building this virtual world. And only after we actually coined the name, there was a book, we realised there was a book called *Cyberia* by Douglas Rushkoff, who we invited to come for the launch in the café. But we named the café before we knew about the book. But we were months apart. So obviously there was something in the air. And I still think it was, partly the success of *Cyberia* was the name, because it just pinned exactly that, you know, the future starts here.

[19:39]

Initially Cyberia was intended to be an only-women venture. Who were Cyberia's co-founders?

Well, in *my* head it was only-women venture. My co-founders didn't think that at all. So we spent many, many evenings arguing about this, and we were like a typical rock band. Everybody had an opinion. But, you know, it was just a business requirement, because when you think about it, you, you have... The audience is everybody, but, women had less reasons to go online, because, there was not that many resources for women. So we had to make these resources, and then introduce them to it. But, both me and Gene were, were digital, in digital publishing. I used Internet by then about, probably eight years, so I was very comfortable about it, and I was very comfortable selling it to women, explaining it to women. So, so it was a combination of my interest and my training; as part of my PhD I taught a lot of people how to use the Internet. But, also, the time that, Mosaic was just arriving as a browser, and it was just suddenly possible. The degree of difficulty has dropped. So no, we didn't really have any external funders initially, because it was, 1994 you know, it was the deepest recession ever, and if we went to the bank they would just laugh at us. So we just pooled our own resources and risked it.

[21:05]

Where did you meet Gene Teare?

I... I met Gene through digital publishing, because she was working in digital publishing with a company called Spy, which still exists. And so, I wanted to learn a bit more about, Photoshop and Macromedia. So it was a natural connection with, doing the technology, but with, with a publishing purpose. Gene was South African, and she ended up in London because, she was very active in anti-apartheid movement. So at some point she had to leg it. Ended up being very active in that movement in London as well. But her core skill was digital publishing. So we sort of, bonded on that.

[21:55]

And, the other two co-founders were David Rowe and Keith Teare.

Yes. So, David was my partner, and we have had a business before, in Poland, computers and software for banking. So we already did a little bit before. And Keith was technical, specialising in networking environment. But, you know, at that time nobody really knew that much technology. So Keith Teare was our technical partner. He then became technical director of Easynet. And really we were all learning as we went along, but he was the most advanced, because his background was in software development. My husband had MSc in computer science, but, you know, Internet was very new, so we had to just pull resources, and somehow we managed to contribute, everybody contributed a little bit of our skills to the team. But it was very much a teamwork.

[22:54]

And, Easynet was the Internet service provider of Cyberia.

Easynet was Cyberia's Internet provider, and it was the second Internet provider in London. The first one launched a few months before, but it was very techie. So Easynet was the first one that offered the Internet to people who were not necessarily networking engineers. So we had this beautiful disk with very colourful doodles on it to make it a little bit more welcoming. And the actual process of installing was much simpler than with the previous provider. But it was still not super-simple, so that's why we called it Easier Net, because the Easy wasn't there yet. And it did very well. So Easynet has, grew very quickly, and at some point had about half a million subscribers. So today, Sky infrastructure is what, is Easynet infrastructure. So, when you use Sky email, that's Easynet email.

And Easynet at the time was in the same building?

Yes, Easynet started more or less the same time like Cyberia, and we initially had only one floor, and on that floor was the coffee, computers, and a tiny room in the back where Keith was basically changing modems, like the old telephonist in the Thirties, because it was all going wrong all the time. Because initially it was just a bunch of modems, like, like home modems glued together, until we realised after a few days that actually this was going to be very successful, and then they rushed up

and got a little bit better modem. [laughs] But it was on the same floor, and then we started taking over the whole building. So we took over the ground floor. Because we suddenly started an influx of a lot of gamers, and the gamers were saying that, they loved the connection, but can we have a bit better computers, and can we stay there for the night? So, well I don't know about the night, but we certainly can, can gear it up better to gamers. So we called it Subcyberia, renovated the basement, which was a beautiful wine basement, old wine storage space with arches, and really beautiful architecture. So we invited somebody to, to do a fresco with red lips, and that's the fresco which was still on the picture. So that was our logo. And then upstairs we had Easynet, they moved to the first floor after a few months, because by then they had a few thousand subscribers from home. And then, on the second floor we had, like, a co-working room, because we kind of accidentally invented co-working. Because we were the only ones in town with a good Internet connection. So if you wanted to work, and, didn't want to have your slow home modem, then, you know, we were the only one with the beginning of the broadband. So we didn't really think about it, but that was probably the beginning of co-working. And then in a further floor we had Cyberia Records. A chap called Nick Ryan, who was a composer, and he invented with Keith Teare the concept of embedding digital rights in the code. So we were ahead of Spotify by, [laughs] quite a long time. And then we had Cyberia Payments. So a French engineer, Thiebaud, who invented digital cheques. The only problem, it was way too early, but, you know, he basically, created the technology, secure digital payment technology that then we went off to use later. So there was lots of little start-ups there. And on the top floor we had *Cyberia* magazine, which was used to basically present that new culture. Because it wasn't just technology. That technology was reflected in the culture. So everybody started using collage and filters and layers on Adobe, Photoshop and Macromedia. Director came, Dreamweaver came out in, beginning of '96 I think. So suddenly everybody started layering everything, and doing these sort of, surrealist collages. So we wanted to show that through the magazine. And the magazine was very successful. I think it had about 24 issues. And I was very proud of it, because, you know, paper is paper, [laughs] despite the fact that everybody was digital. We were very keen on it. And we also had a design department, because we wanted to have some merchandise. Everybody wanted to buy something from us, and we didn't have anything. So, eventually one guy came to the café, and was slightly sweaty and breathing heavily,

and he said, 'Oh I want to design merchandise for you.' OK, so who are you? 'I'm Sebastian Conran.' So our first merchandise was designed by Sebastian Conran. He came up with fantastic ideas of luminescent yellow disk, like, neon-y, little floppy disk. So people were buying floppies just to buy them, because they were so pretty, not to put anything on them. And, courier bags, because Sebastian was a biker, and that was very rare in London, people just did not bike. But he was a very early biker. So he designed this beautiful courier bag with Cyberia, lime Cyberia neon-y across it. And they are just such collectors' items. Somebody bought one recently for £1,000.
[laughs]

[28:05]

Where did you hire staff, what was the background?

My first team of people was, mm, people who helped us to build it. So we had, my best friend from my PhD, Sara Bralinger was the first manager. Neither of us knew anything about coffee or, or you know, operating a café, but we learnt, [laughs] very quickly. So, they were basically my friends from PhD, from university. But they were not computer scientists; they were just people who could use the Internet, and understood the, FTP, understood HTML edits. So Sara managed it for a while. And then I found a few people from my psychology department, students who were part-time. Again, they were probably the worst baristas, but, we had a very good coffee machine, because, at the beginning nothing worked, and then eventually hopped in a taxi and ran around London to find a second-hand proper Lavazza machine. So the Bar Italia people advised us how to do that. And then, our, our cappuccino was amazing. And honestly, there was Bar Italia and Cyberia; you could not get a cappuccino in London at that time, it was just amazing. So, we had to teach people who knew about, a little bit about Internet, how to make coffee. But we also had people who, you would call it today barista; before, you know, that name didn't exist. And then, teach them about the Internet. So it was very cross-populating. And my probably best cyberhost, we called them cyberhosts, was Eileen Napp, who was a psychology student, and she was a raver as well, into music. So she introduced us to the club scene in London. So that was, you know, that's a separate whole story.

[29:48]

So what about Subcyberia and the post-rave Sunday morning breakfast club?

Well Subcyberia was, was the early gamers' environment, and they usually game for the night. So, it was sort of, slightly, natural that we had to have breakfast for them, because when you emerge from, you know, long marathons, you are hungry. But also, at the same time we noticed that because there were so many raving, rave clubs around that part of London, north London, particularly King's Cross, Warren Street, people were coming after the raves and checking email, checking what happened, wanting to send something about their previous night events. And so we started running this breakfast club for ravers, particularly on Sunday morning. But we, we basically were a breakfast place for all sorts of people that were on the machines for the night.

But were you open the whole night?

We, we had demand for the whole night, and quite often we were open, the Subcyberia was open 24x7, because that's what the gamers did. Because particularly the, a lot of gamers were from Korea, South Korea, so the time differences, and the beginning of the real-time gaming was happening. So, we tried to open, but Cyberia no, we didn't manage that. So I think the, the latest we stayed open was about midnight. We met this very interesting group of people led by Martin Kavanagh, who pretty much invented festivals. So he started putting music and stalls in the middle of the meadow somewhere, and kind of created the concept of festivals. And he was leading and programming music and clubs in, for Megatripolis. Which was not far from us, it was Charing Cross, under the Charing Cross station. And they wanted to have a connection for people to be able to send emails, or send, take pictures, digital pictures. It was just the beginning of digital cameras. And, more importantly, they were doing connections to, Timothy Leary, Allen Ginsberg, who we knew, because we lived under him in New York. So we helped them out with their connections over the ISDN.

[32:07]

You lived in New York?

Yes. When we were fundraising for Cyberia in US, we found this amazing apartment, it was basically like an art studio, in very very deep Alphabet City. So, you know, you only go there if you really want adventure. And, Allen Ginsberg lived above us. So we shared the same lift. And, you know, he was a, he was in his seventies but he was a serious party animal even then. [laughs] So we organised the connections from the clubs for him, so they could dial up for something that was called CUCME. So that was a piece of technology which was sort of equivalent to today's Skype, except you didn't have a full screen but like a quarter of a screen. Well not even, like, one-eighth of a screen. But you could see a face, you could see the people. So Megatripolis, Heaven, and many other clubs, the Berkeley's, they were organising connections to American artists, to American literary leaders. So we were supporting that. Because the Internet connection then got a bit faster, we had ISDN lines, so if you could connect ISDN on both ends, then, you could send music, you could do a little bit more. Not just text. And that's how the clubs pushed it. So we didn't really push music, we were more interested in recording and digital rights for the artists, how to embed rights in the music. But the artists were interested in doing real-time core concerts. So, like, some artists would play Megatripolis, and other artists would be playing somewhere in New York, and they would mix the streams. Yeah, it was pretty, pretty pioneering stuff.

[33:55]

So, there was Cyberia, Subcyberia, and also Transcyberia.

Yes. So the Transcyberia was, as I mentioned, it was like a co-working space, because we had the fastest broadband in town. For a very long time, I think for five years, nobody really caught us. So when people were doing creative work, or game development, or wanted to share large files, they ended up working with us. But a lot of people were gamers. So, the game development community just started going in London, and they needed to share large files with other people. Also filmmakers, or special effects people, they started realising that actually they don't have to sit in a studio in LA; they can be doing that from London. So, so it was a combination of creative people who needed large files, but also, who just liked sharing working space with other like-minded people.

[34:53]

In 1994, when you opened Cyberia, women were less than three per cent of Internet users. At some point you decided to organise HTML courses and also only-women tech courses.

Yeah, I had this idea about women-only courses from my PhD, because as part of my PhD I was teaching nurses and developing courses for nurses. We had just got computers in the NHS. And they really didn't like that. They were technophobic, they didn't understand what was inside a computer. It was really hard. So I developed this U shape concept there, and I realised that actually women are absolutely capable of learning anything, but you have to develop motivation. You have to show them something they actually want to be doing, because learning programming for the sake of programming wasn't going to fly. So, then we started working on Louvre sites and setting up little templates, and just showing people something that they, was relevant for them in everyday life. So, a lot of women like visuals, like fashion, like, art. Fashion wasn't online then, that was another five years, but art was. So, I had this concept of HTML course which would be built on first of all going to Louvre pages and then showing people, you know, inspect element of new source. And then making little changes on, you know, pretending you're making changes on their site. And it was quite exciting, because you can see that, female brain, when the output is visual, learn much quicker. We're just kind of, wired slightly differently. So, we... I ran both courses. I designed, I think the first courses for HTML for the public, well for, you know, mixed genders, but the women courses were slightly different. They were more focused on achieving a visual outcome. So you could design your little gallery for your own paintings, or your own work, or you could do a gallery for your fashion, if you happen to be that minded. Older women often wanted to create pages for the children. So it was all, you know, how, how do I put my pictures online, and how do I keep it there, and how do I update it? So it was, it was relatively straightforward. But it was very different, because, for the boys, they just enjoyed the tool. So whatever tool, editing tool you gave them, they would just enjoy the tool. Women didn't just enjoy the tool; there had to be an outcome. So they're slightly, they were slightly different strategies. I still think that we're making fundamentally an error, how we train women in technology, because, it is just not excited, not exciting for them to learn coding for the coding sake. You know, there

has got to be a reason, the motivation; our differences in genders are, somewhat under-explored.

[37:48]

The people who attend your course find a job after?

Yeah, the HTML knowledge was, like today, knowledge of artificial intelligence, or machine learning. You know, you, if you could produce HTML website, if you could set up a domain, if you could show basic knowledge of the components, you would be immensely employable. And I always thought that, you know, women could be, at the early days, because it was about digital publishing, and I knew from Gene Teare friends that, a lot of digital publishing was done by women. So we thought, you know, it was just giving them an angle for getting a little bit of a leg-up in the work, job market. Because it was very tough. 1994, there were no jobs. But there were jobs for techie people, as always. So if you could show a little bit of skill and make a website, you were in.

[38:41]

Cyberia and musicians. Kylie Minogue, Bono, David Bowie. What kind of collaboration did you have with them?

Well Cyberia was very lucky. Next door to us there was Cyberia... It was a recording studio called Whitfield Recording Studio, which was very famous, except we didn't know about it, because we were not from that background. So we only discovered it after we opened. And, you know, very quickly people started sort of, waltzing in and asking about the Internet. And one of the early people was Kylie Minogue, who was recording an album then, and popped in to Cyberia, and, wanted to learn email. And even wanted to learn how to set up a MAC. So she got herself a little MAC, and started learning how to put her music online, and very quickly... She said actually in the interview for our *Cyberia* magazine, which I still have, she said, 'I am a technophobe, but I'm working on it.' [laughs] She was absolutely delightful. And, you know, learnt very quickly. Once, once she got over her technophobia, she learnt very quickly. And similarly, U2 came, and Bono, because they were intrigued if they can send their music to other people. But, I think they were also worried, if the

music will be stolen. So I think it was both creative but also slightly defensive. The most interesting I think was David Bowie, because he was extremely involved in the early technology. He had his own David Bowie net, called BowieNet, and, we had quite a few connections with him. And so we were running interviews, so the journalists would be in Cyberia, David would be in his studio in New York, and we would be running, you know, interview sessions when he was releasing a record, or... So he was talking on... So, so BowieNet was really created by him, both as an Internet provider, similar to Easynet, but for people who were following his career, but more so, you know, he was talking about... He understood that this would be about sampling. And he understood that, he needed to put the music online for people to be able to use it and reuse it. He was not that worried about the money side of it you know, he was basically looking at, how can he provide music for people to play with? And later on he did an interview, I think with Jeremy Paxman, on *Newsnight*, where he said, 'You know, I understand it will be a very different story. It will not be from an artist to the audience; it will be a joint adventure.' But you know, he was very confident in his ability, and he didn't see it as a threat. I think a lot of musicians seen it as a threat to their ability to monetise music. But, early Internet was definitely driven by musicians.

[41:38]

How did you manage to be backed up by Maurice Saatchi and Mick Jagger?

Well as I said, initial Cyberia investment was our own money, friends and family.

Can you say how much you invested in it?

You know, I don't even remember, but not much. It was, it was just enough to cover the rent for the first two months. Because we were thinking, you know, if it doesn't work, it doesn't matter. If it works, we will find money. And as it happened, that was the case. But I think it was, really just the cost of computers, which we never paid for anyway, and cost of rent for the first couple of months. And the place was tiny you know. When you think about, the legend is like, it was huge. Later the cafés were bigger and bigger. But that first café wasn't big. But we, nevertheless when we realised that it was going to be successful, it was all slightly panicky about where we

were going to find more money. And we found a few investors, but, one day we got an offer from a musician. So, as I mentioned, musicians were more and more interested in Internet, and we were contacted by a managing investor for Mick Jagger. And he was working on an investment for Maurice Saatchi, who was running Saatchi advertising. So they knew that that was in the space. I don't think they were very impressed with us, and with the small café on the corner, but they knew we had enough technology there to carry it further. So, we managed to raise money from them.

[43:08]

And then used that to open Cyberia in Centre Pompidou in Paris, which was the first UK company ever to be invited to Centre Pompidou. And that was a different adventure altogether, because, it was then a time of the strikes. So I remember just after we opened we had these people with accordions, berets, and quite often with blood dripping from them, and bruises, coming back from some adventures on the strikes in Paris. And only then I learnt that that was a normal circumstance in Paris, because somebody was always on strike. And because we had the email, they were running into the café to send emails to, other people, to, you know, let them know what was happening. So Cyberia Paris was much more political in a way, but also much more sophisticated, because we actually managed to get the money, so we spent it on a top architect, Bernhard Blauel, who was very minimalistic but also he understood the kind of slightly dystopian cybernautic ambiance. And, Cyberia in Centre Pompidou was quite dark. Because we didn't have to worry about the nerds any more, because that had stopped being a nerdy environment, it was just, a very beautiful, very creative environment. And Bernhard designed this beautiful cybercafe, which attracted people like, Bill McAlister, who worked for George Soros. So they used to pop in for chats before seeing the exhibitions. And like, I basically met everybody in Paris at that time, because, as in Cyberia in London, we were first in Paris, by a very long time, so if you wanted to see what the Internet was about, you had to come to my Centre Pompidou Cyberia. [laughs]

[45:56]

We also then released the money for, the transfer for Tokyo. So we went to, to Tokyo with, a very interesting company. It was a franchise, and they were thinking big. They had three floors of Cyberia in the Roppongi area, which was very international, and we worked with a franchise company led by a very interesting chef who was born

in Japan but brought up in Paris, so he was bilingual. And he completely understood that virtual environment was going to be, a) global; two, it was something that we had to build, and, also looked after by localising to each culture. So, Cyberias in Asia were more for collective use, so people would come in groups. So we had to design the tables that, a number of chairs could be around a computer, and Bernhard came up with this concept of cables and computers. Because remember they were huge desktops, they were not like little laptops and things, they were massive desktops. So they were hanging from the ceilings, and you could turn them around, so people can see screens even with a group. And we then used the same concept in Bangkok, and in Manila. Because, in Europe people would come by themselves, or with a friend, but they would have two different computers, while in Asia, for quite a long time they would come as a group and use one computer. So then, I learnt how different the cultures were. But all those Cyberias are very beautiful, mainly Bernhard designed, but, you know, today when people think that cybercafes are, you know, slightly dark and small places in Lewisham, I tell you, the first cybercafes were amazing. They were like five-star Michelin restaurants. And actually they had great food as well. Because we had to come up with a concept of finger food for, for machines, that we don't end up with soup over the keyboard, because keyboards were expensive to replace. So that's why we ended up with sushi. So, yes, so we were one of the very early sushi places in London. And definitely the first one where sushi didn't cost a fortune. So I managed to find this incredibly talented chef from Rotterdam, because we also opened in Rotterdam with Virgin, with Richard Branson, and I found this chef who was just, you know, a genius sushi chef. And, after a year or so he said, 'You know, I'm bored with food. Can I do some Internet design?' I said, 'OK, well we will, we will teach you.' And then he went on to be, still is, an extremely well-known graphic designer. He designed websites for Damien Hirst, for many very well-known artists, and now he has got his own practice. Azeem is his name. And, yes, he was a chef from Rotterdam.

[47:51]

What was your favourite Cyberia café?

I think my favourite actually was, the one in Centre Pompidou, because it was such an interesting time, and also, the bringing of the Internet to France, it was a little bit like

sending snow to Eskimo. Because remember, they had Minitel. So we thought, mm, how will they take to the Internet when they have been connected, like a lot of people had Minitel at home, for years before, probably, at least five years before. So, it was a bit uncertain how that goes. But you know, Minitel was controlled, Minitel was very, it wasn't so much censored, but it was controlled by a central private entity. So when we brought Internet, and people realised that everything was completely open and you could put your own pages, and nobody would tell you not to, there was no censorship, which was, you know, a bit strange, but there wasn't, they got very excited. Because the French are incredibly creative. So we had a whole stream of amazing artists, who started creating pages very quickly. And France actually very quickly started developing animations. So they had, they... We could use animations on the pages, but it wasn't really a big thing, while French artists pushed into moving image. We couldn't have videos because it was too early, but they pushed on animations. And then France became very strong centre of special effects, and games also. So, I think, that was probably the most creative. London was pretty creative, but it was more music, while in France it was more visual. And also the politics, you know, the fact that we were in the middle of Paris, and every strike, we were right in the middle of it. [laughs] It was pretty fascinating.

[49:38]

How many Cyberia cafés did you open?

You know, I think, all in all, we opened, somewhere between seventeen and 20. We didn't necessarily own them, because it was a franchise model. So we had... But, London, UK, Edinburgh, Manchester, were quite big. So Manchester was, we owned it directly. And Edinburgh also franchise. At some point we had some franchises that we didn't really oversee that tight. But it was a rapid, was rapid development. By two thousand and - '98, we had one in probably every city.

[50:12]

And what was the end of the Cyberia project?

You know, I left a bit earlier, because, I left to, I joined Topshop. I was approached to head the joint venture to provide Topshop internet. So, something called Zoom,

which we created from scratch really. And, the challenge for me was, I knew that women were still not using technology. There was still, minority of users were women. And I thought, maybe fashion. So I had to go back to my original idea of fashion online. And at that time, Topshop was one of the leading brands for young people, so I thought, if we can create online shop for Topshop, then women will surely come. So, I got interested in that, and we started work about, late 1998. Cyberia still continued under the management team there. But you know, slowly, slowly people started getting connections from laptops from home, so we thought, we probably need to move on. And we found a partner in a Korean company called Be the Reds. And Korean diaspora was looking for somewhere to provide support for the gamers. Because basically, if you are Korean, you are a gamer. And then they went on to create thousands of game cafés in Korea and in northern China. So I think it was about 3,000. So that was quite, quite a good handover, because they were in the right space, and they could run with the project. My partners then concentrated on Easynet, and then Keith and Gene moved to US, so they, in Palo Alto. Gene is one of the key development leads in Crunch, Crunchbase. so, TechCrunch has spun off a start-up listing, and she has developed that.

[52:13]

So Zoom at the same time was e-commerce but also Internet service provider. Can you explain how Zoom provided free Internet to customers?

Well Zoom was going to be easier than Easynet. So as I explained, Easynet wasn't exactly easy; it was *easier*. So we thought... I just kept pushing with making the access acceptable even for technophobes. So people can, can get access from home with minimum amount of clicks, and minimum amount of installation. So we designed this new ISP called Zoom, and Zoom fashion portal, and we had these beautiful disks designed by a very expensive agency that made it look very vibrant and easy. So it was basically continuing the easy theme. But obviously, Topshop didn't want to invest in the infrastructure. So, we went to Easynet, and managed to develop a white-label version. So underneath Zoom was Easynet, but in a slightly easier installation.

[53:17]

And while at Topshop, you developed the first mobile e-commerce solution, WAP-based. Can you tell us more?

Well, you know, smartphones started coming up in 2005, but there was a previous technology WAP, W A P, that was like a pre-smartphone. And I was quite convinced early on that mobile phones needed to have data reception, because, we were all commuting, and, you know, you sit on the commute, nothing happens for an hour each way, so we thought that mobile phones will be useful if you can do a bit of browsing, or if you want to pay your bills online. You know, at that time, councils started providing certain facilities online. So there were things you could do. But, the early platforms, people were not quite sure which way we'll go. So, WAP was the first wireless platform, but it wasn't successful. It was superseded by the next generation. But you know, we developed it, we had a WAP version for Topshop online, and it worked. So, it wasn't the best of experiences, because it was still very much text-based, but, you could shop from, maybe not from the Underground but you could shop from the park for Topshop. And, Alan Sugar, who argued with me then that will use smartphones, because either you are at home with the lap-, with the desktop, or you are in the office with desktop, and nobody wants any data between. And I thought that cannot be true. People always wanted data. So, you know, it was early start, but it taught us a lot. And then, when we developed Topshop for smartphones, we had a lot of solutions in place, so we were quite early on, it was really, really very exciting.

[55:09]

What led you to found Cybersalon.org?

Oh Cybersalon was a response to us sort of, seeing what started to go wrong. So generally the Internet was a very joyful place, early Internet was, was party town really, you know, music, artists, creativity, clubs, Megatripolis. But there was also a sign of trouble to come. Because, Louis Montulli invented cookies, in about 1993, and, you know, he didn't mean harm, he invented cookies to keep the state. So it allowed shopping, it allowed the, the basket to be kept, so the Internet could remember that you started the shopping and what was in your basket, amongst other things. But that was a good use of cookies. And obviously cookies were also used for

tracking how you browse online, how to make it easier. But, bad people started coming, and Internet advertisers started coming, and then, they started putting third party cookies on every website, and gathering the data, personal data, in a completely uncontrolled manner. So suddenly there was this flood of data, personal, very personal data, because, you know, people surf for all sorts of things, health, for, for finding out about health, finding out about things which are very private. And we started seeing this data being sucked into the third party advertisers without any legal framework around it. Started objecting to it. But somehow the Internet engineering standards committee accepted it. First they didn't accept it, but then accepted it. And then it became standard. So we were quite concerned, where will that land? So in 1997 we got together kind of, a combination of people from the hacking background, from academics who were interested in digital privacy, although, you know, that was very early days, even the, I think even the word digital, the concept digital privacy was actually coined at Cybersalon. And we started working with people who could lobby against it, and used artists to show the harm if your personal data gets collected by wrong people and then leaked out by wrong people. And we continued that. But at some point, it morphed into more of a general protest against large companies, because the large companies took hold of the Internet very quickly. So the beginning, we were all, a bunch of artists and very small companies, but by about 2005 you had YouTube, you had the beginning of Facebook, you had bigger, bigger companies. So, we kind of seen it early, and we started developing this Digital Bill of Rights to protect people from the risks. But you know, for many years people thought that we were just crazy, that, why would you worry about digital privacy? I've got nothing to hide. But what people didn't understand, it's not so much you hide, but if people know that you care, let's say, about your hip replacement, or your thyroid, then, political parties start showing you apps which are personalised one to one, and say, you know, if you vote for UKIP, we will give you free hip replacement. If you vote for somebody else, we will give you free prescriptions forever. And if they, if the advertisers know your weak points, they can persuade you to things using one-to-one marketing, that you don't even know you are being persuaded. So that's what we objected to.

[58:46]

And you ran monthly events at the ICA, and at the Dana Centre, and the Science Museum.

Well, Cyberia was, had the concept of portable Cyberia. So we had obviously our cafés, but we also were able to pack our networking equipment, and run somewhere, you know, to a club, or to museum. Very early on we started collaborating with the Science Museum, and Victoria and Albert Museum as well. So I think we came up with the concept of Late at V&A. I can't remember the year, but we can look it up, but I am sure we did that, connecting V&A with artists based in a different museum, and stayed late. Because it was an American museum. So that was the beginning of the concept of late museum nights. But, we also worked with the Science Museum, because Dana Centre is a centre which exists for education of adults in technical and science issues. So we, for a long time we ran for them events about new technology, so introducing the latest gaming. So for example, we invited Gerald Lanyear, they invited us to create Cybersonica. So that was kind of like, like a, well series of festivals about music and modern technologies, and particularly the art of sound, but the art of connected sound. So we would have one artist playing something in one city, one Cyberia, connecting to another artist playing in Dana Centre, and then creating something together. So kind of like, virtual jamming, remote jamming. It was very hard, because the broadband, even in the Science Museum, wasn't really good enough. And one of our collaborators, Lewis Sykes, was in this band that basically was all about streaming, cross-streaming music from different musicians around the world. And they liked that. So then we started showing, showing games, showing virtual, mm, [Polish] for virtual reality. And that became a social event. So before, they would just have, you know, very dry lectures, and people sitting in the lectures taking notes, while after we showed up, it became all, like a kind of, learn through play.

And this was in the early 2000s?

Yes. Yes, we ran a festival for them called NODE.London, which was probably the first wireless festival with all sorts of artists contributing wireless pieces. So it was before smartphones. I think we parked a black taxi in front of Dana Centre, and we had people sending messages to the taxi, and then those messages were relayed into

posters in different cities. That was pretty mad. And it was just to show what connectivity for Wi-Fi, what mobile connectivity can do. Because remember, at the time, very few people had mobile phones, and there were very few Wi-Fi spots in town. So one of our Cybersalon people used to go with chalk from park to park, or area to area, making chalk circles on the ground to show people where good Wi-Fi can be found. [laughs]

[1:02:16]

At some point you started also a collaboration with Middlesex University, with the Department of Media, Film and Performance?

Middlesex University historically has been involved in cybernetic activities, and they approached us probably about 2013 to create, to help them to create a series of events for the students and postgraduates, but also to help them to create new degrees that would be reflecting what modern digital media should be about. And we managed to create BA Digital Media, which launched about, three years ago. It took a very long time, because obviously it takes two years to approve a degree. But through that we also learnt to collaborate with the gaming department, because Middlesex has got absolutely cutting edge game department. And, I realised one thing, that maybe there is not enough work for the games graduates, but games graduates are really well prepared for a number of different digital careers. So, actually we concluded that a probably games degree is the best degree for the digital career. [laughs] But, Middlesex also had a cybernetics history, and Professor Martin Smith, who set up a cybernetics association and is still head of it, created these yearly conferences, so we were supporting the link between Cybernetic Serendipity, which was the 1969 exhibition, the first computer graphic exhibition...

At the ICA.

At the ICA. And then we stayed actually with ICA and Middlesex together, creating a series of events in ICA, introducing modern computing for the visual artists. Because they had Sun Microsystems, Sun computers. They sponsored the whole ICA for a few years. And we managed to play with very top end machines that, you know, were only available for special effects, graphic designers, and yet they gave us I think ten of

these machines. So the students from Middlesex got to experience that. And it was a very creative, a very cross-pollinating environment, because a lot of very techie people, because Sun has attracted top end technical engineers, and a lot of top end graphic designers. So, you know, obviously from that, London game community benefited. It was like a spur of development, at a relatively low cost, because you can apply to be a resident there, artist-in-residence, and get access to top level combination of computer and bandwidth.

[1:05:13]

You are currently consulting for The Retail Practice, a multichannel retail and technology consultancy in UK and Europe. Would you like to tell us a little bit about it?

Yes. I started getting interested in how digital technology can help large retail. Because obviously, after Topshop was, developed very successful online... It was the first shop and also the biggest shop for quite a long time. So we managed to transform the back end of large companies like Arcadia to suit the Internet. It was extremely difficult. But I was very lucky, we worked with, in Topshop we worked with ICL, and we were able to use the first e-commerce platform and the first secure payment, created by ICL, for fashion. So we had the first fashion shop, probably five years ahead of anybody else, it was many years before Tesco showed up. So I knew that it's possible to restructure a large company to fit the Internet. And I started looking for clients who would want to move from physical shops to online, because I could see how quickly the online fashion was growing, and I could also see that that probably spells early death sentence for physical shops. So I felt a little bit concerned. I didn't realise how quickly that would happen, but I could see it would happen. Because, women are busy, and they like shopping on the go. They like shopping on the Internet during their lunchtime, and then with mobile they started shopping online during commute time. So I thought, you know, we're not going to spend more money; we're just going to spend our money differently. So there won't be that much demand for the stores on the high street; there will be demand for those brands but on the mobile. So we started consulting, and actually really signing, letting warning signs to those big companies, the time to move on, because you are going to be out of business. Many of them, they didn't want to know; many of them thought, no, we

have 3,000 shops, we'll be fine. But some started moving. And that's really my role today, to help the retailers to migrate to digital faster.

[1:07:29]

And you are also a member of the High Street Review Team, led by Bill Grimsey?

Yes, the Bill Grimsey review came from the fact that the physical shops started closing rather faster than anybody expected. So we did the first report for the Government 2013, to highlight and to show the expected rate of closure, and work with the Government to mitigate the change. But you know, they were too busy with something else, decided to ignore it. So then we wrote another one a few years later when it was really on the verge of, you know, high street was really beginning to die. So we highlighted a number of solutions that were necessary to, to minimise the damage. Again, we didn't get much result. And as you can see today, high street is on its last legs, and I think within the next three years about 80 per cent of stores will close. So that was my attempt to let people know a little bit early what's coming. But, you know, it takes two to tango, so, might.

[1:08:37]

Have you been working on something else recently?

Well I have got interested in the ability of the Internet to provide solution for small retailers and young fashion brands. Because I started finally seeing women getting initiative, taking initiative, and the area which I'm very interested in is the area of fashion, young fashion brands led by women. So we work with a platform called Shopify, which is a quite low cost e-commerce platform. But you still need to connect other things on the back of it. So I found a few women founders that I liked, and approached them, and I am working now with a couple, particularly helping with technology, but also fundraising. So I invested in a number of companies, led probably the most successful fundraiser on Crowdcube. We went for 500,000 and ended up with one and a half million. So it can be done. But I am just fascinated about how young women can drive and set up their own businesses, with a relatively low cost, with a little bit of technical knowledge. So you know, all my journey about, how to get women to technology, is actually landing after 20 years in the right space,

because, you know, today, retail, direct retail to consumer is relatively inexpensive. If you want to create a brand, if you have some nice ideas, if you want to create, let's say, organic swimwear, or, you know, sustainable cosmetics, you can, today you can. So that's my big passion, and that's the area which I think I will stick with for the next few years.

[1:10:24]

What are the proudest achievements of your career?

Well certainly Cyberia is up there, because, I think opening Cyberia to non-technical community was very exciting, and the fact that we managed to invite people to the Internet on very positive and gender neutral terms. So it took a while, but, there were other places in, in London, really fantastic places, like Backspace, Hackspace, but, they would not have been the right places for women to see the Internet for the first time. They became more friendly later. So I'm very glad that a lot of women had good experience in Cyberia, and, you know, even today, many of people who came to Cyberia are now, you know, heads of digital for huge companies, or ministers for digital in the Government. So I think we contributed starting the digital journey in the right way. E-commerce directors in all major fashion brands at some point came to work with me. The team in Topshop has populated pretty much everybody, all the big fashion brands in London, and in New York, American brands sourced people from UK, because we were about five years ahead. So if you look at headquarters in New York, many of the digital directors would, are British, because we had the advantage of being able to launch e-commerce in 1999, before Americans even realised that you could buy things online. They always had books and non-visual things, but they took the time with fashion.

[1:12:04]

What would you do differently if you had your time again and why?

You know, I don't think I have any regrets. We had fantastic time. We, we might have moved Cyberia to Eastern Europe earlier, that was always my dream, to bring Cyberia back to Poland, and to Slovakia or Czech-. But you know, the problem was that it was too early, and also, oddly enough, Central Europeans, because they didn't

have good, cheap computers, they made their own. So actually, a lot of people ended up with quite a lot of access, because they just made their own gear and they were able to, to connect. But I always wanted to do it, so, in the next life. [laughs]

[1:12:48]

Have you been involved in any pro bono activities during your career?

Well I am the digital trustee on a number of non-profit organisations, so Help for Heroes is one of them, it's a military charity, focused on providing the care for injured veterans, and also looking at supporting them with technological skills and digital skills to prepare them for the next life. I also help with Digital Liberties, which is involved in designing games for educational purposes. So we've done a few games with Nesta, teaching people how to collaborate for gaming, and how to solve conflicts like, for example, planning. You know, nobody ever wants to agree on planning for the towns, so we have a game which helps people to practise how to collaborate and negotiate constructively for planning. So yeah, I get involved with a lot of things where, where, either gaming or simulations or, digital skill, can move things forward.

[1:13:55]

How do you think IT will impact society in the next ten years?

I hope it will be positive. So, my, probably biggest positive adventure over the last few years was Wikipedia. I got involved about 2013, and realised that they have a very tiny minority of women editors. So we started working on addressing that, and I have my own training group for women editors. And the fact that, you know, knowledge is now really available at your fingertips to anybody who has got access is really, the positive aspect of Wikipedia. And I think that will continue. So, I think now we can genuinely educate everybody, if we choose to, who has access, and equalising access to information across many countries in the globe is still something that's ahead of us. But I think it's happening. So I think it's education, but also, slight risk that it all might go wrong, because the digital privacy is still not addressed, the Digital Bill of Rights still has not happened. And in fact, what needs to happen is... The Internet providers are now concentrated in very few hands, hosting cloud is concentrated in very few hands, which makes Internet weak, not resilient. It was

designed to be resilient, and decentralised, and now it's not resilient, because, the companies that host the Internet, like Microsoft, Google, Amazon, they're basically a single point of failures, and they can be taken out by a small group of hackers without that much effort. So we need to fight that.

[1:15:46]

I think another of my fights is also the environmental fight, because data centres are very polluting. Data centres generally run on coal. So dirty energy powers the Internet. Nobody really knows it, because we don't see it, but, trust me, it's one of the biggest downsides of the Internet. And datacentres require enormous amount of power. So we are working with Nordic countries to create data centres based, powered by water. So my husband has created this organisation called Hydro66, which is based in northern Sweden, where 10,000 computers emit the same CO₂ like one computer in Germany in data centre. So you have enormous improvement there. And is part now of other suppliers like Google, Microsoft have moved there, and they created this Nordic cloud. So I think we, we can spend the next few years fixing it and moving the Internet provision, the data centres, from coal-driven to alternative energies.

[1:16:59]

What advice would you give to someone willing to pursue a career?

I think if you started in IT or digital today, you would really want to work on environment, doing it in an environmentally friendly way. So I think, a combination of computer science and environmental studies are probably best. Because when you look at how we educate our engineers, it's a very narrow education. So they don't really have ethics, philosophy, but they don't have environment education either. So I think we need to bring ethical, environmental awareness, and technology together. So, the biggest challenge is, you know, how do we educate our best people? So I think, if anybody starts today, to really be useful in the sensible way, you have to do more than just count. You have to look around, you know, what damage we have created, what opportunities there are to clean it, and look wider, and bring that to the clients and make them aware of what can be possible.

[1:18:03]

Have you got any special advice to women?

I think learning by doing. So, study things that are hands-on, and practise, because technology is all about practise. The more you do, the better you get. And, it's not something you can learn in theory; it's, you know, it's like knitting, somebody can be telling you about it, but until you actually knit, it's not going to happen. So I think, try to get involved in hackathons, in fab labs, in, interactive fashion, which is always a great place to start, and a little bit of maybe robotics for home or for fashion. So you know, do... Following things that are interesting to you, but, exploring as much technology as possible, because in the future there probably won't be that many jobs left, but there will always be jobs in technology.

Thank you Eva, it's been a real pleasure talking to you.

Thank you very much. Good luck with the transcript. [both laugh]

[End of Interview]