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ABSTRACT

Starting in the 1980s the online world has seen two models: the French model, Minitel, and the American model, Internet. At the end of 1995 the Minitel network was the biggest and oldest online service with 7 million users and 20,000 service providers; one year later, the Internet arrived. Tomorrow's online model will need to be: as familiar to the general public as telephones or television; as natural as a public utility invoice; as easy to use as PC applications; transparent when connecting to the service; and as complete as a newspaper. Market trends see the development of new generation networks using the standard technologies but providing enhanced functions, open to everyone but giving extra services to registered users, and giving the information provider the possibility to run both public and private services on the same platform. After a discussion on users' technical requirements, this paper examines the future potential of the French online market. (AEF)

The generation gap: Minitel in the face of the Internet

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1. Introduction

1.1. Company presentation

Computer Answer Line (CAL) is a software company based in Lyon, specialised in enhanced online services and a member of the World Wide Web Consortium. CAL is the provider of SIAM technology and the technological leader in providing new generation French services.

1.2. History

Starting in the 1980s the online world has seen two models:

- the French model (Minitel), based on a 'dumb' terminal but with some strong advantages: wide free distribution, access to universal services (telephone directory);
- the American model (Internet) based on services dedicated to computer freaks. For a long time CompuServe had a reputation of an online service for computer scientists but with the strength of a large market enabling a financial success. In France, we may distinguish two periods after the initial launch and first period of growth:
  - From 1985 to 1990 the services provided became more and more professional, the number of users grew and the network infrastructure offered a wide range of services;
  - From 1990 to 1995 we saw a decline of the Minitel, mainly for three reasons: service providers (SPs), after the growth period, estimated that they were able to increase prices; Minitel's connotation of being expensive; and a technological breakdown as users had more and more PCs and the network speed did not evolve. All strategic errors for France Telecom (FT).

2. Situation in France and overseas

At the end of 1995 the Minitel network was the biggest and oldest online service with 7 million users and 20,000 service providers. One year later, the Internet rushed into this quiet but profitable world.

Why?

If we exclude the arrival of new online services (AOL, Europe Online, Infonie) which tried to attract users, we may consider that the 1996 big bang had two main reasons:

- people saw in the Internet the possibility of going beyond FT, so a large craze for this new world attracted users, and this feeling was emphasised by the fact that FT was a state owned company and did not jump into the private sector;
- FT itself, seeing these critics, wanted to make a strategic break and decided to invade the Internet world for its online evolution. The Minitel was forgotten and we lived in an amazing period where there were at least 20 projects for launching the best online service with the greatest payment solutions and the largest information provider. If we trusted them, the information providers would spend all their resources by uploading information on all the online platforms.

The situation is now more stable and we see three kinds of actors:

- the software and service companies: Internet service provider (ISPs), software companies (Web vendors) ...;
- the online world, mainly American (CompuServe, AOL) and some French (Infonie);
- FT, which acts as an ISP as well as an online company (Wanadoo) and the network provider (its original job).

Facing these actors are the information providers (Ips). During this period, nobody moved and the main question was 'where should I go?'.

This seems perhaps a stupid question to you, but you have to know that some IPs have a large computer investment in their Minitel service with large technical teams of engineers and online editors. The economical model of these companies was based on the 'kiosk'. For those who never studied the French market, this means you connect to an online service without any identification and registration, and one month later on your telephone bill you receive just one line between many that is your online invoice. We call this 'painless billing'.

If we take a poll today, the only thing people are sure of is the technological choice for information. We mean by this that they are quite certain that they need to use the HTML standard for their information content in order to prepare the next five year evolution. Another question rapidly pointed out: of this 7 billion French Francs (nearly £1 billion), what about the revenues? Why these questions? Because they are used to earning money with their service and they saw the spectrum of a free information world where they need to justify the information price and set up sophisticated mechanisms for user invoices. So, after this big media bang, the next step was nobody's move.

And the users? Nobody seems to pay attention to the users. Are they equipped with up-to-date multimedia equipment? Will they agree to subscribe to two or three online services and ISPs? Are they well equipped or afraid of the new economic models where they have to show their credit cards at each page?

Take a quick look at the figures in June 1996: FT's online service Wanadoo announced 17,000 users; Infonie (the French based online service from Infogrames) did not say anything (unofficial figures of 2500 subscribers); no information from AOL; and CompuServe announced 30,000 users. If we had the ISPs we could reach between 100,000 and 150,000 users. Not enough.

The first answer to users' questions comes from Minitel. After several years of stagnation or regression, Minitel traffic grew during the first quarter of 1996 and it seems that Internet mediatisation had a positive impact on Minitel use. So, is there competition between Minitel services and Internet services? The main and largest ISPs say 'No'. They estimate that they have at least five years of potential business on the Minitel and they are taking time to prepare the next generation services.

I think that either users are still not well equipped or they are afraid of the new economic models where they have to show their credit cards at each page. Take a look at the other side of the Rhine River. Deutsche Telekom (DT) had a videotex network called 'BTX' based on old technology. This network, close to Minitel principles but with more constraints, has never been as successful as Minitel. They decided two years ago to move to a modern architecture. What was the result at the beginning of 1996: more than 5000 services available and 1 million subscribers.

What are the keys of this success:

- the technology development was realised by a work group involving IPs, technology providers and DT;
- DT helped the development of the first services;
- DT engaged itself in promoting the network, distributing a client package;
- there was in the package an open door to the Internet.

In summary, we may say that they have applied the Minitel principles to a new technology. We saw the same success in Denmark, where the telco: TeleDenmark launched a similar product called DIATEL with our SIAM technology.

So, in this liberalised business, is there a place for a public utility service and old fashioned centralised networks? Our answer is 'Yes!'

3. The new online model

Ten years of Minitel experience has modified the Internet business in France and some easy to use model and technology will modify the market. Who will suffer, who will gain and when? Last Spring, the annual World Wide Web conference was held in Paris. We saw a lot of American Internet gurus coming to us and asking: 'I want to see a Minitel, what does it look like? How do you use it?' and we're sure that SPs who will win in this business will take some good tips from the old fashioned terminal.

Why? If I compare Internet development in the UK and France I see one main difference.

- You, in the UK go into this new business without any ulterior motive: you consider the Web as a new media and begin to see potential application development.
- We, in France, are sure of this business (in size it's as important as the TV business) but don't know how to advance with it, so, the solution is in between.

Tomorrow's online model will need to be:

- as familiar to the general public as phone or TV;
- as natural as a public utility invoice;
- as easy to use as your PC applications;
- transparent when connecting to the service;
- and of course as complete as a newspaper.

Market trends see the development of new generation networks:

- using the standard technologies but providing enhanced functions;

- open to everybody but giving extra services to registered users;
- giving the information provider the possibility to run both public and private services on the same platform.

The current actors, both telcos (France Telecom, Telfonica ...) and private (AOL, MSN ...), have a strategy based on attracting information providers in exclusive partnerships, which has three negative effects:

- for the information provider who is too closely linked to the network provider, in terms of the subscriber (he needs to trust in the Online service for its figures) as well as technology;
- for the users who may have to subscribe to a large number of online services to get the information looked for;
- these new online services are mainly targeted to a large public and do not give any room to small and medium enterprise services.

Based on these facts and on a need for information providers to launch independent online services, there is a need for a national and European network of online services. Who is likely to win tomorrow?

- not the world online services (AOL, CompuServe ...): their present difficulties in staying in the technological race are not a positive sign. But more probably;
- telcos (FT, Telefonica ...) as they are already in touch with a large public. They will need to separate their public utility role from their private goals;
- and also national online services if they reach a critical size.

4. And what about the users' technical requirements?

For quite a long time, all the talk about online has been concentrated on Internet and more especially on the World Wide Web. The Internet network is widely used worldwide and is growing exponentially. The Internet is the global transport network used by numerous applications and protocols (telnet, FTP, SMTP, SNMP, gopher, and so on), including the WWW HTTP/HTML transport protocols.

The WWW world consists of documents linked by hypertext links. To follow a link, the user clicks with a mouse on a highlighted word in the current document which causes the linked-to document to be retrieved and displayed. All documents are named using global addresses (called Universal Resource Locators — URL) including the access protocol used to retrieve the document and the document location in a way significant for the access protocol (for example FTP address). The system is really a worldwide one as any document could reference any other, even if stored on another system located at the other end of the world. A URL could point to a script and in this case the server will send back to the client the output of the script and not the script content: this mechanism allows the implementation simple of processing.

We don't question the Internet as the network but we think that currently there is no technology on the Net which bring an answer to the ease of use reached by old technologies both in information browsing and in service marketing. What about these nice advertisement pages with an awful address like 'http://www.alpha-beta.tm.fr/product/new.html' for getting information?

The HTML standard we find on the Web is only a presentation model and we need more, especially in terms of applications and security. Moreover, we need applications with little intelligence on the 'client' but piloted by the server to help the novice end-user.

The documents could be created very easily using HTML (Hypertext Markup Language): they are created in standard ASCII text including simple tags to specify the document title, paragraph boundaries, headings of several levels, highlighting, lists and links to other documents.

The HTTP communication protocol between the client and the server is very simple: the client establishes a connection with the server and sends a request containing the word GET followed by the name (partial URL) of the document to be retrieved. The server responds with the document contents and then immediately closes the session.

The difference between the two protocols — the new multimedia interactive one (SIAM) and HTTP/HTML — is the session maintaining the link between the client and the server.

A Web browser only retrieves a document to display (or sends a document to the server) and closes the communication. When the user clicks on another word to retrieve another document, a new communication is temporarily established for the time needed to retrieve the document.

What appears to the user to be a single continuous 'session' is in fact a succession of corresponding responses. Therefore, the WWW servers do not keep any session context and are not always well suited to implement high value added applications best supported by a bi-directional data exchange between the client and server during a single session.

It is then clear that the Web and the browsers (such as Mosaic or Netscape) are performing tools, easy to use, but they are not always well suited to the creation of high value added interactive applications that require a continuous session between the client and server such as could be implemented with SIAM — a multi-windowing, object oriented interface. By the way, Internet experts are well informed of these Web limitations and are currently trying to find other protocols to fill the gap between the capabilities of the Web and the user requirements.

Various extensions of HTTP and HTML are presently being studied in order to extend the current capabilities of the Web. For example, the Sun Java language allows the client software to run local 'operative objects' written in a machine-independent p-code. The HTTP-NG protocol has been designed to offer a session control protocol allowing a single session to be maintained between the client and the server. The latest HTTP 1.1 draft has also included a Connection Keep-alive parameter, enabling it to request a persistent connection. All these proposals keep the request/response paradigm used up to now. From the point of view of Internet experts supporting this improvement, it seems the main reason behind it is mainly to solve the performance problems caused by the setup of a new connection for every HTTP request, or to implement more easily improved security mechanisms (and not mainly to take advantage of the possibility to implement more easily complex data processing applications).The answer relies partly on the SIAM technology which has for five years now demonstrated its capabilities in answering all the these questions.

The first connection on the Web is not very easy for a beginner and once connected it is not so easy to find something without any help or without a lot of time. We think that users (the public at large, not the computer freaks) haven't the time at their disposal and it's a hindrance in the use of the Net technology. (In October 1995 there were eight million pages on the Web: six months later in April 1996 there were 22 million pages.) It's becoming more and more complicated to find interesting information and the creation of the enhanced Web index proves it.

Is the Network Computer (NC) an answer to this? Take a look at your living room. What do we see? A TV, perhaps two, with one satellite decoder; your main telephone and perhaps your mobile with the battery for charging it; more and more probably your computer or your game station; and so on. Unfortunately you have no room for your network computer except if you convince your family to remove the guest armchair!

Coming back to business. In France, FT succeeded in placing a dumb terminal in each house because it was small and mainly free. If tomorrow you have to buy computer equipment and if you have the choice between a limited terminal and a powerful PC with multimedia extensions for £100 more, I think that 90% of you will choose the second solution.

The way for NCs to succeed is to be sponsored by telcos as FT did in 1980. It could be a good reason as the first beneficiary of NCs may be the telcos themselves due to the telecommunication consumption, but none of these telcos seems to be ready to reproduce large charity programmes, as in the past.

The latest trends seem to promise a great market for NCs inside the company because of the need for the majority of employees for only accessing the databases, filling in forms or producing documents. As the Internet mania turns into intranet, this is perhaps the right answer for the NC's future.

So, we need to wait for public equipment. This equipment must be cheap and have communication facilities (I mean not dialling with a 14,400 baud modem).

The first point: in June 1996 there was a press release from ACER for a cheap PC based on one-year-old technology. A lot of brilliant analysts laughed and claimed that it would fail. Is this not the solution? Does a family need a Pentium 250 MHz with 2 Gb disk? You can keep years of bank statements. The solution is perhaps in between an NC and a complete and modern PC: a lighter PC with enough disk space, a processor which is not the latest Intel version and a first generation CD-ROM.

Perhaps this is not a brilliant idea for computer manufacturers as they always want to sell the latest model, but if we take a look at the TV market we do not see this permanent technological race. We could also imagine that we will find some second-hand salesmen as we see for cars and this might not be a marginal market.

On the second point, communications, we'll have to wait for the generalisation of 'cable' plugs in every house. This is the only chance to combine high bandwidth and low price, when all home owners will have the same plug for TV and computer and will subscribe to its online service for less than £10 per month. In conclusion, if we want to create a home market, let's turn our mind to it and not to a technological market.

5. Think positive

So, everybody in France agrees on the fact that the business is in front of us. But, we already have a lot of lessons from this first period.

The first one is the rallying to a universal standard. The French are well known for their engineer mentality, wanting to invent all the technologies themselves. So now, we can forget the proprietary modems, the FT agreement, the 'not invented here' concept. We're in the world.

The second is what we can call the 'public service of the Internet'. French IPs were used to sell information, even marketing and sales information and even when it is from a governmental or public service organisation.

Will you accept to pay per view for advertisements on your TV? For an added value information like movies, yes, but not for marketing information like the price of your next car. After a golden period, people have the feeling that the Minitel was too expensive and the Internet arrives to rush into this. So we saw last year a lot of new services emerging on the Internet. They can be listed in three categories:

- IPs with added value information who are waiting for a payment solution;
- IPs with general information (public advertisements, movies, agenda ...);
- public service IPs.

The last kind have created free services (city information, tourist services ...) and the second kind have turned their mind to a new economical model where they sell Internet advertisements. This incidentally forces them to

build faultless services for attracting users like the TV channels.

And the winner is the user.

6. Conclusion

In today's business globalisation, will the French touch succeed in exporting its know-how, and what are the requirements for foreign companies to enter into this 10 billion Franc market?

On the first point, I think that the cultural exception is one key point for an online success, so if we exclude the large enough companies, wherever they come from (your side or our side of the Channel), to consider each national market as an entire and independent market, it will be difficult for French IPs to export their know-how (they are shy exporters) and for foreign companies to come in (the French cultural exception). Most opportunities will probably be on the IT side because of the capabilities of French companies to create and sell software solutions for online services, since they have ten years' experience in running services, providing tools for information managers, designing user interfaces ... For you, your chance will be advantageous to enter this large established market, taking into account our special nature.

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