



Oral History of Daniel Hannaby

Interviewed by:
Julien Mailland and Marc Weber

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Weber: I'm Marc Weber of the Computer History Museum and we're here with Daniel Hannaby who's a major pioneer of Minitel services and software and has gone onto a career at Orange Research in San Francisco. Doing the interview, the main person will be Julien Mailland, and Bernard Peuto is also here to add questions. So thank you very much, Daniel, for doing this.

Hannaby: Thank you. Thank you for the invitation. I'm glad to be here at the Computer History Museum to be able to talk of this fantastic period in time.

Weber: And it's March 20th, 2015. So Julien, do you want to start with a question?

Mailland: Yeah. Why don't I start with the big picture? You're here because you're a pioneer of online services and platform called Minitel. One of those flagship services was called 3615 SM. Let's pretend this is the mid '80s, I'm an American, I've just landed in Paris, I know nothing about Minitel, but I see these intriguing billboards everywhere, like 3615 SM. Can you give me the elevator pitch? What is it, why should I go on it, how do I get on it?

Hannaby: Yes.

Mailland: And what am I going to find?

Hannaby: We put many ads and one of the main ads we had at the time was in the subway, so we put many ads in the subway paths and the SM was declined in many forms. So for example we put *super messagerie* (for "super messenger"), *serveur medical* of course, and many, many things, but people first went to the service because we started with a small network of doctors, of MDs, that used it to communicate together. And by word of mouth they gave this name to their friends and slowly it came to a huge mass of people that were willing to come on the server, to just be able to chat together. It was like Facebook today, in fact, because it was *a mur de messageries* as we called it, and there was 'salons', so people were able to connect in these small places and chat, so they were taking a Persona because they were able to use a nickname to connect. So they were just chatting together and trying to make friends. And so there was nothing similar at the time. There was nothing similar and people were discovering a way to connect through an electronic means. And so at that point they just-- we were able to see that these people were trying to experiment many ways of chatting, so a lot of people were simply genuine but a lot of them were taking a mask and trying to, I don't know, seduce or chat or just have fun on the system.

Mailland: Before we go in depth about your business and evolution of what you did online, let's talk a little bit about your background so we understand where you're coming from. What is your name, where were you born, what was your family background?

Hannaby: I was born in France in town called Fontainebleau, if some of you know where it is. It's south of Paris and has a *magnifique chateau* [magnificent castle], Le Chateau de Fontainebleau, and nice forest where I spent a lot of my weekends when I was young. My parents were French. My mother was French; my father was Egyptian, and they left Egypt when they had to-- they were expelled from Egypt so they came to France and they arrived in Fontainebleau and there I was born. So at that point-- what was the question again?

Weber: Just talk about growing up and family.

Hannaby: So we moved to Paris and that's it. And I started my medical school because I wanted to-- well, to help people to be well so I was-- I wanted to be a doctor so I spent eight years in medical school and at the end I wanted to be a surgeon but I was not sure I was able to get the grade to be able to choose my place of surgeon as an intern. I was a bit hesitant. At the time I met a friend with whom we started this service, and I slowly moved to doing just what I was passionate about, so that was a computer.

Weber: To go back to your childhood and background, do you want to..?

Mailland: Yeah, did you have any technical hobbies at the time?

Hannaby: Yeah, when I was young I loved to play and use anything with electronic inside. I was drawn to, all these components you can assemble and do something with and whatever was the result. Even if it didn't work it was really exciting to be able to assemble these small components and see that something that you can create will do certain things, so that was exciting. Yeah, I loved that.

Weber: What kind of things did you make?

Hannaby: Everything you can find in these early, like Popular Mechanics. We didn't have that in France, but they were showing some electronic schemes, so you were able to-- I don't remember. The thing you do when you're young, for example, something with you like controlling a straw bar, something, this kind of stuff.

Weber: Talk a little bit about your childhood, what was your neighborhood like, what did you like to..?

Hannaby: Dim memories, so it was just riding my bike. Not remember much, but yeah.

Weber: Were your parents in technical fields?

Hannaby: No, my father was a photograph. He was working with the SHAPE [Supreme Headquarters Allied Powers Europe] , you know, in Saint-Germain-en-Laye, and my mother was doing accounting at Siemens in Paris. So nothing technical about that. I just went and read all these magazines on the electronics and I was really interested by that. The computer and the software came after because it took so much space to build all these things that it was very difficult to sustain., I needed to have a lot of space on my small desk, so at one point I say it's not possible; I can't do this anymore, I need more space, so I switched to software because it didn't require as much space and it was the same excitement because you were able to build-- to create stuff that will do things but it didn't need all the soldering tools and such things.

Weber: May I ask you about what values you were raised with, politics..?

Hannaby: My parents are Jewish but they never pushed me to any kind of beliefs. I was really drawn to Buddhism, so I'm more-- I'm Jewish Buddhist.

Weber: Favorite teachers?

Mailland: Yeah, how was school? Did you enjoy school, anything that you might have-- favorite teachers?

Hannaby: Yeah, school, I remember one thing that was really nice when I was in my, I don't know, *Seconde et Première* [sophomore and junior year of high school] - I don't know what's the grade here.

Mailland: High school.

Hannaby: Yeah, high school. We had the chance to have in our school a big computer system that was part of a government program, and the math teacher wanted us to try that and to be exposed to that technology. So it was really-- for me it was incredible to go and type these things on the terminal. And my first program was one of chemistry, I was able to enter some line of codes and it was giving me the ratio of carbon, you know, hydrogen, oxygen, of a component I entered, so that was really fantastic at the time.

Mailland: What year was it and what system was it?

Hannaby: It was in '75. Yeah, '75, '76.

Mailland: And what system was it?

Hannaby: I can't remember the name of the system. I don't remember. But I'm sure we can find-- I checked a few months ago and I found some archives on the web that were talking about it, so I'm sure we can find-- it was a system that used printed tapes, you know, to perforate the tapes to save the program. It was really fun.

Mailland: You said earlier that you taught yourself software and coding. Was that at home or was that at school?

Hannaby: It was at home and it was, you know, you're seeing binary code with the very first computers.

Mailland: So you had a microcomputer at home?

Hannaby: No, I was just doing this by writing, so it was-- I checked the Altair on the review and I was trying to see how I can build one myself but it was too much-- too expensive for me at the time.

Mailland: So what was your first computer that you..?

Hannaby: The first computer was named DAI, D-A-I. And it was sold by a Belgian company and it was kind of-- they wanted to compete with the Apple 1 at the time and they were selling this computer for 14,000 Francs at the time. So I had a big discussion with my parents and I finished by getting this computer and it was really the beginning of something really interesting because it helped me go deep into the programming in assembly. And because of that I was able after to refine the code we had on the server system to go faster.

Mailland: Was that when you were in high school or university?

Hannaby: This was in '82 I guess, so it was after high school. After high school.

Mailland: And when's the first time you heard about going online?

Hannaby: It was at the time we met with François and I knew Minitel but I was not really involved in Minitel at the time, so as soon as I met François we were searching for some idea to build some system

for the doctors. We wanted to help doing some kind of software for doctors and whatever was possible at the time. It was maybe like system experts or something that will help them diagnose something, but it was maybe too complicated for us. So we were thinking and we saw this Minitel, these Minitels, and we just thought that it was a really interesting idea and it was a really new field and we wanted to do this system to help doctors communicate and be able to learn. We wanted to do *formation continue* [continuing education] for the doctors, so it was a way for them to be able to find any new system of diagnosis or technique, medical technique. We wanted to do this kind of thing. We succeeded building the server and it was-- at the time it was not on the Teletel network. It was modem-based, so it was a regular phone number and we plugged modems behind the computer. And the number was-- I think it was-- I don't remember --it ended with 10-10 and 15-15, and we choose 15-15 because 15 was the number for the emergency in France: dial 15 so you can have the ambulance coming to your house. And the system we built was working fine. We invested a lot of the money we had in it and we didn't-- we were not able to get money out of it, so we were searching for a way to do money with that system and first thing we tried was putting ads on the Minitel pages. So we put-- we were able to create ads for a *laboratoire* [pharmaceutical lab] so the first one was Organon, so we put an ad for a pill, *un contraceptif* [contraceptive pill]. And we needed to put the *mentions légales* [legal disclaimers] of the medicine in the ad, and it took many pages because the *mentions légales* [legal disclaimers] is [written] very small and the Minitel sadly was not able to display a lot of characters. So people, when they were checking the ad had to check, scroll through maybe ten pages <laughter>, so it didn't work as we expected because people would just disconnect because they were not happy with the fact that they have to display everything. So we tried that. We made a little money out of it and it was not the right direction.

Weber: Sorry, but you were charging for access time?

Hannaby: Yeah, we were kind of-- we had a deal with this pharmaceutical company and we made, I don't know, it was a deal to display their ads for every connection, at the beginning of every connection.

Weber: But not on Minitel? On your own BBS?

Hannaby: Sorry?

Weber: Before it was connected to Minitel?

Hannaby: Yeah, it was not on Teletel. This was on the regular numbers.

Weber: But the ads were on Minitel?

Hannaby: Minitel yes.

Weber: But then how would you monetize?

Hannaby: We just signed a deal with the pharmaceutical company, I don't remember exactly what was the deal, but it was an amount of money for a few months to display for everyone the ad.

Mailland: What is Francois's name?

Hannaby: Lagarde, Francois Lagarde.

Mailland: And what year did you guys meet?

Hannaby: It was in '83 I guess, '83, '84 and because he had the same computer as the one I bought-- we bought the same computer and so we met in this club of users. I was doing a lot of small apps for this computer and providing them to the club and the club sold them to users to make some money, and so he saw my apps and he was really interested. And at that point he asked me to-- if I was interested to start this system with him.

Mailland: Was he a medical student as well?

Hannaby: Yeah, exactly.

Weber: And so you were in what year of..?

Hannaby: I was at the end, so as I said it was my last year and I just switched.

Weber: And he was the same?

Hannaby: No, he was older than me, he was I think five years older than me, so he was-- he stopped also because he was already doing some software for doctors but I think it was an accounting software. So he stopped also to be able to sell this software and it was working on a small-- I think it was-- I don't remember which kind of small computer he used, but it was kind of a small tablet with a basic interpreter inside, so with a one-line display on it. I have an ad of the software that was-- so maybe I would be able to find it.

Mailland: So in the original setup, the user would use a Minitel terminal but not go on the Transpac network, just use the regular PSTN and connect to your server?

Hannaby: Yes.

Mailland: What hardware did you use? What software did you use for that?

Hannaby: So it was the-- the hardware was called Goupil and we used uniFLEX as the software and it had a BASIC interpreter, so we were doing the back end using assembly language and the apps in BASIC.

Mailland: And so going back to the evolution of your business model, when did you make the decision to switch from that model to using the 3615, which was the Kiosk system on the digital Transpac network?

Hannaby: At one point the server was very popular, so we had to double the number of lines, maybe to quadruple lines. I don't remember exactly, but at some point we had 32 lines, modems, and they were like always busy. Everything was busy all the time. We didn't make any money out of it so we were really-- we were in need of making money because this was costing us some money out of our pockets. And there was this 3615 coming-- that came a few months ago, a few-- one year ago, and it was only for *la presse* [ph?] only for les éditeurs de presse [official print presss companies]. And so we were not editors and so we were trying to find something to let us in, so at one point we asked all the magazines dealing with medicine to-- we went to see them and we asked them if they were interested by hosting, so we hosted their summary, their monthly summary on our system. In exchange they signed us a letter that they were on our system, so we ended up with a few, maybe 10 letters of *éditeurs de presse* and we used that to try to get a 3615, and, well, it worked. By chance it worked. And so at one point we were able to switch from the non-paying system to something that was getting us maybe, I don't know, one franc per minute of connection. So when we switched to that, we were, of course, afraid that people would not connect because, you know, it's a lot of money, it's expensive. And, well, they connected, they came to the servers and at that point we were very afraid of the fact that we were not going to be able to scale the system because it was the small computers. They did not have a bigger version of the system, so we searched for a new way to serve or to install the system. We had to go onto something that was using UNIX because our system was UNIX based. We found that AT&T was using these 3B2 and 3B5 computers, UNIX based, and they were sold by Olivetti at that time. So we asked Olivetti to lend us a small one to try to move our system to this computer, to install it on this computer, and it took a few months maybe because it was not exactly the same. The way of programming was more complex because it was an AT&T based UNIX and it was a bit harder for us that we are not really technical. Finally we were able to put the software on it and so we made-- we had to decide to buy this big computer at the time -- that was a 3B15 and the cost for the 3B15 was, at the time, one and a half million francs, so it was a lot of money for us because we just-- we didn't have any. But we were, you know, war against the world because if we didn't do the investment it was-- we would have to shut down everything. So we went to a bank, we described all what was going on, and they-- we bought the system and it was happily reimbursed in a few months because we were able to open the doors and people came in and rushed in and we were having maybe 10 times the volume of connection that we had before the system was installed.

Weber: And the name-- what was your volume; do you know?

Hannaby: At the time we had maybe between 160 and 200 connections at a time, all the time.

Weber: And before going on Teletel, what was the name of the service?

Hannaby: It was SM, but it had four numbers. It was a regular phone number.

Weber: Okay. The various communities that were attracted to SM started before going to Teletel?

Hannaby: Yes.

Weber: So who were the main users?

Hannaby: At the beginning it was, as I said, doctors and medical professions and their friends because it went out by the word of mouth and people were just coming to the service to have fun. They spent all night long on the service, you know, on the servers in the chat rooms, just to have fun. They were making jokes and just simple chat.

Weber: But when did the S&M community get involved and take-- become significant?

Hannaby: Which community sorry?

Weber: S&M.

Hannaby: SM. No, it was-- it stayed only on-- it was *messagerie rose* at the moment we started on 3615 because there was a lot of people coming in and it was not S&M really. At no point it went into an S&M community. It was really more *messagerie rose*.

Weber: Okay. But I mean, before going on 3615, it was not especially...

Hannaby: Doctors. Mainly doctors.

Weber: It really was social between doctors.

Hannaby: Yes, yes. And their friends.

Weber: Okay. So more of..

Hannaby: And their friends, because as soon as the doctor gave the number, the service was busy all the time. The people couldn't enter because it was busy, so they called, it was ringing busy, they hang up, they call, ring this all the time.

Weber: And it was both live chat, but also messages, right? I mean, you could email to stay in your box?

Hannaby: Yes. It was kind of an email platform because you could leave a message for a user, so user would just use the nickname. It was the way they were associated to the service, and their nicknames were unique. So once a nickname was used, it couldn't be used by anyone else. So people were able to leave messages, enter the 'salon', so there were five of them and they were able to chat together -- so people could allow others to come in or disallow people to come in. And you had a list of users connected, so you were able to see if your friend was there. At that point-- when we had the modem, the modem lines. At one point the server was so busy that it took fire. It just burned. It just burned and our two servers were destroyed. Of course we didn't have any backup at that time, so during maybe a few weeks we had to rewrite everything. And so the moment we plugged the new system in, instantaneously all the lines were busy. So that was a reassurance for us.

Weber: And what were the five salons?

Hannaby: Sorry, what..?

Weber: What were the five salons?

Hannaby: So in a salon you are able to have five users at a time, but you are able to create as many salons as you want.

Mailland: So in order to get on the 3615 platform, which is, just for our audience, the platform where users would pay by the minute, you first had to pretend that you were a press company.

Hannaby: Exactly. <laughs>.

Mailland: And you managed to do that by getting medical magazines to sponsor you?

Hannaby: Yes, yes, yes.

Mailland: And you had to get a server. But then you also had to get-- to lease a digital line from France Telecom, from Transpac.

Hannaby: Of course.

Mailland: How complicated was it to get that, how long did it take, how much did it cost?

Hannaby: It was a complicated process. It took a few months because we were not used at all to that because we were not in this business before. We just tried to get all this together. We went to see France Telecom and so they had to explain us how it worked, so we went to buy these boxes to connect Transpac in a certain location in Paris that was the only reseller of these boxes. And well, it took a few months. I don't remember exactly but..

Mailland: And do you remember how much the line cost?

Hannaby: Yeah I think it was like maybe one thousand, a few thousand francs a month. I don't remember exactly.

Mailland: And how many calls could you handle at once?

Hannaby: Per line we had 32 users, so at one point we had maybe-- we started with a few lines and at one point we had maybe 10 or 20 lines for us, and the other service we hosted.

Mailland: So going on that, over time you diversified your business model, so you had the servers hosting 3615 SM, which was the *Minitel rose*, the messagerie chat rooms, but then you-- so what did you do then?

Hannaby: Yeah we wanted-- At one point everything was working fine, we had a lot of money pouring in the company and we didn't need to do anything more for that because the traffic was going on the upper level and that was fine. So we spent a lot of our time at the café in front of the company and so we were all searching for some new ideas to innovate in our small field and there was a new thing going on in the US that was the downloading of files now using a, I don't remember, CompuServe at the time or maybe -- and they were using this protocol that was called Kermit; I am sure you know about Kermit. And so we had the idea to let users of Minitel connect the device to a PC, to a computer, and let them download files from our servers; and that was really new at the time and so we had to build this cable that was

connecting the Minitel to the PC, or the Atari at the time, or the Mac also. And then we had to create a new protocol because Kermit was not able to handle the asymmetric speed of the Minitel model. So we had to create something completely different that was able to handle that and so we did this protocol called Quicktel and we did the press conference at the release of this service in the FNAC Auditorium. We invited journalists and we showed them this new service and it created a lot of buzz and people went to download the electronic schema of this cable; a few created this cable themselves and we are selling these cables and at one point this service was making more money than the *messageries roses* because it sold really a lot of cables and we had a lot of magazines, computer magazines using it -- so we hosted like maybe five services using this Quicktel system.

Weber: Which services?

Hannaby: For example, maybe it was *PC Magazine*, the French one; we had that one. At one point it was used also by CompuServe. We handled the French node for CompuServe. Also they were using our protocol to let people download files in France. SVM [*Science et Vie Micro*, another French computer magazine] used our system also. There were a few names.

Weber: And you told us before the interview about the pricing model. What was the pricing?

Hannaby: We sold the cable for maybe between -- at the beginning it was like 60 francs and at the end maybe 160 Francs; and it was a bundle with the cable and 3.5' floppy disk.

Weber: And what was your cost for that package?

Hannaby: We had a deal with the company, I think it was in Rennes that was doing the cables and we bought the cables maybe like 10 francs at the best cost.

Weber: And you say you sold a million of them?

Hannaby: A million, yeah, it was a million of them were used, yeah.

Weber: And what year?

Hannaby: It was between '85 and '92.

Mailland: You also mentioned when we spoke earlier that you were leasing server space to other Minitel host sites?

Hannaby: Yeah, we were hosting, yeah.

Mailland: Can you speak about that?

Hannaby: At one point when the service was really popular we had users coming to see us and they wanted to have their own server. So, for example, it was press editors that were interested in this kind of system so they came to see us. They were regular users. They loved the system, the interaction between users, the type of apps that were available, the type of games that were available. So they came and asked us "Okay, can you do the same thing for us?" So we are not ready for that because -- we didn't do it and so we are asking ourselves "Are we going to go this way or not?" And since if we didn't get the clients, some other company will certainly get it, we decided to start to host other services.

Mailland: So what were some of those services?

Hannaby: I think the first one was called Eden, E-D-E-N, and it was a *messagerie*. They used the salon and the *messagerie*. There were a few of them. It was not in the big numbers but there maybe 10 of them.

Mailland: So the *messageries* were used mostly for kind of sex-oriented chat, right?

Hannaby: Yeah, you know, friendly, sexy, you know.... *Messagerie roses* so yeah.

Weber: But the many people outside of France in that era don't necessarily know what-- so what's a typical...

Hannaby: *Messagerie rose, you mean?* Well, they were using this for dating; you know, they were trying to find a companion. We had a few people that were able to marry with the service. We had maybe five couples that were married; that's not a lot but we knew that and so yeah, it was kind of, you know, easy chatting. People were able to pour all their fantasies on the system, just saying whatever they were not able to say in their real life they went on the service and take any-- I remember people having like five different or maybe ten different personas on the system and maybe sometimes chatting on two Minitels having two different nicknames. So just, people were bored with their lives so they came on this and just expressed many of their personalities.

Weber: And if someone who used the *messengeries* a lot it could be quite expensive.

Hannaby: It was very expensive. <laughs> Very expensive, yeah.

Mailland: So talk about the price.

Hannaby: Yeah, in the first year we started this I remember one person sending us a letter that she was asked by France Telecom a bill of 30,000 francs; so it was a lot of money at the time, 30,000 francs it was really huge. And so she was asking for us to reimburse but well, we couldn't do that. So we just-- well, a lot of people were connecting from their offices and we had a few lines for certain users that were really sometimes in need. So we offered some free time, not really free but they paid a very small connection rate for these people. But yeah, the service was costly and well, it was the way it worked. You know, people were paying a lot but I think a lot of money came from the companies that were having Minitels and maybe France Telecom had a lot of Minitel and people in France Telecom are using them <laughs> I'm sure, I'm sure.

Mailland: Jumping on this, it's well known as you confirmed that people were connecting from work...

Hannaby: Yes.

Mailland: ...which for an American audience might be a little surprising because you don't really see people in American offices going on porn sites on the Web.

Hannaby: It was not porn. It was not porn.

Mailland: Or on sexy chat rooms.

Weber: Craigslist encounters.

Hannaby: No but for example, I compare it to Facebook today.

Mailland: Okay.

Hannaby: It's an equivalent of Facebook today. It's a way for people to connect together to be able to-- even during the work because they were able to chat about their problems at work, anything; what happened last night with friends during a date and it was a bit kind of sexy talks but not only that.

Mailland: Right.

Hannaby: It was a lot of friendly talks. Being able to find a friend; someone you can talk with, you can spend time just talking about your fantasies and...

WEBER: And the anonymity made people...

Hannaby: Yeah, anonymity, yeah that was a very powerful thing at the time because it was one of the first times that people were able to just put a mask and say whatever they wanted on this kind of system to an audience that was there and was willing to read what they were saying. So there were famous users on the system.

Mailland: And how did the privacy regime work because we know that people were able to connect from work because on the bill it didn't say what site they went on.

Hannaby: That's true, yeah.

Mailland: But how much did you know about the users? How much did you keep on them, if anything?

Hannaby: We didn't keep much, in fact. No, it was just-- they only had a nickname on the system so that's the only thing that we knew about them. So we didn't know much.

Weber: How did you bill them then?

Hannaby: We didn't bill them. So that was Kiosk. France Telecom, at the end of the month, it was every two months. They sent us, it was a *reversement* [rebate payment] so they sent us our share.

Weber: Which was what?

Hannaby: It was about-- I don't remember. I really don't remember but it was a nice amount and so they did the billing. That was the good thing because we couldn't do the billing; it was too complicated for us, of course. When we were in the modem phase, we were thinking at that kind of model but it was too complicated because, France Telecom, if someone didn't pay they will just cut their line and go and send people to call them and get the money back. <laughter>

Weber: What was your percentage of if the user pays 10 francs you would get how many?

Hannaby: Yeah, I think we got, for example, it's a long time ago so I don't remember the numbers but maybe when it was 1.25 [Francs] maybe we got 1 out of 1.25, something like that. I think so but I'd have to check.

Weber: But you got the vast majority though?

Hannaby: Yeah, I think so, yeah.

Mailland: So when you and François we're sitting at this café outside your office and you'd talk about what services to provide and how to expand, did you have any ideology in mind? Did you have any goal besides making money?

Hannaby: We liked the idea that this was a tool for people to communicate; that it helped people to get together because there was nothing at the time that let them communicate instantaneously. It was instantaneous chat. You know, you were able to connect on the screen; find a list of users; find friends that you know by nickname; address them, just ask them to go in a salon with you and chat. So it was a way to-- that was really incredible for us because it was not possible before that. So we liked that idea and we were doing everything to increase the experience, to ease the experience of letting people communicate together.

Mailland: And was it just you and François? Were there other key people in the company...?

Hannaby: At the time we started together and at one point we were, after selling the company at one point it was like-- before selling it was like maybe 10 or 14 people, I guess, 14 people, yeah.

Mailland: Minitel is known to have been somewhat controversial in France. There were lots of billboards for the chat rooms that were quite suggestive.

Hannaby: Yes, yes.

Mailland: And a number of people got upset at the Catholic Families Association in particular, et cetera. So what were the legal things that you were concerned about? Did you self-censor? How did you monitor what was going on?

Hannaby: There were regulations. We were responsible for the content and we had to filter the content and there could have been legal actions taken for the service if something happened on the service. We were using people to filter the messages even for the chat rooms if something offensive was said the user

would be disconnected and we would forbid the user to come back on the system. So we were doing constant filtering and these users, and they were people that were all the time on the service and liked so much the service we asked them if they were interested to do this job and well they did it because they liked it. So I think at one point we, even at the end, when all the Teletel experience went kind of down, at one point we even think sold the service to one of these persons to use it for themselves.

Mailland: What was frowned upon by the state? What were the lines? I remember when we talked last time you mentioned you were hosting a site called 3615 HG which meant “gay men” and you said that these were monitored more than the mainstream chat rooms.

Hannaby: Yes. They were themselves *éditeurs de presse* [press editors] so they had people that were doing constant surveillance of every message going on through the service and especially on these because they were already kind of-- these were S&M services, this one for example. So surveillance was a big part of the system at that point for this service.

Mailland: So what kind of content would you filter out because S&M is not illegal...?

Hannaby: It was everything. It was everything. Every message was filtered.

Mailland: Right but what were you looking for that you would kick people out for?

Hannaby: We were not in charge of that because these guys were in charge of their system. We were hosting them but they were in charge of the content. They had the people doing the filtering of every message coming in.

Weber: But what was forbidden? What would they...?

Hannaby: You know, porno--, racial, pornography, offensive talks. Of course prostitution was of course forbidden and a few services were sued for prostitution at the time. I don't remember which ones but yeah, that was a very important part of the job to kind of protect users of strong language and harassment.

Weber: So threats between users?

Hannaby: Yeah, of course, yeah because during chats people could argue, of course, and you know French are always arguing <laughs>, but we didn't have many problems. As soon as something was

going too far we just disconnected the people and that was it on our side. I don't know what happened on HG but I think they were okay.

Weber: And then wasn't there pedophilia? That was illegal, right?

Hannaby: Well, you know, what happened on their system was their problem. We were just hosters.

Weber: So wasn't it a 3615 NAVY

Mailland: Right, there was an incident that was kind of made public by the Catholic Families Association where apparently some teenager wanted to become a sailor and went on 3615 NAVY which was a gay site and they kind of brought that to the public attention.

Hannaby: Yeah, I don't remember that though.

Mailland: Is that something that worried you in terms of the sustainability of your business to have that negative attention?

Hannaby: What was the year of that event, do you remember?

Mailland: I don't know.

Hannaby: No?

Mailland: Late '80s I think.

Hannaby: We were concerned by the fact that as the owner of the name of the service for example 3615 SM, we were abide by law, We were *directeurs de la publication* [publication directors] so we were responsible of the content. So for that we took all the measures we had to by filtering and that's it, but at one point after -- it was in '87 I guess when we sold the company to Maxwell Group, it was the peak of the Minitel era. And after that it kind of slowly went down, connections kind of went down, and for bringing more connections you had to have a very high sustained ads in the media. So at that point we we not too much involved in these kind of problems.

Mailland: Let's talk a little bit about the people who were monitoring the system. There's a gentleman in France named Jean Marc Manach who writes for Le Monde sometimes who has told the story of being a

college student and his job was to monitor the chat rooms but at the same time pretend to be a user in order to get the conversation kind of going. Did you employ this type of people?

Hannaby: Yeah, yeah, of course, of course.

Mailland: Can you speak of that?

Hannaby: So this gentleman was called Lionel and I don't remember his nickname. This guy was responsible of the filtering and the conduct of the users. So he was able to get as many entries in the system as he wanted. We gave him this authority so he was about to connect as as many users as needed to regulate the flow of conversation. At one time he was able to chat as 10 different persons. So, it oriented the whole communication flow in the system.

Weber: Did he have multiple terminals?

Hannaby: Yeah, he had the multiple terminals and for that we created a software on PC so he had a kind of huge window and on the window he had all his sessions open. So he was able to create like 10 or 20 sessions on the PC that were all equivalent to a Minitel. So he was working on that PC most of the time.

Weber: And in your office, not at home.

Hannaby: He was at home. He was not in our office. He was I think in the middle France, near Sarlat.

Weber: And how many people like that did you employ?

Hannaby: Two. Two people.

Mailland: And they were connected 24/7?

Hannaby: Yeah, they were most of the time; as long as there were users on the system, they were there. And so these two people working together and they ended as husband and wife and so they were working in the same room and so they had all these Minitel terminals and since they were only chatting by Minitel, to talk to themselves they were using the Minitel. <laughs>

Weber: They were both good at chatting.

Hannaby: Exactly.

Mailland: Did you need to get permission from the state in order to start your service? I know that when we talked at some point you mentioned your partner having to get some authorization from someone and noticing that the lady from the state was actually on your chat room.

Hannaby: Yeah, so when we went to France Telecom we had some-- I think the person that was responsible of the inscriptions, you know, the authorizations to get the short codes, was on our server, was on SM and I think that that helped a lot for us to get them.

Weber: But did she realize that you knew that?

Hannaby: Well, yeah because at one point we told her hey, that's our system and yeah, I'm sure that helped a lot. Yeah, that was our luck this day.

Mailland: Let's talk about the culture. It must have been quite an exciting time.

Hannaby: Yeah, yeah.

Mailland: You were doing something completely new. How did it feel and was it, do you think, similar to what happened here with the dot-com?

Hannaby: Yeah, of course.

Mailland: What was going on there? What was the excitement like?

Hannaby: Well, it was much smaller communities, you know. There were a few companies doing that so it was not as big as the Silicon Valley or the dot-com era but it was really impressive because we were really feeling that it was something that will disrupt the communication systems and the way people interact together. It was completely different than anything that happened before. And the fact that France Telecom was providing the terminal for free was a big part of the success of this switch of mentalities, you know, because they were able to use this at home. Of course, first it was not used for the *messengeries* but since France Telecom provided a way for the companies to get money out of their services it created plenty of companies willing to be part of this experiment and to get the money out of it by providing new services. Most of them were similar but this was a very big success for France Telecom.

Mailland: So you had France Telecom in the middle but then you also had the private entrepreneur culture that you were part of. You mentioned that it was smaller than Silicon Valley. How many people do you think were involved with this?

Hannaby: At the beginning it was a few companies. You know, it was not so many. Maybe in the 10 to 20s companies doing this kind of systems, creating this kind of software. And it grew quickly because of the fact that the money that the companies were able to get back from France Telecom was huge for the press editors.

Mailland: And did you hang out with your competitors?

Hannaby: Yeah, we were all competitors, we were competitors so yeah, it was a mix, you know, of careful hanging out or sharing things but not too much. It was very new so everyone was asking about what the other one was using as a software, as a hardware and it-- for example, when we started to use the 3B15 we were the first to use the 3B15 as a Minitel server; and after that Olivetti sold many of them for this purpose.

Mailland: What were other people using because we also know that the French government was trying to use this to promote a French hardware industry and promote Bull in particular.

Hannaby: Exactly. There was some computer-- I don't remember but there was this French system that was used but when we tried to switch to another system we find it too complicated so we just, you know, stuck with the UNIX. But yeah, there were a few other systems at that time but they were not able to handle the charge we needed to provide.

Mailland: And did you have interaction with online entrepreneurs in other countries?

Hannaby: At one point, France Telecom tried to sell the Minitel in the US. It was Intelmatique that was doing this and Georges Nahon that was doing this. And it didn't go very far. The problem was in the US that AT&T was not able to provide for free the terminals. So the whole idea was not-- France Telecom couldn't replicate the same business model to another country. But we sold our system in Quebec that was using *Alex* I think. So we created a system that was compatible with the *Alex* and in Germany with the *Bildschirmtext*. So we had a few sales in other countries.

Weber: And you were selling a system at that point.

Hannaby: Yeah, at one point, when we were done with the hosting, when we had all this hosting era, at one point we tried to go further and so we started to sell the kernel, the software and so we sold a few of them. And we sold one for the French Lottery that used it for 3615 LOTO; so that was interesting because our system was able to handle all the need of users that were rushing when they announced the results of the French Lottery. So, that was interesting because it was kind of-- we needed to adjust a lot of parameters in the system to be able to handle that charge.

Weber: But the system included I mean, *messagerie*, tons of features...?

Hannaby: Yes, all of it.

Weber: But also what beyond that?

Hannaby: But it was, for this purpose it was just very basic. It was just a few pages that will indicate the results, a few gains, I guess. I remember there were a few gains but it was just created for this purpose because it needed much more users at one point on our regular system.

Mailland: So you mentioned two things that might sound contradictory. One thing is that you said France Telecom was really helpful because it provided the free terminal, it provided the Kiosk system, so it really helped the system going.

Hannaby: Yes.

Mailland: At the same time, France Telecom was the state. And you also mentioned that Minitel you thought would really disrupt things and change the way people started interacting.

Hannaby: Yes.

Mailland: Which might be contrary to what France Telecom would have wanted in a way. One anecdote that maybe you can talk a little bit about: it is said that in 1986, when students were protesting, there were student demonstrations, that the students used the *messageries* system to organize the protest. Is that true? Were they using your system?

Hannaby: I don't remember that. Maybe, yeah, I'm sure they were able to use it because it was available to anyone.

Mailland: But you didn't actually see it go on?

Hannaby: I don't remember that. No, I don't remember that.

Mailland: Do you think that France Telecom knew that it was kind of opening a can of worms when it launched the system, in terms of the disruption that would--?

Hannaby: I don't think they knew exactly what they were doing. You know for France Telecom, it was a way for them to get rid of the paper, the *annuaire*, paper listings at the beginning. So they started with this, but I'm not sure they were envisioning the whole ecosystem that will be created by offering for free this terminal.

Mailland: What was your vision for the future of telematics and the online world?

Hannaby: It was really about connection between people. I really wanted people to be able to connect together, to be at any point, at any moment, from any terminal, being able to go and chat online. We even created at one point some software on the PC to replace the Minitel on a more friendly way of interaction and so some people used it. But the fact that the Minitel was very easy, and you just switched it on and it was operational, was really a plus for it. The most easy thing you can provide to a room for people to connect with.

Mailland: A lot of the things you said in terms of connectivity between people, really echoes what was going on in San Francisco in the '80s -- the WELL was one of the systems -- and you hear this in rhetoric from people. What was the community of users like? How did it evolve over time? What was going on outside of the actual online work? You said you organized parties.

Hannaby: Yes, that's true.

Mailland: Things like that. Can you speak about that?

Hannaby: Yeah, yeah, of course. So the community of people were really-- it started with small networks of people. These people knew each other at the beginning, of course, because there were doctors communicating together so they knew that they were able to go online and leave a message to another doctor and so on. So I think the fact that the core community was a small one, knowing each other, was helpful because it created this strong sense of connection together. So these people came in and just wanted to get rid of the stress of the day, of the tension of the day. So they used it as a way to have a light conversation. So at that point, they gave this to their friends. There was the core, a very strong core

of users that knew each other and there was all these people added by the ads we had at one point, in the subway, in the magazines and so on. I think the core of users were happy to see all these new people coming in. I think that this core taught the way of using and interacting with the system. So it created a strong bond between the users, because they were using the same way of interacting that was taught by the first users. So of course, it was chatting, dating of course. People used that to date and myself, I used it to date. At one point, I had a girlfriend that I found with the system. So there were a few people that were able to marry using the system. Because of the popularity of the system, we started to organize parties. These parties gathered maybe a few hundred people at one point, so that was not too bad. I remember one of the parties was organized at the Moulin Rouge in Paris. We rented the whole space at the Moulin Rouge, so people came and had their dinner and danced, and it was fun.

Weber: And with the show?

Hannaby: I'm not sure we had the show. No, only dining. Only dining.

Weber: What year were the parties?

Hannaby: I think it was I guess '86. Yeah, about '86.

Weber: Geographically were most-- obviously that was people around Paris?

Hannaby: Yeah, *la région parisienne* [the greater Paris area], because that was the most-- well, all the Minitels were.

Weber: Geographically, what was your distribution of users?

Hannaby: Most of them were *région parisienne*, and when Minitel started to get out of *région parisienne*, of course we saw all these people coming from all parts of France.

Mailland: How big did your user base grow to, eventually?

Hannaby: I'm not sure, but I think at one point, were like-- so as I said, we sold one million of these cables, so I think at one point, we might have been, I will say something completely-- maybe two million, I don't know.

Weber: People that had a log in, essentially on this.

Hannaby: We were not able to know exactly how many different users we had, because there were nicknames and the nicknames, they were rotated. So at one point, you couldn't count exactly.

Mailland: France Telecom didn't tell you how many clients there were behind?

Hannaby: It's not the same way as the internet where you can spot the IP. It was not the same way. I guess they could give us a rough number, yeah.

Mailland: We talked about a service where you could download software. We talked about the *Minitel Rose*. You also mentioned games.

Hannaby: Yeah, games, we had a few of them. When we wanted to create new services, so of course, games, as today with the internet, you can find games on the web, on apps and so on. So at that point, we tried to create some games for people, beside the usual *Messageries* and *Salons*, so they were able to spend times playing games. We had this game called *Le Pendu*, so they had to guess a word, and if not, they will see a drawing of someone being hanged. It's a very classic game. I'm not sure we had Tetris. I think we had Tetris, I guess so. We had Tetris, we had this *Jeu de la Vie*, Game of Life, Cellular Automata, and we did something very silly at one point. We did something that was called *L'Horloge Riche*. So it was just a clock, display of a clock on the Minitel with the big numbers, big letters and that was just displaying the time of day. It was a very, very expensive clock, because it was costing for the people, 1 franc and 25 cents a minute <laughs>. And some users, in the start, we saw that it was used a lot. I don't know where it came from, but it was used. It was very funny. So that was it.

Mailland: On that note, speaking of the time that it took to download stuff, some people looking at Minitel today say, "Well, it was really slow."

Hannaby: It was.

Mailland: Jean-Paul Maury has suggested that it wasn't necessarily just slow because of France Telecom, but it was slow because the editors of services were putting useless characters into the frames, that you didn't see, but that made it longer to download.

Hannaby: Of course, yeah. That was not true for our servers, for our protocol, because we tried to do the most efficient protocol using the Minitel modem. So we had a rate, it was 1,200 bauds, so I think our rate was above 110 characters per second. So we really had a very fast transfer rate. I'm sure there were enough connections to not play on that.

Mailland: That game.

Hannaby: Yeah.

Mailland: But it was done by others.

Hannaby: I'm sure it was done. There were many things done by other editors to increase, of course, the time spent by users online. It's a game of money, you know. That's it.

Mailland: Speaking of game of money, are you willing to talk a little bit about how much the revenue was for your company?

Hannaby: Yes. When we opened the gates for this 3615, at one point it was one million a month of French francs, about. I'm sure it went above that, but I don't remember exactly, but it was about that. So it was doing 12 to 15 million francs a year.

Mailland: How much was your overhead? How costly was it to actually run your service?

Hannaby: We did a really good margin. I think the best we had as a margin was 80 percent, so it was good. It was a good margin <laughter>.

Mailland: How was your business organized? You mentioned your partner.

Hannaby: Yes, François.

Mailland: You mentioned the two people working. Who were the other people? What were they doing?

Hannaby: So at the beginning, we were two of us, François and me. So someone else entered and taking charge all the finances. After that, we started to enroll, to hire employees that were developers. So they were working on the server, the apps. Mainly at the beginning, we had I think two developers. At one point, we had 12 to 14 people, I guess, working on the system. So at the beginning, we were two of us, so François and me. If we can compare to Apple, but that's a very... so François was Steve Jobs and I was Wozniak <laughter>.

Mailland: Did you work out of a garage?

Hannaby: We were, yeah. We were in a cave. We started in a cave.

Mailland: Where?

Hannaby: Not even a garage, and it was, I don't remember the exact address, but it was of course in Paris, I think in the *quinzième arrondissement* [15th district of Paris]. It was a very small cave. It was about maybe 10 to 12 square meters, so it was a small space. It was okay, so we could work all day long. It was in the same conditions. It was cool and we had the bulbs for the light, so we could work all day long. It didn't seem too bad. It was okay.

Mailland: Is this where your servers were?

Hannaby: Yes. At the beginning, yeah.

Mailland: Did you move them to a special facility?

Hannaby: No. When we started to have this big server, we moved to a place near *Hopital Necker*, so it was *Rue de Sèvres*, 163, *Rue de Sèvres*, and we had this big, huge server there. It was a regular store. There was the cave where the servers were located and we had a small office with a few desks.

Mailland: You mentioned that office was right outside the hospital. Were you interning at the time, or were you still a student?

Hannaby: It was not the same. No, it was another hospital. I don't know why we decided to move to near there. Maybe it was the proximity. We liked the proximity of a hospital maybe, I don't know. We were drawn to the hospitals.

Mailland: Did you study through the entire--?

Hannaby: Yeah.

Mailland: How did you juggle work?

Hannaby: When I started to work on the servers, I slowly stopped medical studies, but I was nearly at the end.

Mailland: Did you graduate?

Hannaby: I did not. I did not. I just decided, because I wanted to be a surgeon and I knew I would not be able to get the right grade, so I decided not to.

Mailland: To drop school.

Hannaby: To drop, yeah.

Mailland: What happened to the service? You mentioned you sold it at some point.

Hannaby: Yes.

Mailland: What was the motivation? What year was that?

Hannaby: It was in '87, we really wanted-- we thought it was the right time to sell the company, at least a part of the company. Fortunately, someone was searching to buy, to invest in a company that was providing these kind of services. So we met these two guys that came and checked our infrastructure, systems, location, software, everything. A few months later they said, "Okay, maybe we will be interested in buying your company." So in September of '87, we sold half of the company to the Maxwell Group. It lasted two years, because at that point, it was kind of the peak of the Minitel era and profits went slowly down. At one point, the Maxwell Group asked us to find another investor to replace him. So I went and found Pressinvest that was searching to increase its products, its telematics products. So they used our systems to host their services after that. So we provided these new products to them and they passed all their-- they ported all their systems on our kernels.

Mailland: When you said you sold half the company, you didn't split the company. You sold half the shares.

Hannaby: Yeah, exactly.

Mailland: Do you care to disclose the...?

Hannaby: It was a good amount of money <laughter>.

Mailland: What was the company called by the way?

Hannaby: Canal 4.

Mailland: Canal 4.

Hannaby: Yeah, Canal 4 because at that point, it was the beginning of-- I think there were only three [television] channels it started. So Francois had filed the name at the beginning and he was searching for a name that was involved with TV and so I think he took Canal 4 because there was only three channels on the TV. So he took Canal 4 because maybe he was hoping that at one point, a TV channel will buy back the name or something like that.

Mailland: Did you provide any teletext services over televisions?

Hannaby: I think at one point we tried something about that, but no. We had an in-house software that we sold for providing-- it was a tool to create text on the video but no, we didn't quite teletext per se.

Mailland: So you sold half of the company to Maxwell in '87 and then when did Maxwell get out and move it up to--?

Hannaby: It was I think two years later. So we started with *Nouvel Obs*, I think in '90s, in 1990.

Mailland: Okay, and how long were you still involved with the company after that?

Hannaby: So I stayed as a manager during the Maxwell and Pressinvest era. I got out in '92, at the end of '92.

Mailland: And who did you sell the rest of the interest to?

Hannaby: Pressinvest.

Mailland: Okay, so they bought the whole thing.

Hannaby: Yes.

Mailland: And how did the culture change from being in your cave, to being in a more proper office to all of a sudden having the Maxwell Group part of your business? <laughter>

Hannaby: We had someone on our backs, you know. We were not really in charge anymore of course. These guys were British, so they wanted to check all the numbers. That was not in our way of thinking, because we were doing things more on an easy way. At one point, it was kind of annoying, of course, of course, but well, this is business. We got a lot of money in exchange. These were the rules. But it went good. I'm not sure, they used a lot of our products and that's a shame, because we had really good products --they were not able to take these and maybe for example, use them in other parts of the Maxwell Group.

Mailland: Was Prestel dead at the time, or were they trying to bring your services to England?

Hannaby: No. They had AP, Associated Press, I think at the time. They wanted to create some kind of synergy between all these parts, but I think it was a big, huge group. Dealing with all these companies was not easy for them because it was young companies' products that they were not really used to. We had a very high level, we had in front of us very high level CFOs of the group, so it was kind of a strange discussion. It was not the same language. So at one point, they decided just to get rid of us, I guess, because it was not in their-- I don't know.

Mailland: But then you said that they sold to Pressinvest and you were still on board.

Hannaby: Yeah. So they asked us if we were able to find another investor, someone that would be able to acquire the company, their shares of the company. So we went and there was this big ecosystem at that point with Pressinvest that was one of them. [Henri de] Maublanc was another one of them. So we had a few offers. So two of them, one coming from I guess de Maublanc and one was coming from Pressinvest and well, we chose Pressinvest because we thought that it will bring us more. There was more on the table because we were able to provide our products to Pressinvest and they will use it in their centers.

Mailland: How did that change the business model in practice?

Hannaby: We just got, you know, integrated to Pressinvest, but we were kind of autonomous, so that was nice. We were still able to do what we wanted to do to innovate, to create these new services. So we were able to push our technology and put it into their systems. So it was a good fit.

Mailland: You mentioned you got out in '92?

Hannaby: Yes.

Mailland: What prompted that decision?

Hannaby: I think it was the end of the cycle, the end of the cycle. I did everything I can do in this kind of Minitel technology. Other things were coming on, on the technology front, the early web. There was Audiotel in France that was starting. So I decided just to move because it was, I guess, the time.

Mailland: What did you do with the site? With your company?

Hannaby: With Canal 4, you mean?

Mailland: Yes. How long was 3615 SM around and the other sites around?

Hannaby: So it stayed a few years after that, but it was sold many times. The companies was sold many times. I don't know exactly how many, but I think at least two or three times after that.

Mailland: What do you think happened to the community of users? Did you hear from these people?

Hannaby: As I told you, when we sold to Pressinvest, we sold a bunch-- we sold our company, the shares of Maxwell. A few months before, SM was going kind of down because the community of users was shrinking. We were talking with this guy that was doing the filtering. He was managing the community, kind of, so he asked us if we were able to sell him or give him, I don't remember exactly, transferring the rights to the 3615 and we thought about it and it was a good thing to do because it was starting to lose money. So we decided just to transfer all of the property of the SM mark and servers, hardware, everything, to this guy.

Mailland: What happened?

Hannaby: I think he used it for a while. I think it's a sad story because the guy had a health problem and he died not much after. After that, I don't know what happened to it.

Mailland: Is there anything that remains, do you think? Are you still in touch with any of the people from back then, the users, the people you partied with?

Hannaby: No, it's a long time. It's a long time. And since I moved to the US a few years after, people move everywhere in the country, so it's difficult to keep a link to them.

Mailland: You mentioned that one of the reasons you left in '92 is that the user base was declining a little bit.

Hannaby: Yes.

Mailland: You saw new stuff from a technology front, like the web.

Hannaby: Yeah, web, Utel, yes.

Mailland: After '93, you see a complete collapse of Minitel use. When you left, did you have a sense that maybe you wanted to take your experience to the web?

Hannaby: Yes. First I like this technology we developed with SM1, so I tried to move it to these new services that were offered with the Audiotel that enabled a higher speed. So people were able to download files much faster, because they used the regular modems instead of Minitel. So at one point, we switched everything to Audiotel lines and so people were plugging like it was at-- we started with the modems of 14,400K bauds and at the end of the life of the service, it was 33K bauds or something like that.

Mailland: So what was the business model of Audiotel? Was it like the Kiosk of France Telecom?

Hannaby: Yeah. It was kind of like the Kiosk, but there was a few different rates. One of the highest rates was a fee at the connection, plus a fee per minute. So we used the higher rates for specific files or apps that we were buying from some developers. So we gave some money to developers to build software that we were selling on our service.

Mailland: Who were your clients?

Hannaby: They were clients from the Minitel that were using already our service, and they were in demand of faster download and more files and an easier way to connect. So this was a product that was on PC. They didn't need a Minitel so it was easier for them to download files.

Weber: And what kind of files?

Hannaby: Any files. Like for example, you have these websites today like download.com. We had the same kind of products. We had a base of creators that we were asking them to develop software, games,

mainly games. So we gave them a part of the money we received and a lot of the files were coming from the US because we were buying, for example, CDs with files. We were putting a lot of them on the server.

Mailland: So what was the interface like for the user? They had a PC at home?

Hannaby: Yeah, they had a PC.

Mailland: Was there a graphical interface?

Hannaby: Exactly, graphical, yeah. Graphical, so they can see the download progressing and the file, the name of the file. They were able to choose. They had the directory. It was really easy. We wanted to do something really easy for them to be able to find the file, type of file, pictures, videos, executables, you know, and so on.

Weber: But mostly pornography.

Hannaby: No.

Weber: So what sort of files were there?

Hannaby: Software, executables, games.

Weber: But when you say videos.

Hannaby: Videos. Yeah, I don't remember what exactly we had. There was a lot of pictures of nudity, yes. But videos, we have very few in fact. I don't remember. But yeah, you know, kinky.

Weber: But not user generated.

Hannaby: Not user generated, no, no.

Weber: Okay.

Hannaby: No.

Weber: So, there was no way--

Hannaby: Only user generated were the software. Some of the users were contacting us and asking if there were able to sell their software through the system. So, we had a few of these, had a few of these.

Mailland: So, you controlled all of the content?

Hannaby: Yeah, of course. Yeah.

Mailland: And then Audiotel also had, if I remember correctly, some interactive voice systems.

Hannaby: Yes. Yeah, I--

Weber: We're you trying to replicate the Minitel Rose but as an audio version?

Hannaby: No, we sold more like interactive systems, for example, for the-- for example, information, we had one for the *meteo* [weather service], one for *traffic routier* [road traffic]. So, people were able to ask for traffic information. They entered their zip code, so, they had status of the traffic in their region. A lot of services for radios so people were able to play. On the radio they would say, "Connect to this number." And so, the user would be able to answer to a quiz on the service and sometimes win a prize. I don't remember exactly what prize, but mostly interactive systems.

Mailland: And at this point, were you still kind of thinking about these systems as a way to help people communicate as a disruptive thing?

Hannaby: So, for me, the audio was not the way for people-- it didn't feel the same as the Minitel on communication point of view. I didn't add the same-- it didn't let the people have this anonymity because you have the voice. And the voice, you know you can know everything by the voice of someone. So, we didn't go to provide any kind of system that will let people gather together on the voice, a room or something like that. No, we didn't go to that kind of system.

Weber: And did you go into the web?

Hannaby: Much later, in fact, much later. This Audiotel lasted maybe four years, about four years. Yeah.

Weber: So, that's '96?

Hannaby: Yeah, '96. At that point, I came to the U.S.

Weber: So, what prompted that move?

Hannaby: Boredom, I guess, in France. Everything-- for me, I did everything in France I had to do in this kind of communication systems era, software, blah, blah, blah. So, I wanted to experience something new. And so, I decided with my wife to just move to the U.S. and try what was going on in the U.S. So, we moved to Houston at first.

Weber: Why Houston?

Hannaby: For-- it would be too long to explain, but for personal reasons. And so, we ended up in Houston. We started in Miami. We ended up in Houston. We spent a few years on Houston. And after the Enron crash and at the moment HP bought Compaq, we left.

Weber: Were you involved in business there?

Hannaby: Yeah, yeah. So, the business was difficult at that time in Houston. So, I decided to--

Weber: What sort of business were you--?

Hannaby: Consulting in software. I wanted to try something else, so I was consulting for oil companies.

Weber: On software related--?

Hannaby: Yeah, software related. So, it was more kind of engineering software. It was a bit starting in the web, a bit of web, providing web services a little bit. It was the beginning of that.

Weber: And how did you meet people in the American oil business?

Hannaby: You know, there's Schlumberger in Houston. So, in fact, there were a lot of-- we met every week in a fast food-- there was a gathering of French people in the fast food every week on Thursdays--

Thursday nights. And so, we just sit there, have a drink, have some food, and chat with other French people. And so, we met with their relations and business relations.

Weber: And is your wife in technology?

Hannaby: Not at all. She's a psychic, so completely different.

Weber: There can be psychics in technology.

Hannaby: Psychic?

Weber: There could be psychics around technology, too.

Hannaby: In technology? Yeah, but you know it's not-- yeah, I guess they don't use it a lot. There are websites on-- Audiotel sites that provide psychic services. But she's not doing that.

Mailland: Anyway we can kind of look back?

Weber: Yeah, and there's a few business questions I'm not-- do you want to do it now or--?

Mailland: Which ones?

Weber: Did you ask about the other employees and stuff?

Mailland: Yes. Yeah, we covered that.

Weber: Okay, and then the money?

Mailland: Yes.

Weber: Competitors? I realize we didn't talk-- back with-- well Canal 4 became-- that was the parent corporation from the beginning, right?

Hannaby: Yeah, that was-- for the--?

Weber: From what year?

Hannaby: Starting in '84.

Weber: Okay.

Hannaby: '84 and we kept Canal 4 as the main company for the Minitel services.

Weber: So, when it turned to Minitel, it became Canal 4? Okay.

Hannaby: Yes.

Weber: And who were your main-- you were one of the first *messengeries*.

Hannaby: Kind of--

Weber: Talk about competitors.

Hannaby: Well, there were a few competitors, small company as us, mainly. The big ones were the editors, the press, providing services on Minitel. And all of them were kind of *messengeries roses* at one point. Yeah, it was fierce between competitors because we were all trying to get the users because the community of users was not infinite. So, it was not a small community, but there were at one point in the *région parisienne* [greater Paris area], there were like-- at the beginning, there was fifty thousand Minitels when we started. So, that was not so much. So, at one point, to bring users on the sites, we-- and I'm sure all of the companies were doing this, we were going on other's sites and just trying to bring the users to ours. So, that was going on a lot between the sites. Yeah. I don't know. I think at one point, we got a call of-- I don't remember which one, asking us to stop because we're going too much on their sites.

Weber: And your main-- what--? All of the main companies were competing.

Hannaby: Yeah. And so, for doing this, we had an Apple II. I remember that. That was connected to a Minitel and was sending messages to people on-- I don't remember which one-- competitor's list, telling them, "Okay, come and see me on 3615 SM," for example. And I don't remember the exact messages. And I remember that was done on the Apple 2C that François bought. And I think he wrote the basic program to do that at one point. Yeah, I think so <laughs>.

Weber: Oh, the ads, obviously you're all spending a lot of money on ads.

Hannaby: On the ads. Yeah, I don't remember exactly--

Weber: Who did them? Was there-- were you-- you were using the agencies for these or in-house?

Hannaby: The ads, yeah, I guess. I don't remember exactly. I think we were using-- at one point, we had someone that was managing the ad department someone who was doing all the ads, the press, etc. So, I'm sure she was using some companies to create the ads and--

Weber: This was, for you and your competitors, there was a real war in paths.

Hannaby: Yeah, of course. Yeah.

Weber: Was it a significant expense?

Hannaby: It was not so expensive. I don't remember how much, but I remember it was not so expensive. For example, we used, when we did these campaigns in the subway, we did-- we can use a lot of these big 4x3 [meter billboards] in the subways. And I don't remember the price. I think it was kind of low.

Mailland: Did you ever run into any legal problems that you had to get lawyers?

Hannaby: At one point, yeah we had this for the file download system because we were asking software creators to sign a contract with us to sell their rights to the software. I remember that at one point, we had a developer-- another company was doing the same thing. And these guys sued us because they were asking us to pay, I think, one million francs because we were using a software that was belonging to them. But in fact, we had the contract before them. And so, it ended up by them paying the lawyers' fees. And that was it.

Weber: Should we look back a little bit?

Hannaby: Sure.

Mailland: So, Minitel was an odd architecture. It was a hybrid architecture where you had decentralized servers with private entrepreneurs. But the platform was run by the state, very centralized through the Kiosk system. What do you think the plusses and minuses of the platform were?

Hannaby: On the economical-- the nice thing about France Telecom and Minitel was that they gave this for free. So, that was fantastic because it was able to create a nice ecosystem of companies that were able to get their money about it. They did a good job in providing this architecture with their Transpac and X.25 to connect. It was, for the companies, a bit complicated because they had to create these softwares, specialized software, to connect to Transpac. So, we had at one point black boxes that were in front of the computers to translate the X.25 coming from the lines into something that the computers would understand. But beside that, the architecture was really something-- it was a choice between this and, of course, IP, TCP/IP, but it did a really good job. So, I can't complain.

Mailland: At the same time, you moved to the U.S. because you said, "Well, I did everything I could do in France."

Hannaby: Yes.

Mailland: Did you feel constrained by the system?

Hannaby: No, I think there were more opportunities in the U.S. And there were new opportunities and the fact that in France, these many companies that were using-- still using Minitel and providing Minitel services were stuck with their technology, with their investment, because a lot of money was brought in these systems. So, they were not able to move out of that and create something new, for example, providing service through the web. Though, at one point, you were able to access Minitel services through the web with-- there was some kind of platform that was providing that. But I think that the constraint was that this nice infrastructure that was put in place by France Telecom kind of restricted peoples and companies to see out of the box and feel what was coming up with the World Wide Web.

Mailland: So, you did this as a university student. And then you ended up dropping out of school and not graduating.

Hannaby: Yeah.

Mailland: Like many web entrepreneurs did later.

Hannaby: Yes.

Mailland: If you had been an American college student in '83, do you think you would also have dropped out of school to start an online business?

Hannaby: I think I had this passion. I was really intrigued by computers, by software, by electronic components. So, I'm sure I would have done something about it. Yeah, I'm sure it would have provided maybe more opportunities in the U.S. If it was not the Minitel, it would have been something else. Yeah.

Mailland: So, why do you think, still comparing to the U.S., Minitel was incredibly successful domestically. It failed horribly in other countries. But even in the U.S., platforms like AOL or CompuServe, weren't doing that hot in the '80s. Why do you think Minitel was so successful where American online services at that time, pre-web, were not?

Hannaby: Simply because France Telecom was providing for free the terminal. It was a huge amount of terminals that was pushed to the users. At one point, it was the country with the most terminals per users pre-web. That's why. People were able to use that because they had that at home. It was free. So, they started by trying. Of course you can try that easily. They used it for the *annuaire, les pages jaunes* [the online phone book]. And of course, they were bombarded by ads of *messengeries roses*, and a lot of people tried that. But since in the U.S. it was-- you had to subscribe at the time for CompuServe-- I subscribed at the time, I was a CompuServe subscriber. It was costing money. So, while I guess that was the barrier.

Mailland: So, Minitel became incredibly successful incredibly fast. But if you look at penetration rates, it also failed incredibly fast. Why did Minitel fail?

Hannaby: I think it's because of the PC, the PC penetration. At one point, you had all the PC industry pushing with these very interesting programs and a way of interacting with data that was provided by these software. So, I guess yeah that's why.

Mailland: And so, if you had-- in retrospect, looking at this, knowing now why the web was successful, if you had been in charge of the platform, what would you have done differently? Would you have tried to save Minitel, upgrade it? Or was it just time?

Hannaby: I think yeah, I think it could have been upgraded to something that would have used the web as an infrastructure. But it could have-- keep the ease of use of the interface for the end user because it was-- I think one part of-- big part of the success of the Minitel was the ease of use. It was just have to switch it on to open the keyboard and that's it. It was on. And you were able to interact. So, I'm sure that something similar could have been used by a certain kind of users, because for example elderly people have been using this terminal for a long time. And at the end, when it was shut down, well they didn't have anything to use. And it's a pity for them because it just cut them from a lot of things they were accessing before.

Mailland: So, Minitel failed and is--

Hannaby: I think it didn't fail. I don't think it failed.

Mailland: It just ended?

Hannaby: Yeah, it ended. It's a cycle like everything in nature. It just had to be replaced or ended because at one point, it was not-- the cost of maintenance was too high for France Telecom, I guess, to continue with this platform. And they couldn't find any, for example, replacements for certain parts I guess. So, I guess it needed to-- yeah, thirty years is a long time in technology. It's a very long time.

Mailland: Now, French people tend to be pretty proud about the whole experience.

Hannaby: Yes, of course.

Mailland: The feeling in America is not mutual. Fred Turner who is a professor at Stanford recently stated in a French paper that Minitel is the running joke of Silicon Valley. <Hannaby laughs> And that seems to be fairly widely shared feeling. Why do you think that is?

Hannaby: I don't know. Maybe he didn't get any money out of it. That's why <laughter>.

Mailland: <laughs> So, are you saying in a way that Silicon Valley, when it started with the web, did not learn from Minitel? Are there things that you think--?

Hannaby: I think it's better that it didn't learn because the platform was kind of restrictive. It didn't permit any *fantaisie* [ingenuity] with the norm was used by the Minitel where you had to do things a certain way. Graphics were really hard to put on a Minitel screen. It was really-- the people had to learn a lot before being able to create a nice graphic on the Minitel, for example. So, I think the fact that the web platform was really open and let people do whatever they had in mind is a very good thing. Since the ecosystem was not present, if AT&T, for example, was able to give a terminal, specific terminal, I think maybe things would have been different and people would have used this terminal to connect to services. But well, it's a different country, it's a different economic system. So, things are completely different.

Mailland: But are there things in contrast that you think Internet entrepreneurs should learn from Minitel and haven't learned?

Hannaby: Technology-wise, you can always learn from what have been done on the platform because a lot of things, coding, implementing algorithms, and so on are kind of used on web servers because we can use kind of the same algorithms. Also with the apps, a lot of apps, were able to be ported to the web also.

So, yeah, on this, of course they can learn something. On the economic side, it's really completely different. There's nothing like that in the U.S., so I guess only the-- the only thing-- that was a problem for France because because of that, they didn't go through all the experience that took place here with the economic model that are using advertising and so on. So, that's the big difference.

Mailland: And do you feel, going on that, that Minitel might have impaired the development of the Internet in France?

Hannaby: Yeah, of course, yeah because all this money involved in these companies, it was big assets. So, it was difficult to move quickly to get rid of all these systems and to move to web platforms because there was no-- the *rentabilité* [profitability] was not there. There was not the same economic model. So, they didn't-- they were not able to shift to another model quickly.

Mailland: What do you think the most remarkable use of Minitel has been and/or of your service?

Hannaby: The most remarkable-- communication was for me the most remarkable. It was the way people were using it to communicate together because it had really special effect on them. It was a way of getting rid of their stress. So, for me, it was-- I think it was the most important thing, something that was able to connect people.

Weber: Can you fill in the sort of from Houston until now? What have you been--?

Hannaby: I left Houston in fact after 9/11 when-- I kind of left Houston after Enron, but I went back for a few times. And when 9/11 occurred, six months after, I decide to get back to France for a few months. And so, I ended up doing some work for Orange at that point. And after that, I came back to the Valley.

Weber: Because you wanted to come back here, or for the job, or both?

Hannaby: Well, I think I wanted to-- I thought I was going to come back to the U.S. I was not really sure. But I wanted to come back. So, at one point, I had this opportunity.

Weber: And I mean there are other Minitel pioneers in

Hannaby: In the Valley?

Weber: no, in Orange.

Hannaby: In Orange, of course, of course.

Weber: Is it through old connections that you met Georges [Nahon].

Hannaby: Yeah, because George [Nahon], in fact, was the-- if I didn't mention it, George was managing the telematics at PressinvestSo, I met him for that occasion, of course in the '90s. And he came a few times in our office at Canal 4 because he was showcasing services to international companies, because we had pretty decent systems. So, he wanted to prove that Minitel was a nice product to export.

Weber: So, it was because of him you worked for France [Telecom]?

Hannaby: Yeah, I got in touch with him at that point. And I think he offered me to do some job for Orange at that point, yes. It was Thierry Breton at the time that was managing the company, yes. So, I did something for the COMEX [Executive committee of Orange]. And it was kind of interesting.

Weber: And since then, what have you done here?

Hannaby: So, I've been working for Orange since then as Skunkworks Director. So, I can't tell you exactly what I'm doing because it's secret. But it's kind of working on some special projects on the side. And well, doing edgy stuff, mainly edgy stuff.

Weber: Is there any advice you would give-- oh go on.

Mailland: Before this one, is edgy a main theme of your career, edgy disruption?

Hannaby: I like this. Yeah, of course, I like disrupting. I like to think what will happen in the next ten years. And well, for example, if I can try something, for example, I would try to-- if I was the CEO of Apple, for example, I would go and try to push quantum computing because I'm sure that at one point, there will be no more physical networks or radio networks. And everything will be connected through quantum physics. So, they should try and go on this path.

Weber: Quantum entanglement. Well, Google is investing that way.

Hannaby: Yes, exactly. Google, absolutely, they bought something from the D-Wave company [D-Wave Systems, Inc.], of course.

Weber: Where do you think the-- where will the online world be, say, twenty years from now?

Hannaby: I think all will be on mobile of course. And I think that there will be no more mobiles anymore. It will be--

Weber: You mean no more desktop.

Hannaby: No more desktop, but no more phones. You will be, I guess, you will be kind of connected without a physical device, I guess. Maybe something will be implanted in your body or some kind of device connected to your brain that will let you interact immediately with anyone you want. Yeah, I'm sure. Twenty years is a very long time.

Weber: Quantum chat.

Hannaby: Quantum chat, I'm sure. Yeah, absolutely. People are already putting some NFC in their skin to be able to pay the cashier.

Weber: Yeah, I've read articles. You're not going to do that at Orange?

Hannaby: No, I don't think so.

Weber: What suggestions would you have for the young people, perhaps ones interested in--?

Hannaby: Be curious, be-- find your passion. As long as you have a passion, follow it. That's the only-- I think it's the most important thing. Have passion in life.

Weber: And if you don't have anything else, I'll just ask is there anything that you would like to add that you feel we--

Hannaby: No, nothing. I was really happy to participate and to be able, to be able to remember all these fun events and fun period in my life.

Weber: Well, thank you.

Hannaby: Thank you.

Mailland: Thank you very much.

Hannaby: Thank you.

Weber: Wonderful interview, thank you.

Hannaby: Thanks.

END OF INTERVIEW