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THE LOGAN : RENAULT'S ACCIDENTAL SUCCESS ?

by

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Overview

The success of Renault's Logan is intriguing. How has this iconic company reacted to pressure to 'stay French' ? Is Renault going down a dead end at a time when people say that European car manufacturers should aim for the top-of-the-range where the cost differentials of the labour force have less influence ? Is this not a case of 'mistaken success' which is likely to be short-lived ? One could argue that the Entry Programme is profitable and innovative even though this may seem paradoxical for low cost cars, and that Renault has no competition in the lower priced car market. Has the company found an original way of bypassing the saturated developed world markets by relying on the growth of the middle classes in developing countries ? Is this not the precursor of a revolution similar to that which was introduced by Ford in the 20th century, or the 'low cost' airline travel revolution ? If this is the case, then this might raise questions regarding preconceived ideas about the car industry.

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TALK : Christophe Midler

The title of this talk underlines the conflicts of opinion that surrounded the breakthrough innovation of the Logan. On one hand, it may be seen as a success story on a global scale which is quite rare in France and is a cause for celebration. On the other hand, this success turns some preconceived ideas on their heads, and has led to some confusion. It is therefore important to ask the question '*Should the Logan's success be applauded*?' I will answer this question with reference to the book that I wrote with Bernard Jullien and Yannick Lung entitled 'The Logan Epic' (pub. Dunod, 2013). I shall begin by describing the reasons why the Logan was innovative.

The Logan : a breakthrough innovation

At various meetings I often hear economists and managers (especially Germans) question whether the Logan was an innovative car. This opinion is based on a naïve idea of innovation, defined as an accumulation of sophisticated technologies. Breakthrough innovation takes place when design systems and activities are destabilised and begin to function in a different way. The Logan illustrates this for a number of reasons.

The process of international marketing

The Logan was unusual because it broke away from a purely European market and became more international. Previously, like many of its rivals, Renault manufactured cars for the European market and subsequently tried to sell its models to countries outside Europe. The Logan approach, initiated by Louis Schweitzer (the former president of Renault), was to target customers in developing countries and to manufacture cars specifically for them, rather than by trying to sell them only Western Europ targeted cars. The aim was for Renault to progress from an essentially European company to that of a global company.

Tackling the market from the bottom up

The main economic model is the result of innovating top-of-the-range cars which positively reflect the manufacturer's brand image, and then applying some of these innovations to the rest of the range. The second strategic breakthrough introduced by the Logan consisted of tackling the market starting at the bottom, and moving up the brand range by enhancing the product with 'add-ons' or options which are available to the client and which have been sought after by the client. This is what Henry Ford did at the beginning of the 20th century.

A feat of automotive engineering

The third breakthrough innovation was to manufacture a profitable, 'real' car with a sale price of 5,000 Euros. This was a real challenge, and meant that production costs had to be lowered by about 50 % compared to a car which was already manufactured in a 'low cost' country, for example the Clio, intended for export and made in Turkey.

The Logan represents a truly amazing feat of engineering, and it inevitably called into question the standards of the profession. Even the smallest parts were fashioned and redesigned to fit the 'design to cost' process initiated by Yves Dubreil when he managed the Twingo design team. In the case of some features of the car, there was no question of compromise : for example the suspension system which was designed to cope with road surfaces which were rougher than in Europe. Other parts were subjected to painstaking work so that they were made to be 'just necessary'. In summary, the Logan has three times fewer parts than any other car in an equivalent range.

There were also innovative measures to reduce investments, for example by encouraging the purchase of existing components.

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Furthermore, the first Logans were assembled with a very low level of automation. The Pitesti factory in Romania, where the Logan was made, had only ten robots when the car was launched.

In order to attempt, measure and successfully carry out these breaches of standard practice, it was necessary to bring together significant technical and group talent. Those involved in the initial programme were not young engineers, but were experienced men and women.

An original method of marketing

The last breakthrough innovation concerns the way in which the Logan was marketed. Renault created a marketing network in countries where the group was absent or hardly represented. The company had had a relatively similar experience with another model, the Dacia, and had been made aware of the game-change which this brought with it. Finally, a new innovation was introduced, the Blue Ocean strategy (creating new demand in an uncontested – or Blue Ocean – market space). As the price of the Logan was so much lower compared to the rest of the market, marketing costs were also very low.

Why Renault ?

The exceptionally innovative nature of the Logan undoubtedly helps to explain why, eight years later, no manufacturer has imitated this new type of car. The Scénic, for example, already had competition three years after its launch. This is indeed an example of what Clayton M. Christensen called 'disruptive innovation' in his book 'The Innovator's Dilemma' (1997).

However, according to Christensen, it is never well-established companies which cause these 'disruptions', but outsiders. In this example, one might have thought that it would be an Indian manufacturer, like Tata, or a Chinese manufacturer who would invent this type of car, not a well-known group like Renault.

We have identified four factors which help to explain how this sort of innovation was made possible at Renault.

The role of general management

Louis Schweitzer played an essential role in promoting the project, defending it no matter how implausible it might seem and continuing to support it despite reservations. It is a well known fact that a breakthrough innovation has little hope of succeeding if it is not backed by top management.

Those involved in the project made their nonconformity an asset. Romania and the CEEC (Central and Eastern European Countries) are considered to be markets which are not of great interest to manufacturers, and a great many people in the initial project were not 'rising stars' at Renault. One of the members of the original team told us that when it was announced to his colleagues that that he was going to work on the L90 Project (the code name for the Logan), they were astounded, and asked him what he had done to deserve this. The fringe nature of the project made it possible to contravene the rules : had the project been supported by core Renault management, it is unlikely that any such contravention could have occurred.

The project structures

It is not sufficient for general management on its own to back an innovative project. One must also be able to carry out all the different aspects of the project (such as the functional, technical, industrial and commercial aspects). From Renault's experience with the Logan, the group reaped the benefits of the changes which had taken place at the beginning of the 1990s, and the expertise which had been collected as a result of the project structures. Without stand-alone project management, it would most certainly have been impossible to implement the contravening of the business regulations.

Lineage management

The third factor contributing to the success was to implement what Armand Hatchuel and his colleagues called 'lineage management'. The success of the Entry Programme, which included the Logan and its 'successors', not only relied on the success of the Logan, but also on the ability of the project to be implemented by changing itself beyond the initial target, either in terms of products, markets or the industrial system.

There are often two major constraints to this type of project. The first consists of trying to make the myth of 'the goose that lays the golden egg' situation last. In order to achieve this, one must be content to reproduce the exact formula necessary to succeed. Some companies can become prisoners of their own success. The other constraint is reverting to the norm. After a slightly 'exotic' experience, one goes back to more traditional processes. Initially, Skoda was criticised for being quite original, but it soon reverted to the 'everyday Volkswagen'.

The economic success of the Entry Programme is determined by the capacity of the programme to manage a learning process and to expand which bringing with it certain changes and bifurcations. At the same time, it was necessary to conserve its strong identity (the 'Logan spirit'). This is a threefold expansion : expansion of products, markets, and the industrial system.

After the manufacture of the first car, a sedan, there followed an assorted range including an estate car, a hatchback (the Sandero), a by-product of the Sandero (the Stepway), a crossover (the Duster) and finally the Lodgy. Moving through the range of cars, the client could easily see the options which were added to each car. The complexity of the programmes (a well-known risk associated with any diversification) was overcome by keeping certain standard features common to the entire range. Whenever a part was changed on a new model, previous models also had that part changed. Because of this 'carry across' principle, 70 % of the parts in the Sandero and the Duster are common to both cars. On the other hand, due to the variety of the products, some of the initial principles of design, such as the large sub-assembly one-piece frames (notably the dashboard and the front fascia), were abandoned.

The second sort of expansion concerns the markets from a geographical point of view. Initially the aim had been to sell the Logan to eastern and central European countries. The car sold very well in Romania, but not very well in Poland nor the Czech Republic, and so it was marketed in Western Europe. In Brazil, the sedans did not sell well, and so the Sandero hatchback was designed and then marketed in Europe.

Changes also took place in the branding policy depending on the country. Originally, it was decided not to confuse the Renault brand with the Dacia brand in order that Renault's image should not be weakened. However, when the Russians refused to buy the Logan because the word 'Dacia' had connotations for Russians of a former Russian empire in Romania, it was decided to sell the Logan in Russia using the Renault name. It is this combination of reactivity and pragmatism which made it possible for the Entry Programme to expand so successfully in such a variety of countries.

Finally, expansion was also industrial. The Entry range was initially manufactured in one factory, but it is now produced by an industrial system spread out over several countries and continents. It has therefore been necessary to rethink the product so that the geographical dispersion does not result in soaring logistical costs.

All these forms of expansion demonstrate Renault's capacity to revise the strategies which were responsible for the initial success of the Logan while maintaining the fundamental

identity of the project by the implementation of what François Jolivet and Christian Navarre have called the 'metarules' of the project.

Managing innovation strategies by internationalisation

The last factor contributing to the success of the Logan is the ability of the Group to make use of their innovation strategies abroad. Today, the Duster and the Sandero sell very well in France. However, if these models had been intended for the French market from the start, it is likely that they would have been nipped in the bud.

Internationalisation should not only be seen in the light of gaining markets or manufacturing in low cost countries. It can also be seen as an opportunity for testing breakthrough innovations in markets where the risks are lower. One could compare the Prius project with the Logan. The Prius' initial launch in Japan was a failure. Prius' success began in California, and as a result it was able to make a comeback in Japan.

The world seems to act as a playground in which breakthrough innovations can gradually mature. For this to be achieved, we need to progress from a process of 'business to consumer' to a process of 'business to society'. To make one's mark in countries as different as Romania, Russia or Morocco, one must take into account features other than the ordinary characteristics of clients. Renault was able to find such necessary skills in-house.

Conclusion

I will conclude by putting the Logan's innovative approach in the context of other car innovations. Rémi Maniak and Romain Beaume's book 'Réenchanter l'industrie par l'innovation' (pub. Dunod, 2012) serves as a reference as the authors tried to compare models of innovation in different companies.

The history of the Logan demonstrates a process of innovation which emerged from the concept of an original product. This is a well-known approach in the automotive industry, however this concept was replaced in the 1990s by a model which separated technological innovation from the development of platforms. Innovation was then pushed higher up the process chain : technologies were developed independently of platforms, and when they were ready, they were applied to new vehicles. This model of innovation, which became dominant, enabled development to be rationalised more rapidly and with fewer risks.

The examples of the Prius and the Logan remind us that there is another means of innovation, namely making the new product the template from which all kinds of innovations could be built. It is no longer necessary to add an innovative feature to an existing platform (such as the option of automatic parking), but to start with a vehicle concept which will generate numerous innovations by itself. This was the initial vision for the Prius, 'the car of the 21st century', which led to innovations such as the hybrid engine which was subsequently introduced to other levels of car ranges. This approach is also interesting from a marketing point of view. When innovations are embodied in a car, they are much more visible to clients. The hybrid engine of the Prius acted as a symbol and enhanced the value of the car for the client.

One of the future issues for manufacturers will be to know how to combine and assess these two important innovation models in future vehicles. The example of the electric car, on which we are currently focussing research, clearly constitutes another emblematic example of a process of innovation drawn from an innovative concept of mobility.

REMARKS : Guy Maugis

Bosch is the world's leading automotive equipment manufacturer. In the automotive sector, its turnover is 30 billion Euros. With a budget of 4.5 billion Euros, its R&D (research and development) is its core business. Bosch registers an average of 16 patents every day. Not surprisingly, in past decades the Group has been the source of a large number of innovations in the car industry such as the ABS (Anti-blocker system), the ESP (Electronic Stability Program) and the Diesel common rail.

From 2000 onwards, Bosch had to cope with the change in the car market in the form of the 'diabolo effect' an expansion in the top-of-the-range and bottom-of-the-range product markets, but a shrinkage in the middle range. The same phenomenon took place in the electrical goods and power tools industry. Bosch's strategy until this point had been consistently to put forward new innovations for top-of-the-range vehicles like the Audi A8, Mercedes Classe S or the BMW 7 Series, and to charge high prices which then made it possible to 'share' this equipment with other models. The most striking example of this is the ABS, introduced by Mercedes for its top-of-the-range vehicles, and installed today in all European vehicles.

However, Bosch could not ignore the low cost market, which, from now until 2020 is predicted to account for between 10 and 20 million vehicles of a total production of 100 million. The prospect of launching into this new sector led to a great deal of lively discussion within the Group. The automobile sector is relatively 'macho': a car engineer would much rather work on the latest Porsche Carrera than on a production line car, regardless of its quality, and any car less than eight cylinders is generally seen as irrelevant.

This was the context when we were contacted by Tata to manufacture the injection system for the Tata Nano, the '1,000 Euro car'. When one knows that injection systems manufactured by our engineers normally cost 1,000 Euros, one can start to understand the scale of the challenge.

Bosch management wisely decided to entrust this work to the best specialists in the motor industry. This prompted remarks similar to those mentioned by Christophe Midler earlier ('What did I do to deserve this ?'). Management explained that as these specialists were masters of their art they were more than able to express it with the simplicity which only belongs to the greatest artists. At the same time, the project was entrusted to a group of Indian engineers who were extremely motivated by the importance that this represented for their country, and to a Chinese team. China seemed to be a very promising market for this type of car. Each of these three teams was briefed with a very different approach. The Germans had to begin with the traditional injection system and 'strip it of everything which was not essential'. The Indians' mission was to look at the systems used on mopeds and threewheelers and invent something like a car engine. The Chinese had a free rein. At the end of the process, we brought the three approaches together. The result was surprising. It completely satisfied the specifications even though it was a great deal less refined than the systems we usually design for more sophisticated cars.

All the engineers, including the Germans, went along with this. With hindsight, it is undoubtedly the project of which they are most proud today. To design a system which is really simple, they had to be extremely imaginative. When one wants to make a product more sophisticated, one merely has to add an additional layer of technology. As a result of this experience, it is no longer a problem at Bosch to make a team work on a project where the aim is to simplify a product.

REMARKS : Yves Doz

I read an initial version of the book 'L'Épopée Logan' at the beginning of the summer, and I found it very interesting. I read the final version recently and, far from finding it boring, I really enjoyed it. It is an extraordinary book because of the wealth of information, the clarity of its analyses and its conceptual positioning which makes it more than just a simple description. Let me focus on three aspects which struck me.

Internationalisation

In the space of a few years, Renault went from a very traditional model of innovation which consisted of the designing of a new product for the domestic market, and then launching it in other markets which were quite close geographically, to a so-called 'transnational' model which consists of developing both the product and the market. For the most part, the Logan was designed in France, but everything related to market analysis, understanding the requirements, the system of production, the innovation (other than of the product) and notably the distribution system was carried out in Romania. The Logan was then successfully introduced back to France and Western Europe.

This is known as 'reverse innovation', when the effects of an innovation which takes place in a developing country are sent back to the domestic market of a developed country. 'Metanational innovation' also exists. This occurs when the different dimensions of the innovation come from several countries or geographical areas and the business works like a network of innovation. In the case of the Logan, the initial strategic innovation of the Logan served as the trigger for an accelerated and very marked transformation of the whole process of innovation at Renault.

Renault's strategic responsiveness

I was also struck by the concept of strategic responsiveness. Since the 1990s, it was considered better to try to complete the Renault range from the bottom, rather than from the top. The implementation of this new strategy has been characterised by great flexibility. The authors described how Louis Schweitzer explained the beginnings of the project by saying 'we had the factory ; so we might as well use it.' There also followed a series of new developments in the Logan saga which demonstrated great reactivity. Contrary to what often happens when a CEO decides to get involved in a project, in this case there was no overspending. Robert Burgelman noted that when Andrew Grove, the Intel CEO, championed one of the company's projects, the project was often over-financed and ended in failure. It is very tricky for a company manager to support a project while at the same time staying on course with a 'frugal' innovation.

A platform of growth

The third idea which struck me in this book was the 'line of products'. I would rather talk about a 'platform of growth', not in the sense of a platform in today's automobile industry, but a product which, in the beginning, is unique and exceptional, and is the basis for the development of a series of other products. This approach shows Renault's ability to rely on an initial success in order to progress by using a process of integration and differentiation.

A means of enhancing engineering capacity

When Carlos Ghosn succeeded Louis Schweitzer, he said that he was 'convinced by the Logan project the day he understood that this project was going to enhance engineering capacity in the company'. When, from a given platform, a company manages to develop a much broader base of skills and to selectively redeploy and to integrate certain elements of these new skills, it is clear that the company is progressing strongly in its engineering capacity.

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DISCUSSION

Louis Schweitzer : I have been enthralled by this talk. I would like to make a few remarks. Christophe Midler mentioned Clayton M. Christensen. According to Christensen, real breakthrough innovations cannot come from established companies, but only from outsiders. I think that Paragult is both an insider and an outsider, and that an innovation like the Logan

think that Renault is both an insider and an outsider, and that an innovation like the Logan could only ever exist in a company like Renault. A smaller company would not have the enormous technical skills and capacity to risk the billion Euros necessary for such a project to succeed. At the same time, Renault is a large company, but quite atypical in its pursuit of adventure and desire for autonomy. I do not think that Volkswagen, for example, would have been able to invent the Logan.

From the end of the 1980s onwards, I realised that we could not follow the German manufacturers in all the technologies that they were developing. It was then that I suggested the idea of design innovation in order to promote forms of innovation other than technological innovation. As far as I am concerned, the innovation embodied by the Logan is intrinsic to its specifications, and these can be characterised by just three adjectives : robust, modern, and accessible. Incidentally, it is the specifications which safeguarded us from any financial bungling in so far as it was made extremely clear that expenditure was limited.

When I became the CEO of Renault, the first book I read was Alfred P. Sloan's 'My Years with General Motors'. The author explained how the concept of planned obsolescence and multiple General Motors brands enabled GM to beat the Ford Group. I was convinced that Sloan's strategy could be relevant to rich countries but that most countries in the world tended to be in a situation similar to that of the United States when GM's rival launched the Model T Ford. Therefore, I thought that it would be better to revert to Ford's strategy, in other words, to design rational and cheap cars.

I would also like to mention the idea of a 'family of vehicles', a concept which already exists at Renault because it was initially applied to the 'Mégane' family. Developing a Logan family was a programmed change rather than the result of specific flexibility. With the exception of the Duster, which was designed later, all the vehicles in the range were conceived and designed between 2003 and 2004. We launched this process when we realised that the original model was a success.

I am delighted to learn that the Bosch engineers were enthusiastic about simplicity. I do not think that this happened overnight. In the case of engineers, it usually takes a while for this type of enthusiasm to come to the surface. However, once they are enthusiastic, trying to be frugal becomes a very stimulating exercise. Furthermore, it is the basis of the economy itself.

The manufacture of the Logan in Romania was not planned. It was not aimed at exploring the Romanian economy. The engineers showed little enthusiasm for designing the new model, and I thought that choosing the Pitesti factory would help to motivate them because it is a pity to see an empty factory. Initially it was intended to sell the Logan throughout the world. In an interview published after his death, Luc-Alexandre Ménard explained that pretending that the Logan was not going to be sold in Europe was a sort of trick aimed at preventing our engineers from designing a new Clio or Mégane. However, we did not try to put ourselves in the shoes of our clients in developing countries. We simply thought that people who were twice as poor needed cars which were twice as cheap.

Finally, I have never understood why the Logan was not copied by other manufacturers. It takes about five years to design a car, and we have known since 2005 or 2006 that the Logan is a success. What are they waiting for ? I don't get it.

Christophe Midler : From my point of view, a 'family' and a 'lineage' are not exactly the same thing. From the very start, the Mégane was designed to be somewhere between the people carrier, the cabriolet, and so on. All the constraints were integrated into the design of the platform which was then 'rolled out' between the different models. In the case of the Logan, the initial model was not weighed down by the fact that there was likely to be a Duster or Sandero, for example, afterwards. In the end, there was a 'Logan family', but the construction of the family was able to take advantage of the lessons learned *ex post*, which made sure that the product was enhanced.

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L.S.: The two ideas seem to overlap somewhat. Not all the Mégane family was produced at once, and even if it was clear that the Logan should not carry the constraints of future models, people had already thought about a Logan family before the first car rolled off the production line.

Dacia's reliability

Question : In Normandy at week-ends, I see Dusters everywhere. They even belong to people who used to drive Range Rovers. I have the impression that in terms of perceived quality Dacia's image is almost better than Renault's. How could it have reached such a level of reliability and safety ?

C. M.: There are very strong links between the ideas of simplicity, robustness and reliability. The more sophisticated a model is, the more likely there are risks of malfunction. With the Logan, there was not very much which could break down or go wrong.

Dacia's factories were upgraded in several stages. Two projects were launched before the Logan, the SupeRNova and the Solenza, neither of which sold very well. They served to bring the engineers 'up to speed' on western quality processes before manufacture of the Logan began.

Christian Estève : *I was Dacia's first French CEO in 2003. The Romanians really wanted to be proud of their production, and they found this pride in these quality processes. The problems encountered came mostly from the suppliers. We had to be extremely meticulous to convince everyone that they should adopt the same standards. The result was very satisfying in spite of the fact that the processes were mainly manual.*

The cycle of innovation

Q.: Were the innovations made in the case of the Logan made under time constraints, or was there a long time for reflection ?

C. M. : In the autumn of 1995, Louis Schweitzer presented the 2015 Plan which naturally led to the manufacture of the Logan. The design team was only appointed in March 1999 and the car was launched in 2004. There was therefore a period during which the Logan vision matured. If the Dacia opportunity had not presented itself at that time, the process could have taken much longer, or not have existed at all. We were far from a situation like Moore's Law (which states that the processing speeds for computers double every two years) which demands that the range be constantly renewed. It would have been possible for the Logan not to have existed, just like the Twingo some time before.

Yves Doz : On the other hand, once the project was launched, it was subject to the same time constraints as any other project, especially since pressures on deadlines are also a means of reducing costs.

The absence of the Logan in China

Q.: Why are there no Logans in China ?

L.S.: Because our partner Nissan is in China, Renault did not have the authorisation to manufacture passenger cars in the same country.

Q.: Why did the Chinese not copy the Logan ?

L.S.: Designing the equivalent of a Logan requires extraordinary know-how both from engineers and technicians, and the Chinese do not as yet have sufficient skills in automobile design.

Mistakes or surprises ?

Q.: *I* think that the story of the Logan can be explained by excellent management of mistakes which is acknowledged to be the major component of a project and a way of learning.

C. M.: I think that it is more a case of surprises than mistakes. Some projects, including those at Renault, have not been as successful as the Logan project. In the case of the Logan, the reality was always beyond all expectations, and this is quite exceptional. On the other hand, the events which took place were not necessarily those which were anticipated.

The shareholders' point of view

Q.: What was the reaction of the shareholders to the Logan project ?

L.S.: They were not informed about it initially. The group's board of directors is consulted about the major investments, but not about the products plan. Management, therefore, was totally free to invest the money as they saw fit.

Who buys the Logan ?

Q.: Who buys the Logan ? Is it low income households or 'smart buyers' ?

C. M.: The target market was low income households, but this car was also bought by bourgeois bohemians who are not really interested in cars, but still need a car to get around and they want a 'real' car which does not break down.

L.S.: To tell the truth, there was not really any target market for the Logan in France because the Renault marketing team thought that this car would not sell. They thought that the Logan's very low price would deter people. We were all surprised by the enthusiasm generated by the Logan when it was launched in France.

Arnaud Debœuf : I am currently in charge of the Logan programme and I can provide a few details about the people who buy this car. This data only concerns France and the Logan, not other models such as the Duster. The Logan clientele is younger than the average people who are buying a car for the first time. They are often families from lower socio-economic categories. When one asks these people why they chose the Logan, 80 % of them say that the price was the main reason, compared to 26 % for all car buyers. Half of Logan's customers already owned a second-hand car, and those who owned a new car had bought it more than ten years ago.

The risk of cannibalisation

Q.: Is there not a risk that the Logan will 'cannibalise' Renault's other cars?

A. D.: Logan's sales in France account for less than 10 % of global sales. The risk of cannibalisation is therefore very limited.

Q.: Should Renault's concern for its brand image make the group reposition itself in the topof-the-range position ?

C. M. : Images are created to a large extent as a result of communication. Renault did not really have to publicise the Dacia very much because the Logan was able to sell itself as a result of positive word-of-mouth, and reports from clients who had bought this car and were satisfied that their expectations had been met. Furthermore, the specific identity of the Dacia brand and the fact that it has made a name for itself in a very short space of time, made it possible to avoid spoiling Renault's image.

The question of jobs

Q.: What has been the reaction of politicians and trade unions to the manufacture of this car in countries where costs are lower than in France ?

L.S.: There has been no discussion about this. It was obvious that this sort of car could only be made in a country with low labour costs and in factories with a low level of automation. The risk of failure was too great to allow for heavy investment.

C. M.: The Logan was designed to be a factor in the group's international growth in countries where Renault does not have a strong presence. This is very different from the situation in which one might envisage relocating the production of a model like the Clio.

Q.: Nevertheless, there have still been many protests regarding the fact that Renault is investing in a car which is entirely manufactured abroad. Some people think that a national company, or one which has a national responsibility, should be more concerned about creating added value in France.

C. M.: One should not judge the Logan story purely through French eyes. The important achievement of the Logan is that it enabled Renault to set up networks in countries where Renault alone could not do so. Once these networks were in place, for example in Russia, it was possible to use them to sell Renault cars.

Presentation of the speakers :

Yves Doz : professor at the INSEAD Business School, graduate of HEC and Harvard. He has written numerous books about multinationals and innovation. The most recent is 'Managing Global innovation' co-written with Keeley Wilson (pub. HBR Press, 2012).

Guy Maugis : President of Robert Bosch France SAS since January 2004. He is a graduate of the École Polytechnique, and the Ponts et Chaussées, and he also has a law degree. He worked for a number of years at the Ministry of Equipment and Transport before working for Pechiney where he managed their Rhenalu lamination factory in Neuf-Brisach. After this post, he was president in charge of Europe glass products for the American group PPG. When PPG was bought by Asahi Glass, he became vice-president in charge of business development and European activities in the automobile branch of the Japanese group. He is also president of the Franco-German Chamber of Commerce and Industry.

Christophe Midler : research director at the Centre de Recherche en Gestion (CRG) and Chair of Innovation Management at the École Polytechnique. His research focuses on changes within large industrial companies in the strategy of innovation, organisation of projects and design of new products. He has published numerous articles and several books on this subject including 'L'auto qui n'existait pas, management des projets et transformation de l'entreprise', and, in 2012, 'Management de l'innovation de rupture' co-written with Sihem Ben Mahmoud-Jouini and Rémi Maniak (pub. Dunod, 2012), 'Réenchanter l'industrie par l'innovation, l'expérience des constructeurs automobiles' with Rémi Maniak and Romain Beaume (pub. Dunod, 2012), and 'The Logan Epic, New Trajectories for Innovation' with Bernard Jullien and Yannick Lung (pub. Dunod, 2013).

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