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INNOVATIONS AND THE MARKET : THE COMMUNICATING ORGANISER

by

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Report by Lucien Claes
Translation by Rachel Marlin

Overview

By deploying 30 % of its employees in Research and Development (R&D), Sagem is an unusual organization in the development of new products. Furthermore, in 2001 it was the fourth largest French company in terms of numbers of patents registered. Some of its innovations, like inertial measurement units, or more recently, systems for identifying fingerprints, have acquired new markets. However, there are examples where innovative products, despite being promising and greeted as such by the professional media, have not been as successful commercially as had been hoped This was so in the case of the communicating Personal Digital Assistant (PDA), launched in 2001 and voted product of the year in seventeen countries. In spite of this, it was very hard to sell the tens of thousands which had been produced. Romain Waller describes the circumstances surrounding the launch of the PDA, and attempts to explain many of the reasons for its fall in sales.

TALK : Romain WALLER

I started working for Sagem having previously been in charge of the training programme for engineering students of the *Corps des mines.* My first job at Sagem concerned the GSM (Global System for Mobiles, the current standard for mobile telephones) network. Following this, I worked on decoders for pay .as you watch television. I then spent a further two years in the mobile telephone department which includes the communicating organiser (a mobile telephone with all the functions of a personal organiser). I am now in charge of cordless telephones for domestic use.

The story

Our communications organiser was not as successful as we had hoped. There was a press release about the product in November 2000, at the time of an alliance between Sagem and Microsoft. In June 2001, the product was launched with a price-tag of one thousand Euros. In all the countries concerned, the press accompanied this launch with articles which were universally favourable. In spite of this, sales did not take off. In February 2002, we started to sell off the product at six hundred Euros, and six months later, we cleared the rest of the stock. There was a huge difference between what the press said ('this is a fantastic product') and the product's lack of commercial success.

Our product makes me think of Concorde. It is the success of a particular image. Sagem telephones never made the front page of the newspapers and yet the international press made reference to our communicating PDA 1,700 times. It is also a technical success. It was not easy to put a small computer and a GSM side-by-side into the same case, making sure that the functioning of each component should not disrupt the functioning of the other. This new know-how ultimately proved to be very useful in the subsequent design of other products.

Sagem, the fourth largest patent holder in France in 2001, is accustomed to breaking new ground. Approximately four thousand of the twelve thousand employees work in the R&D department. It is relatively simple to decide whether to launch a new product. The business units are very vertical and if one of them is sufficiently profitable to be able to finance a project which on paper seems possible, then in general the project can go ahead. Each business unit is in charge of choosing and developing its own projects in the knowledge that among all those which are launched, only some will succeed but eventually the company will break as a whole.

The decision to launch the PDA

The decision to launch the PDA was taken in 2000 at the height of the telecom and Internet booms. Sales projections were very encouraging. As far as GSM telephones were concerned, they showed an increase which was almost as exponential as the growth in sales in previous years. As for the personal organisers, market forecasters still predicted in June 2002 that there would be a four-fold increase in sales from 2002 to 2003. Growth in 2000 was even predicted higher than this.

Up until 2000, telephone manufacturers did their utmost to reduce the size of mobile telephones which were considered to be too cumbersome. However, from 2000 onwards, clients started complaining that they were difficult to find in pockets or handbags. The race to make objects as small as possible therefore slowed down and miniaturisation became less important, especially since the capacity of the processor which equips mobile telephones is only partly used for communication functions. The personal organiser manufacturers, such as Microsoft and Compaq, also had a large capacity for data processing and they envisaged adding such a function to their product. Since the operators' networks were completely operational, including for the transmission of data, the way was paved for the arrival of the communications organiser, the real PDA. It was an object which ought to have been successful. We were not sure exactly

where we would be positioned on the growth curve. The only real question we asked ourselves was whether we were going to sell one hundred thousand, three hundred thousand or a million PDAs.

The PDA

What is the communicating PDA ? On the outside, there is a large touch-sensitive screen below which are the keys which are easily accessible. One can record and listen to music with headphones. Smart cards can be added. It is a telephone with all the state-of-the-art functions : a complete PDA with Microsoft Word, Excel and so on, and includes the functions of the WAP (Wireless Application Protocol) which was being developed on very small GSM screens. Additionally our product is very straightforward to use. For example, the touch-sensitive screen makes it very easy to type SMS messages (Short Message Service : written messages, sent to a mobile telephone) unlike ordinary mobile telephone touch-pads, where one usually has to press the same key several times to get a single letter. One can send and receive emails. In short, there are a number of advantages.

Face to face with the competition

At its launch, the competitors of the PDA were
- a Compaq product, a real PDA with colour screen, to which one could add a GSM module, but impossible to fit into a pocket ;
- a Nokia colour product, a little more expensive and quite cumbersome ;
- and finally, a Mitsubishi product which was launched at the same time and cost the same but which was a little slower.

Logically, one might therefore expect things to go well since we were relatively well placed with regards to the competition in this particular field, whose market potential we did not know. However, the “colour” products were starting to arrive on the market and people wanted colour in their PDAs. There were also PDAs which were much cheaper, but admittedly they did not have the communications functions.

The distribution circuits

One can sell mobile telephones
- either directly through a distributor (shops such as Darty, FNAC, and so on.) who buys them to sell to customers ;
- or by selling to an operator, who installs the parameters of his network into the product, and then sells it to a distributor at a knockdown price. This is why for some time now there have been GSM terminals which are very much cheaper than the normal product price. The operator gets back the difference between the selling price to the distributor and the cost price by charging clients a rental fee which covers this amount.

Sales of our PDAs to operators were not good. We had thought operators would be very enthusiastic about our product which offered more functions than a simple telephone and which therefore would be profitable for them and which they would sell very cheaply to the distributor. However, when our product was launched in 2001, the economic situation was catastrophic for the operators. They had been weighed down by stocks at the end of 2000 and their first priority was to free up some cash. Their financial managers refused to allow them to buy mobiles unless they were certain they would be able to sell them quickly. Furthermore, technically speaking, since the GPRS (General Packet Radio System) was in the process of being developed, they did not want to launch products which were potentially incompatible with products they were going to offer a few months later on their network.

On the other hand, direct sales to distributors were a success, at least in the beginning. Three thousand PDAs were sold during the first month. This was a good start since we were hoping to sell a total of forty thousand units in the first ten months. The following month we only sold two thousand five hundred. We thought it was perhaps a minor setback before really taking off, but

in the next month only two thousand units were sold and less than a thousand in the subsequent months. We soon understood that it was not simply a case of getting into our stride. The distributors had thought, like the media, that the product was going to sell well. Therefore, they had taken the risk of building up stocks and subsequently had a hard time trying to sell them off. The real problem was with the consumer.

A difficult sell

We noticed that there was a problem in the shops. For example, the FNAC shop, which sells both PDAs and GSM telephonic products, did not know where to position our product. In some FNAC shops, it was together with the GSMs ; in others, with the other PDAs. The computer salesman did not know how to sell the GSM side of the product and likewise, the GSM expert could not explain the computer software which the product contained. There were two different salesmen, in two different places in the same shop and this did not work. This is why a dedicated section with specialised sales personnel was created in some shops.

We had hoped to sell our product in conjunction with existing corporate software. In fact, with the necessary software, it was possible to hook up with company data bases, to use their email, to have one's data constantly synchronised with company headquarters, and so on. However, changes were necessary in each company in order to stay within the data protection regulations. Therefore, those in charge of the IT departments slowed down to avoid disrupting their systems, despite users wanting to access the product. Again, we came across a conflict of interests. Some computer developments of this kind were made but they remained marginal.

The last mistake we made was that we were almost certain that our clients, for the most part, were people who were going to be first-time PDA and GSM users, thereby making the most of this superb opportunity. Rather than having a device in each pocket and having to make transfers between the two, they would have it all in one. However, people who were able to afford a product which was worth one thousand Euros were most likely to possess already a GSM and a PDA and perhaps expected a better service from them, but they did not necessarily want to change both at once. This created an additional problem for sales.

In breaking new ground, the Sagem method consists of exploring existing software, and trying to create synergies between different areas. The PDA is a case in point. However, one runs the risk of finding oneself in the overlapping area of several markets, and even if these markets are very large, one cannot know in advance the size of this overlap.

Other border-line cases

There were other interesting developments but their success was limited. The dual DECT (Digital Enhanced Cordless Telephony) and GSM mode is an example.

Take the following example. Out and about, you receive a GSM call on your mobile telephone. At home, you receive a call on the local fixed telephone line. If you have the dual DECT/GSM mode, you will receive both calls on the same mobile telephone. Therefore, you only need one telephone which behaves like a cordless telephone operating on your fixed telephone when you are at home, and like a GSM terminal if you are elsewhere. Sales of this product were much greater than those of the PDA because the operators wanted it, but it did not really work either. The difficulty was to determine the amount of the subsidy due to operators for the fixed telephone and for the mobile telephone. In order to reach an agreement, one usually had to have discussions with the presidents of the original operators which did not make matters any easier.

Necessary conditions

One should not rush to the conclusion that the existence of different functions necessarily means that there will be a drop in sales. There are also hybrids which succeed.

A hi-fi system is a good example. The combination of a CD player, a radio, and a cassette player sells well. A television with an integrated video recorder is also a product which has a relatively long life span. The 'multifunction' all-in-one unit which incorporates a scanner, a printer, a copier, and may also have a fax machine is very popular.

My interpretation is that if these different units are sold in the same department of a shop, then they sell. The same salesman, who is capable of selling them separately, is also capable of selling them together. On the other hand, if these products are sold in different sections of the same shop, then the result will be a disaster.

It is best to anticipate

Let us go back to 2000. Suppose that we had wanted to assess the likelihood of sales of the PDA in 2001 at a certain price. We ask a consumer : he says that it is a good product and that he will buy one. He may intend to buy it, but it would be unusual if he purchased it in the end. In fact, it is very difficult to test price elasticity on demand when the consumer lacks a comparable point of reference. This is an area where we have subsequently tried to become more efficient, but we are not sure that we will succeed with very innovative products.

When one creates a market like this one, one has to send out "evangelists" : this is what Microsoft calls them. These are people who travel around the distribution networks explaining the benefits of such products. However, educating a market takes a long time. This is not necessarily the easiest solution.

When it works at last

After Concorde, came the Airbus. Likewise, after the PDA, other products which might have been considered risky were launched and sold well. I do not really know how to explain why a product works well at one time and not at another. In March 2002, we announced the arrival of the first telephones with colour screens. In June 2002, the products started to arrive on the market and in December 2002 (luckily for us, the price remained stable), nearly one million telephones were sold. In the end what is the difference between this telephone and the communicating PDA we launched before ? Why should it work this time ?

Before the arrival of this product, we had the 3000 Series, personalised with a design by each operator (Bouygues, Orange, and SFR). The operators had asked us to suggest changeable and personalised designs but this forced them to create stocks and now they are backtracking to create products which are less personalised and more standardised. In 2001, the GSM market collapsed, and the products from the 3000 Series which we had thought were top-of-the-range were in the process of gradually becoming bottom-of-the-range where profit margins shrink to virtually nothing. This product alone can no longer help the company to survive financially.

There are few technological breakthroughs. The GPRS (General pack and radio service) does not thrill the public. Having said that, at the same time that the GPRS arrived, Samsung completely abandoned its bottom-of-the-range products, and its 'clam' (a telephone which closes like a shell) is proving to be very successful. Sagem cannot not afford this type of strategy which demands very large and significant investments in advertising. Nokia annually spends several hundreds of millions of Euros in advertising. We do not have the necessary capacity to make such investments. In order to make money, we are constantly trying to increase our profit margin. This helps us to improve our product quality, but not too much, as we are reducing some functions from the top-of-the-range to make them middle-of-the-range. This allows us to sell at an intermediate price which is sufficiently attractive that we do not have to invest too much in advertising.

One of the difficulties consists of testing the price elasticity with regards to the model. We embarked on approaches which were not familiar to us, such as seeing if consumers would react with respect to the price if we changed certain concepts. There were rather strong reactions to what we had hitherto considered to be details, like the casing. For the same mobile telephone, the

design alone is capable of making the price vary from fifty Euros to two hundred Euros on average, in other words 25 % of the price is related to the design. These observations are particularly pertinent when we attach vital importance to our profit margins. Finally, the consumer is most interested in the price he has to pay for a given design. The functions offered are much less important. A simple business plan written on a scrap of paper is no longer enough in these troubled times. We should develop methods in order to identify real consumer expectations so that we do not find ourselves lumbered with products which generate laudatory articles in the press, arouse irrational hopes of sales, and in the end produce pathetic turnovers.

DISCUSSION

Question : *We can laugh at the Sagem mathematicians who do not have a feel for the market but, in this kind of commercial failure, there are others who have distinguished themselves. The Ford Edsel remains a legend in marketing. If Henry Ford named this 'fabulous' project after his eldest son, then it was an indication that he believed in it. His best marketing teams designed a dream car for young senior executives who had recently been promoted. They sold just four of them ! As for the Twingo, I have been told that its target was the young urban couple, a bit bohemian and under thirty years old. In fact, its greatest success has been with sixty-year-old grandmothers. I mention all this to demonstrate that the people at Sagem are far from being the only ones to have failed in this area.*

In any case, one has to applaud the decision of one of their project managers to agree to come here and explain why one of their products did not have the desired results. Naturally, this is not as gratifying as praising a success, but in terms of trying to learn from one's mistakes, the exercise is particularly fruitful. Thank you, then, Romain Waller, for your remarkable talk.

Technical difficulties

Q. : *What were the main technical problems ?*

Romain Waller : Problems to do with electromagnetic interference between the two sets of components had to be resolved, but it was the software which was the most problematic. There were plenty of problems associated with integrating the two large operating systems of Microsoft and GSM.

Q. : *What was Microsoft's reaction to the failure of this product? Have you thought of trying the US market ?*

R. W. : In our sector, it was not long before other people embarked on partnerships with Microsoft. As a result, the fact that our product was not as successful as had been hoped did not pose a major problem for them. As for the American market, we did not know how to attack it because wavebands are not the same in the US as in Europe. It would have meant changing our product to these wavebands which would not have been easy, from a technical point of view.

Positive results ?

Q. : *Nevertheless, did this product have some positive results ?*

R. W. : Thanks to this product, which proved to be very popular with the press, the public noticed that we placed ourselves at the top-of-the-range. Furthermore, since we were able to test it, the distributors were able to build up a positive image of our brand, and this encouraged sales of our other products. In fact, 50 % of the consumers tend to trust the distributor regarding the choice of model which they will buy.

Knowing one's client

Q. : *In the food-processing industry, when it is a matter of launching a new product, knowing one's market and one's client is paramount. What is the golden rule at Sagem ?*

R. W. : In 2000, we did not know who the consumer was or what he was like, simply that the potential uptake was exponential, there was a place in the market for everyone and it was unnecessary to carry out market research studies. Additionally, our clients were essentially the operators who had carried out their own market surveys and who provided us with the details of what they expected from us. Having met about ten operators, we had a good idea of the range of requirements and this allowed us to design a basic telephone which met all these demands. The only thing left to do was to make it more personalised to suit each operator. However, with time, the market changed and this made us reconsider the situation. We are moving forward by following the requirements of the consumer, which allows us to develop our sales efficiently regarding our distributors.

An unclassifiable product ?

Q. : *You said that your hybrid product (organiser and telephone) posed some sales problems, because from some points of view it was unclassifiable. Did you not try to present it as the first example of a new category of product ?*

R. W. : We took part in organised activities lasting several days which concerned the PDA exclusively, in very busy sales points, with specially trained salesmen and in the best possible conditions which were favourable for our product. The results still remained particularly disappointing.

Q. : *You were not the only ones in the market with this type of product. Did your competitors do better than you did ?*

R. W. : It seems to me that the situation at Mitsubishi was worse than ours. They sold less than us. At Nokia, even though the hybrid telephone sold relatively better, it remained a niche product and this did not really satisfy its investors. Compaq was quite successful in selling its colour PDA, but did not sell the GSM part which was only an accessory nearly as well. The category therefore remained generally unclassifiable.

Innovation pushes the market

Q. : *We are talking about processes which have been developed as a result of innovation, an event which tends to break up the market categories and therefore provokes resistance from those who make their living from these categories. The only strategy left to the innovator is like the lob in tennis, going over their heads. The classic example of Tetra Pak is a good one : those in the dairy industry, whose corporation is the most traditional in the food processing sector, used glass to package their products and refused to use any other materials. The promoters of Tetra Pak (the packaging in cardboard which has since been widely adopted) went directly to the milk distributors in order to carry out studies especially with female consumers and then they came back and showed the dairies the advantages and the value of this new packaging.*

The innovator should not wait for his direct client to give him the green light. There is a connection between the real users and the "evangelists" who ultimately make the market categories of tomorrow.

Q. : *To continue with this example, a previous talk here about the Michelin Pax system [1] underlined the importance of the work of promoters to gauge the concerns of the consumer with regards to the Pax product and it was only after being equipped with arguments and partnerships that they were really able to develop it.*

[1] Thierry Sortais, *The Pax Project, or how Michelin reinvented the wheel*, Les Annales de l'École de Paris, vol. VIII.

Q. : *One should also emphasise the fact that in order to encourage the development of the Pax system, Michelin gave the licence to its competitors.*

Commercial illusions

Q. : *It seems to me that the communicating PDA is an example of the more general phenomenon of commercial illusions in the hi-tech industry. Here are four examples which have been unquestionably successful : the Minitel, the Internet, the mobile telephone and the digital camera. But we will try to make more successful products by adding gadgets to the list, by improving performances, by increasing the number of functions (for example, a mobile telephone which also takes digital photos). It will almost certainly be a fiasco. Why ? Because it is not the innovation which we are buying, but the service which accompanies it. If the innovation does not bring with it a big step forward in terms of the service given, it is unlikely to be really successful.*

Complexity and ease of use

Q. : *You seem to have set the tone for the launch of this type of hybrid terminal on the market, since despite the near-failure of the communicating PDA and its direct competitors, Orange has just launched a similar product, but with a colour screen as well. Unfortunately it is still very complicated to use. Might we perhaps one day see a terminal which is just as efficient but easier to use ?*

R. W. : As it has just been emphasised, the success of this new product will firstly depend on the advantages brought by the big colour screen. You say that this terminal is still complicated to use. I agree that the PDA communication organiser was, but no more so than the traditional PDA to which we wanted to add the communication function. What you suggest implies changing the target, in other words aiming for the consumer market. Therefore, one has to be in a position to lower the price while at the same time being able to justify the inevitable additional costs with respect to a normal telephone. Making the product easier to use is not that straightforward. We are actively working on this not only with technicians, but also with ergonomists.

Q. : *You should also ask stupid users.*

R. W. : The problem is that a stupid user ‘deteriorates’ quickly and soon becomes intelligent. There has to be a frequent turnover of such users.

Q. : *It is exactly this view of the stupid user with which I do not agree. There is too much of a tendency in the industry to transform skilled workers into unskilled workers because their knowledge is entrusted to machines. An innovative movement increasingly helps the user. Soon the driver of a car will not have very much to do. This vision of progress tends to produce a rather sad result, whereas the opposite is perfectly feasible. Clearly, we take a risk by developing products which require that for proper use one has to be competent. Having said that, when Mr. Sax invented the saxophone, Charlie Parker had not yet been born and jazz did not exist. We should take care not to reduce innovation to a simple integration of acquired skills into technical objects.*

R. W. : I should add that a product which is difficult to use because it requires specific skills runs the risk of creating an unbearable number of returns after purchase, in particular in England where the policy is ‘satisfaction or your money back’. If the ease of use is an advantage for people who do not want to over-invest, one runs the risk of disappointing competent users who want to exploit everything the product has to offer to maximum efficiency. This presupposes that they are also given this option.

Making the project portfolio profitable

Q. : *Other talks were given here by Vincent Chapel[2] about risky products whose life cycle is very short. In this context, where the idea of failure is hard to accept, I think that one should not try and handle projects as one-offs, but, rather like a demographer, deal with the whole project portfolio. Researchers at the CGS of the École des Mines talk about a "breeding ground". Sylvain Lenfle[3], taking the example of Usinor, studied a way of project management in which the whole thing leads to a division of products which makes cash available if they succeed, and also allows people to learn and therefore progress, even if the projects fail. Anyone who wants to eliminate the element of risk from any product should leave the business. Do you have this kind of demographic management at Sagem, where the criterion for evaluating management performance of the innovation is not, as Sylvain Lenfle suggests, adding up all the attempts which have failed, but have a portfolio of projects which have a increasing return on investments ?*

R. W. : We cannot talk about failure inasmuch as we have not sold anything or learnt anything through our experience with the communicating PDA. In particular, we have made advances with respect to integration. Having said this, we do not manage a portfolio of products, but rather R&D teams, and this allows us to capitalise on experiences to the advantage of subsequent developments.

For this type of product, whose life cycle is very short, we cannot effectively eliminate the risks. If we had to take all the precautions necessary to insure the complete suitability of a product in the market at the time of its launch, the additional time required would be such that the product would most likely be already outdated when it was ready to be launched. In other words, we do not have the time to correct a product.

Presentation of the speaker :

Romain Waller is an engineer (graduate of the *École des Mines*). He has been in charge of the department for cordless terminals at Sagem since March 2002.

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[2] Vincent Chapel, *Growth through intensive innovation : the Tefal model*, Les Annales de l'École de Paris, vol. V ; *Avanti : systematic innovation and design in a small to medium-sized company,* Les Annales de l'École de Paris, vol. VII ; *Archilab or innovation by different uses*, Resources Technological and innovation seminar, October 2002.

[3] *Competition by innovation and design organisation in industries in the primary stages of production : the case of Usinor*, thesis in management science, Université de Marne-La-Vallée, January 2001.