Managing Stakeholders

After discussing the internal management infrastructure (Chapter 9) and the management of external partners (Chapter 10) in novel projects, we must address one more set of parties that are important: project stakeholders. Stakeholders are parties who are not participants in the project (as opposed to partners), but who are affected by it, have an interest in it, and can influence it. Overlooked stakeholders can bring a project down, although they may not have official power. We start with an example and then draw the lessons.

11.1 The Project of the Flying Car[1]

One gray winter morning in late February 2000, one Mr. Finisterre stood on the doorstep of Frédéric Normand, the "idea scouting manager" for external innovative ideas at Lemond Automobile SA, a large European car manufacturer. Finisterre was a thinker and private inventor, and had brought along drawings of his idea: a flying vehicle. Antoine Alsace, the Innovation Department manager and Normand's boss, happened to pass by and saw the pictures. Finisterre's idea connected to

something he had long (although unconsciously) been looking for; he was hooked right away. "Imagine you're in a gigantic traffic jam, and you put your wings on and simply fly over the traffic jam! We ought to do something like that!"

11.1.1 Concept Generation—Three Ideas Emerge

Normand organized a kickoff workshop in March, to which he invited Olivier LeMans, from the New Car Concepts Department, and Philippe Ardeche, a senior engine design manager for the high-end model range. Both were known to Alsace as particularly innovative and as flight enthusiasts. The team quickly named itself "Vol de Nuit," in remembrance of the French pilot hero, Antoine de Saint-Exupéry.

Ardeche brought several articles to the workshop, showing that the idea was far from new: It had been pursued for the first time in 1917. Since then, amateur designers had tried, and sometimes also succeeded, in building prototypes of flying cars. However, no one had succeeded in building anything that combined the full capabilities of a ground vehicle and an aircraft together into a single vehicle, nor had full-scale development been attempted. In the discussion, it quickly became clear that Finisterre's propeller-driven concept was impractical as a ground vehicle ("imagine pedestrians ducking for cover as it blows up a dust storm!").

Ardeche brought the discussion down to earth with the realistic comment, "Maybe we shouldn't start by trying to make a sport utility vehicle fly . . . let's proceed in small steps." This sparked an idea in LeMans. From weekly department meetings, he knew that at the time, his colleague, Jean-Pierre Breton, was working on a three-wheel curve-leaning experimental vehicle, with a shape that resembled a sailplane. Ardeche suggested building a flying motorcycle. He would talk to his long-time friend, Roussel, an ex-professional sport pilot who now had his own ultralight airplane company, and was known throughout Europe.

That evening, LeMans asked his colleague, Breton, for the three-wheeler's package plan. He worked all night and produced the first concept drawings for the "DuoSport," which he brought along to the next meeting. At this point, Breton joined the project team, to be able to consider the DuoSport's needs in the development of the ground vehicle.

In addition to Alsace, Normand, LeMans, Ardeche, and Breton, the emerging team also included Gérard Picardie, the original designer of the narrow-lane concept that Breton was now (10 years later) building. Picardie was now design manager for ergonomics and became a valued advisor in the team. André Simon was a controller with an open mind for innovative ideas, who came on board to help the team gain access to all available channels of funding and to control costs. Finally, Christelle Labelge, a business student from Metz, joined the project team while writing her *maîtrise* thesis, filling the "project office" role for the emerging team. The organization was loose and had no formal project manager.

A month later, Ardeche mentioned the idea of building a hybrid ground-air vehicle to Roussel at a local air show in Nancy. Roussel responded with enthusiasm: "Philippe, guess what? I have been dreaming about a flying motorbike for years!" Right there in Roussel's exhibition booth, they made the first concept drawing for the "FlyBike," a standard motorcycle combined with a Delta wing (Figure 11.1, top). This would emerge as concept 2.

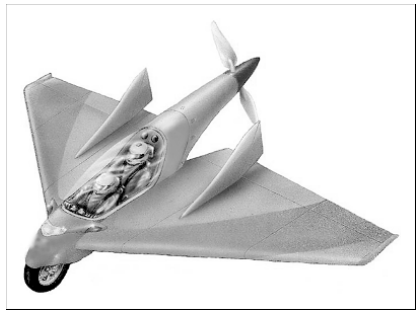
At the same air show, Labelge carried out a small, informal survey to sound out potential interest in such a crossover vehicle. The survey indicated general interest, although the numbers were highly uncertain, and for the foreseeable future, the market would, at best, be a niche.

In the summer, a third concept added itself to the stable. When Breton heard Ardeche talk about the flying motorcycle, it brought to mind another of his ongoing projects, the "Leonardo Sport." Lemond and the Italian motorcycle company Aprilia had formed a marketing collaboration to appeal to young urban consumers, and as part of a mobility service concept, Breton worked with Aprilia to design a slimmed-down version of the Aprilia Leonardo ST 150 scooter. At 100 kg, the Leonardo Sport was only half the weight of the Aprilia SL 1000 Falco touring bike that Ardeche wanted to use, so they should be able to get that to fly! He had built an exploratory prototype, and he still had a second set of parts "in reserve." With LeMans and the company Plastic Omnium, the external partner with whom he had worked on the narrow-lane vehicle, he explored the concept of adding a foldable wing to the Leonardo Sport. When they were sure they could do this for about €90,000, they dubbed it "SkyScooter" and proposed it to Alsace's astonished team (Figure 11.1, bottom).

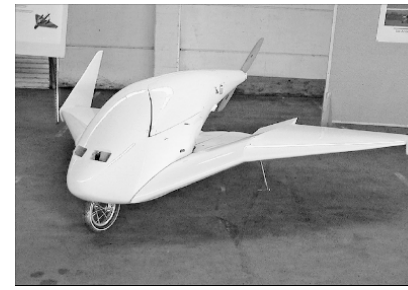
11.1.2 From Concept to Reality

This was how far they could go without a budget. Now, serious work had to begin, requiring resources and, thus, the support from higher up. Thierry LeCorse, the executive vice president for research and advanced development, found the idea of a flying vehicle exciting. In a confidential meeting, he commented, "I've always wanted to see a really spectacular idea. Most things we do are so incremental. We need a visionary project for a change."

With limited resources and lacking the full breadth of necessary know-how, the team quickly decided to utilize external partners as much as possible. They persuaded Plastic Omnium, already the external partner for the narrow-lane concept, to act as general contractor for the DuoSport. This eliminated the need for complex contract negotiations (including secrecy and intellectual property rights). In fact, Lemond's involvement did not even have to be revealed at an early stage. Plastic Omnium hired a project manager, Sébastien Savoie, just for this project, a level of support that Alsace had not even hoped for at the outset. They also coordinated the SkyScooter project, subcontracting execution to Marchin & Son, a small "motorized power sailplane" company and flying school. Marchin Senior was widely known as the "father of ultralight airplanes" in France.



FlyBike Drawing



FlyBike Mock-Up

Sky Scooter Functional Prototype

Figure 11.1 The discontinued selectionist trials: FlyBike and SkyScooter[2]

The advantage of having an established contractor became evident when the contract negotiations for the FlyBike between Roussel and Lemond's legal department dragged on for months. The contract was signed only in early October, months after the project was initialized. Only then did Roussel receive the base motorcycle, which Ardeche had secured from Aprilia, and could finally start construction. At that time, the feasibility study and construction calculations for the DuoSport, performed by the engineering company Pinson Engineering, were complete.

11.1.3 Prototype Execution

On December 10, the team held the first workshop for everyone involved. In this workshop, the three subproject teams found out for the first time that there were three parallel efforts, and each subteam presented their status. Alsace had also commissioned a short film showing photos of the three prototypes and featuring interviews with the participants. The film was intended as a powerful communication tool to sell the project within the company.

The external partners were excited to work with Lemond—the Pinson Engineering people had first dismissed the idea of a flying sport vehicle as crazy and came on board only when they heard that Lemond was behind it. But several of the external partners were upset that they had not been told about the concept competition. Because of the contract delay, Roussel was lagging behind, but in the two and a half months, he had nevertheless

managed to produce a set of animated drawings and a plastic model of the outer skin put on top of the SL 1000 Falco touring bike.

On January 29, 2001, the SkyScooter actually flew for the first time around a small airfield outside Montargis, with Marchin Junior as its pilot. In February, the 1:6 model of the DuoSport flew for the first time. This was actually fraught with difficulty, and it crashed several times because it was too small to maintain a stable airflow on the wings. The 1:2.5 model flew perfectly at the first attempt in August of the same year. Progress was incredible because everyone involved had their heart and soul in the project and worked day and night, even without pay. Several of the external partners reduced their engineering hour rates substantially, and everyone worked much more than they billed for. The Lemond internal team was essentially doing this project "on top" of their regular jobs, anyway.

At the end of April, the project was advanced enough to be presented to Michel Loiret, the CTO and head of engineering. The team presented 1:1 mock-ups of the three concepts, with photos of the successful flights, next to each other. During the presentation, LeCorse was rather tense. While initially enthusiastic about the idea, he had not expected the project to advance so quickly. This, he thought, was getting out of control—where would it end? But Loiret was excited: "In the next presentation of new vehicle concepts to the CEO, why don't we fly the SkyScooter over the heads of the group?"

Unfortunately, the excitement did not last long. In the next team meeting, resource problems became pressing. Through various channels, they had cobbled together a total budget of 1.9 million for all three concepts. The bulk of the money would have to be spent on the fully functional prototypes, but it now became clear that the budget did not suffice and no more money would be forthcoming. The team would face hard choices on which concepts to keep and which to discontinue. The SkyScooter was the first to go. In April, it was announced that the mobility service concept with Aprilia would be terminated. This meant an end to the development of the Leonardo Sport, which was to have served as the base vehicle for the SkyScooter.

By mid-May, money was still short and the team decided to stop the development of the FlyBike as well. It was not as advanced as the DuoSport, and Roussel's effort had been disappointing in the presentation in April, lacking both construction and design progress. In addition, the FlyBike was seen as more risky because it required a fundamental reconstruction of the base vehicle (the SL 1000 Falco was much too heavy and needed a lightweight composite material frame that had to be developed from scratch). Ardeche felt that "his" project, the FlyBike, was disadvantaged because less time and money had been invested in it than in the DuoSport. But he acquiesced because he, too, had been disappointed by the progress. Roussel agreed to make another presentation in October, at his own expense, in the hope of reconsideration.

Development of the DuoSport progressed on schedule. The bigger 1:2.5 model, which was a better predictor of the flying properties of the future prototype, flew successfully in August 2001, a little over a year after project start. The final prototype would incorporate advanced lightweight carbon fiber materials and fly-by-wire technology, both of which would be directly transferable into Lemond's mainstream car development, after successful implementation in the project. Figure 11.2 shows a (disguised) picture of the full-size DuoSport prototype.

11.1.4 Friction within the Development Team

While the project made breathtaking progress during the 18 months of its development, strong personalities clashed. Early on, rivalry developed between the champions of the two main concepts, who were both convinced that they were right. Ardeche was more senior, and the widely acknowledged expert, whenever the topic of flying came up. In his view, the younger LeMans had no business coming up with a competing proposal. LeMans felt unfairly treated because Ardeche's bias against LeMans's concept, expressed at the level of Ardeche's peers, including LeMans's former boss, possibly contributed to a lower annual evaluation for LeMans. This conflict led to some bad blood within the team.

Communication with upper management also turned out to be more difficult than expected. Jacques Ardennes took over the position as Alsace's boss in March of 2001, long after the project's start. Progress was incredibly fast, so Ardennes had to face the possibility of being confronted with a fait accompli. Thus, he was initially cautious, and the team suspected that he might not be on their side, fearing for his career if they advanced too far without the go-ahead from the top. Thus, communication with him was uneasy and caused uncertainty on both sides. It turned out that he was looking for other ways to bring the project into the company's official funding system, thus avoiding a complete halt to the project.

Figure 11.2 The DuoSport prototype[3]

11.1.5. Friction among External Partners

Major irritations arose with the external partners when the two concepts were stopped. Marchin had started to work essentially based on trust, without official intellectual property rights, believing that he would be able to continue to develop the SkyScooter without paying royalties. He shortened testing delays by signing a piece of paper before the maiden flight, to the effect that "the prototype was his and that his son would fly at his own risk" (had Lemond processes prevailed, the insurance question would have taken two months). The decision to stop the project, which to him seemed out of the blue, disappointed him. Moreover, he was hurt that Lemond had filed the patent without him, although he had been promised a very cheap license to commercialize the SkyScooter, if he wanted. He concluded, "This was the last time I worked with a big company."

Roussel was even angrier. He was already upset when he found out in December 2000, eight months after starting development on the FlyBike, that he was competing with other concepts. He fumed when he had to wait outside during the presentation to the CTO in April 2001 while they were discussing his baby without him being there to defend it. When the FlyBike was discontinued shortly afterward, his interpretation was that the decision had already been made at the presentation.

These irritations did immediate damage to the morale of the Plastic Omnium people, who wondered whether they, too, might be tossed out at some point. Moreover, Roussel and Marchin could destroy Lemond's reputation as a reliable partner in the small and clubby flying community, possibly compromising Lemond's ability to revitalize its efforts in the future.

During preparations for the maiden flight, protracted technical difficulties recurred, each one of them small, but collectively, they caused a delay until December 17, 2002. When the maiden flight finally took place, it was very successful; in fact, the test pilot undertook several flights that day. This prompted exhilaration, but at the same time, the event was marred by Le Mans and Breton's anger and frustration because of Breton's negative annual evaluation. Everyone who saw the DuoSport reacted first with incredulity and then with enthusiasm. And yet the project had run into political traps and resistance in the wider organization.

11.1.6 Selling the Project to the Organization

The Vol de Nuit project had several arguments suggesting a strong strategic rationale. While hybrid ground-air vehicles would clearly be, at best, a niche market for the foreseeable future, there were signs that a market for personalized air transport was emerging, both on the customer and on the technology side. For example, wealthy people in São Paulo or Monaco now bought a helicopter rather than a Ferrari—São Paulo had the highest helicopter density in the world. In the United States, small airplanes were already widely used in the Midwest and Texas, and a hybrid vehicle might spark wide interest. There were also several independent efforts reported

in the press of developing much-lower-cost small airplanes. It was expected that these trends would significantly widen the market for individually owned or used air vehicles.

Lemond's competition also seemed to recognize the idea that the third dimension, air space, might gain importance for them. Toyota was currently working on a business airplane, and Audi had even approached Roussel, as a Europe-wide known expert, to ask him about a three-dimensional mobility idea that was similar to Vol de Nuit. However, he maintained a silence because of his contract with Lemond. NASA had presented a study on Dual-Mode Air-Car Concepts at the AirVenture 2001 in Oshkosh, where the large potential for such vehicles in the United States was stressed: Apart from the 29 major airports, accounting for 75 percent of air traffic, there were thousands of smaller ones. Ninety-eight percent of the U.S. population lived within 20 miles of at least one public airport.

In addition to the creation of a new market niche, which, although very risky, could be huge in the long run, the Vol de Nuit project offered several different strategic benefits to Lemond. First, there was huge PR value in being the first to credibly develop this breakthrough concept (which had impressed everyone who had seen it). Second, regardless of whether the DuoSport would ever enter the market, a technology transfer into car development was virtually guaranteed: The DuoSport design was optimized for carbon fibers. The transfer of these lightweight materials into the car had been slow because of the need for different design principles, and the knowledge gained from the Vol de Nuit project could be transferred.[4] Third, the DuoSport incorporated fly-by-wire technology, which was already recognized as important for cars in the future (eliminating wire harnesses and pipes). Fourth, the DuoSport tested a new graphical man-machine interface, which allowed instant switching between car mode controls and flight controls, and offered 3-D graphical steering and orientation support.

Finally, Vol de Nuit fit Lemond's newly announced technology strategy. In September 2001, the CTO made a presentation to the managers of the engineering division, stating, "We must move from being a leader in accessories to being the core technology leader. The technical substance of a product will become the most important differentiating factor. We must learn to achieve at least one major technical innovation per year." The CTO also stressed the importance of cooperating with external partners, an approach successfully used in the Vol de Nuit project. He also urged a change in management style "that continuously looks out for new ideas and motivates their team members to do likewise."

On the other hand, the company was entering a period of lower profits after several years of expansion, and the entire organization was under pressure to cut costs. There was less patience for "far-out" concepts. The project also faced skepticism from other departments. Marketing saw the whole thing as a distraction. The chief designer had been given the mission to establish a "common recognizable design language" for Lemond, and thus he saw this project as an unauthorized design effort that should have gone through him.

The supportive stance of upper research management began to reverse. The research and advanced development group had overrun its budget that year. On the defensive, and facing resistance from the side and from above, they became worried about the reaction of others who said, "There is no money left to get all our new car introductions ready on time, and you have money for something like *that*?" Skepticism became prevalent, although the total cost of Vol de Nuit was low.

A decisive blow came when the External Communications department joined the act. They proceeded without further coordination with Alsace, calling several newspapers to reserve a full page for "a big announcement" in June 2001. Upper R&D management heard about this plan, and feeling bypassed and overrun by events, they slammed on the brakes. In a last-minute effort, the letters to the newspapers, containing the press release, had to be hand-picked from the outgoing mail baskets. The project team ended up being blamed for not keeping upper management properly informed. On the following Monday, all communication was called off.

The team members became very frustrated and, at the same time, ever more determined to make the DuoSport fly. To give the reader an impression of the personal initiative and risks that the team members were willing to take, Box 11.1 presents excerpts of an April 2002 interview with Jean-Pierre Breton, core team member and original developer of the three-wheel fun-sport vehicle.

In spite of its technical success, DuoSport development was barely allowed to continue until the successful maiden flight (it had to be kept secret even from other departments, in order to protect it), and then it had to be shelved. In a last-ditch effort to drum up support, a team member visited a senior marketing manager in order to explain the potential of the project in communicating the brand. The marketing manager greeted the delegation with the words, "Ah, you're coming for the DuoSport. I haven't seen it, but I have heard of it. Well, we can make this short. This doesn't fit our brand." He drew a diagram like the one in Figure 11.3.

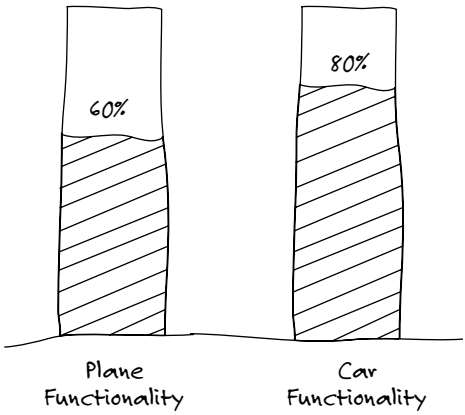


Figure 11.3 The final verdict on the DuoSport.

Frustrations of a Design Engineer.

I'm running into quite a bit of headwind even with my three-wheel fun vehicle, because I contracted with an external freelance designer after our head designer refused to work on it. People get crucified around here for going around the head designer, and he has already written memos to all department heads to block any presentation of my prototype (with the excuse that the engine is supposed to be presented to the public only in 2005).

For the survival of the DuoSport, I have now started to lie and to hide info from other departments, to prevent them from killing it. Last week, I made a stupid mistake; I went to our in-house insurance agency for the [legally required] prototype testing insurance. So, I call them, and they send me an official letter (I hate official letters!) admonishing me about the risks and telling me this must be coordinated with legal, and that they need all legal contracts with our external partner who builds the physical prototype. So I dutifully send the documents, and the next thing I know is they want a detailed project report with all background and history. At this point, I realize I have made a mistake. I stall for time and schedule a meeting, but I tell the caseworker he would not get a written report from me, so he cancels the meeting.

OK, so I went to my boss and told him what happened. He asked whether there wasn't an alternative insurance available outside, as our in-house colleagues didn't seem to like our project too much. I say, sure, I get the insurance outside! Half an hour later, I pass by the in-house insurance department and get all my documents back (they looked pretty stumped!). The rest was easy: a call to AXA; I fax a one-page risk description to them, one more phone call to clarify questions, and the following Monday my boss signs an airplane owner and operator insurance policy. We send it to the FAA, and one week later we have our official permit for the prototype tests.

But now it's getting interesting: Just today, I received an official letter from legal, warning me to not buy insurance outside, and ending like this: "We hereby send you in writing the demand to send us complete information about your project." I immediately called the caseworker and said there wouldn't be any tests, and therefore no insurance and no need for their services. Of course, he didn't believe me and said he would send me one last official demand before taking additional action. I had to control myself to not tell him he could kiss my . . . . I said, "Do what you have to," and hung up.

But the permit is the last barrier before we fly this baby in June. The DuoSport will fly, you can bet on that. If the company refuses to pay the insurance, well fine, my colleague and I pay the €880 ourselves, we can just about afford that. I'll keep my boss out of this to protect him. That's the only way to get the DuoSport to fly, without armies of bureaucrats and know-it-alls from corporate running our project into the ground.

"See, with a vehicle like that, there's got to be compromises between driving and flying. Let's say it has 80 percent of the functionality of a fun sports car. And as the plane part is new, perhaps 60 percent of the functionality of an ultralight plane. What does that add up to? A compromise. But we are promising our customers creative cars that work. We can't make such a compromise. We can't do this."

Support in the organization never materialized. The successful prototype was moved into the basement of the technology center, where it sits at the time of writing this book.

11.1.7 Management Systems for Selectionist Trials in Vol de Nuit

Choice of Selectionist Trials

The Vol de Nuit project clearly faced unk unks. The construction of a flying car had been tried before, but never on a professional level, with the goal of commercialization. While there was some evidence that a market was emerging for personalized air transport, both the time horizon of this happening and the requirements of future customers were completely unknown, and would have to evolve with the products offered. This left plenty of room for unk unks to arise from the market side. In addition, some of the concepts involved fairly new technologies. For example, the DuoSport intended to use carbon fibers, fly-by-wire technology, and a new 3-D graphical human-machine interface. There were no fundamental unk unks (gaps of knowledge)—all technologies used were understood in principle and had been used before elsewhere. Thus, the team was certain that it would be able to make all three concept prototypes fly, if necessary—it was only a question of time and cost. In that sense, the technical uncertainty represented (significant) variation and risks. Still, this made the outcome of the venture a lot more uncertain, and the detailed nature of the problems that would arise was unknown.

Indeed, several unforeseen problems *did* arise during the project, even during the period before the manned maiden flight (which finally took place in December 2002), long before market introduction. The French Aviation Authority, for instance, required documentation of the programming of the steering software, something the team did not foresee, which had a significant impact on the project, both in terms of costs (an additional person was needed for the documentation) and of time. On the technical side, the prototype of the DuoSport experienced heat management problems with the engine, which delayed the maiden flight by over three months. Furthermore, the personal conflicts in the team and the resistance in the organization were unanticipated by the team, inexperienced in managing such projects. And the real source of unk unks, the reaction by the public and by the market, was still to come.

The Vol de Nuit team chose to pursue three selectionist trials. This choice was not entirely conscious—three ideas simply came up. However, they were also cheap, so according to our decision tool discussed in Chapter 7, the parallel trials made sense. The timing of selection (of the DuoSport, rather than the FlyBike and the SkyScooter) was not planned but imposed by budgetary constraints. No market tests had yet been performed; the choice of the DuoSport was made based on the team's judgment, taking into account technical risks (which were estimated to be very high for the FlyBike because a new, lighter motorcycle would have to be

developed from scratch) and the team's feeling of market potential (the SkyScooter was judged to be able to serve only a small niche segment, that of leisurely "skywalking" at low speeds).

As the choice was forced by limited funds, it could be based only on preliminary information. The tests were highly imperfect (as we discussed above). They did not reveal any information about unk unks in the market, nor did they provide perfect information about technical feasibility. However, they *did* provide enough technical information to allow the project team a judgment of technical riskiness. Although this judgment could not be proven, the team felt comfortable about the choice (even the champion of the FlyBike, Philippe Ardeche, agreed, in the end, that the FlyBike was a long shot). One can argue that the Vol de Nuit project team tried an appropriately small number of concepts, and quickly and cheaply reached the point of eliminating two of them. And yet, given the preliminary information base on which the choice was made, one might also argue that they could have made the choice based on drawings only, even earlier, had the egos of the competing designers not gotten in the way.

Management Systems

Connecting back to the framework of Chapter 9, we can summarize the management systems used by the Vol de Nuit team as follows.

Planning System. A shared vision clearly existed: a vehicle that would get the owner around on the ground and, for longer distances (or rising over traffic jams), through the air, with fun. In fact, this was so exciting that the internal team members worked on this project in their free time, and the contractors were willing to work for reduced fees. The intermediate diagnosis criteria were judgments on technical risks and market potential.

Monitoring System. The team diligently used mock-up and prototyping cycles to evolve each concept in small steps that could be judged. The prototypes were evaluated based on visual (aesthetic) performance and recognizable technical risks. Experimental cycles were only two to three months long.

Coordination System. Coordination took place only at the level of the project leadership and the internal core team. The stopping criteria were relative: With the elegance and the progress of the DuoSport, the other two concepts looked progressively less promising (the FlyBike because of technical risks and lack of progress, and the SkyScooter because of market potential that was judged much more limited than the DuoSport). This is an important principle: The progress of one concept offers information about the performance of the others.

Information System. Information was *not* shared across the parallel projects because the core team feared that explicit competition would endanger the enthusiasm and energy of the partners. This caused problems—the

external teams *were* frustrated when the parallel projects were revealed, and some useful technical ideas might have been worth sharing.

Evaluation and Incentives System. There were no success premiums; de facto, process incentives were used (the contractors were paid for effort that was judged diligent). However, there was a de facto winner, namely, the team that was allowed to continue. In fact, Marchin & Son wanted to pursue the SkyScooter on its own, with its own money (it would have needed to sell only a tiny number of planes in order to break even; it was not in this for the money, anyway). Marchin & Son was blocked by Lemond's legal department, which caused major irritations and cost Lemond some external good will.

In summary, the Vol de Nuit team managed the selectionist trials well, in that they explicitly pursued several approaches and eliminated two of them relatively quickly. They could have done better in the sharing among the parallel teams. Sharing success was perhaps somewhat more difficult than if they had worked with internal teams rather than external partners. However, the subteams could have been informed earlier that they ran in parallel to achieve one common goal. Also, the FlyBike and DuoSport teams fiercely competed internally (and indeed, some of the tension among the teams was caused by that internal competition more than by the fact that the subcontractors were external), to the extent that the FlyBike team took it personally when their project was discontinued. While disappointment cannot be completely avoided, creating the feeling of achieving a common goal together might have eased the conflict.

Although there were some limitations in the management systems used, accomplishing a successful prototype maiden flight in less than two years, on a shoestring budget, was an impressive achievement. The biggest problems facing the Vol de Nuit project came not from technical development, but from the interaction with the rest of the organization, the stakeholders who had no official connection to the project.

11.2 How Informal Stakeholders May Hold Up a Project

Why did this innovative project of the DuoSport fail to win support and funding at Lemond even though it had many good arguments going for it? Figure 11.4 lists the dynamics that possibly contributed. At the top of the figure, we see the stakeholder behavior that may help a project: most importantly, "goodwill," or at least the absence of resistance.

In addition, stakeholders may be able to help a project team with resources or information. Stakeholder behavior is influenced at four levels, each of which may cause resistance strong enough to kill the project.[5] Often, only the top level is discussed explicitly, namely, the strategy, the hard business arguments for or against. This level is "above the waterline."

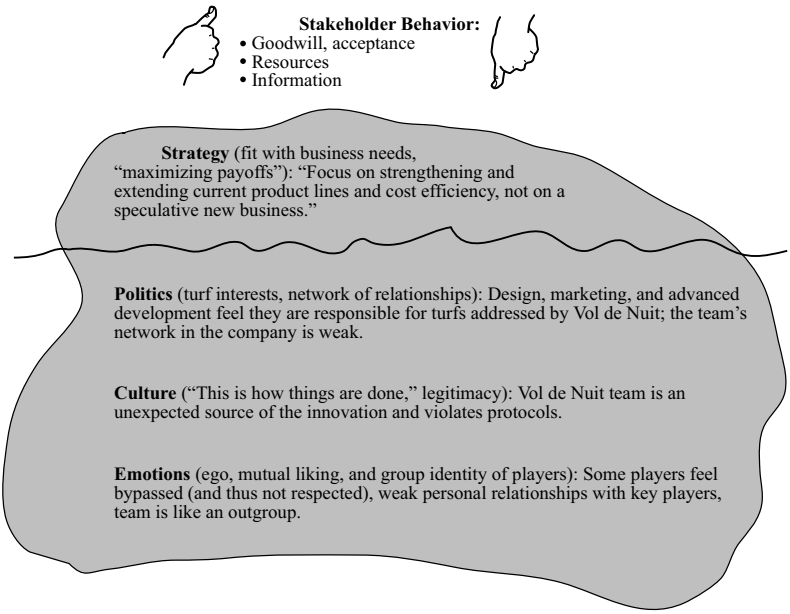


Figure 11.4 Four levels of influences on a novel project

But "below the waterline" are three more levels that often play a role without ever being explicitly mentioned, or they are overlooked: the political interest constellations of the players involved; the culture of the organization, which (often implicitly and almost unconsciously) defines "how things are done around here" and punishes deviators; and the emotional reactions of the players, who hate the feeling of being diminished in their egos, of a breach of loyalty, or of supporting someone outside the "in-group." They are often willing to put their foot down (if necessary with fake arguments) if they feel aggravated.

11.2.1 Strategy and Economic Reasoning

An organization has a legitimate interest in pursuing projects only if they support the organization's priorities. The difficulty with that lies in the fact that strategic priorities can never be "proven": They always involve judgment calls. In other words, reasonable people can disagree about what the strategy really requires, and a dialog is required among the decision makers to come to a common judgment.[6]

That did not happen for the DuoSport project: Although good strategic arguments for the project existed (they are listed in Section 11.1), these were not shared. Marketing saw this as a distraction (thinking that the current product line needed strengthening rather than starting a new business), the car-body people did not yet see the potential of carbon fibers (except for a few advanced body development designers, who weren't being heard by the mainstream of their department), and the organization at large

had entered a period of emphasizing focus and cost cutting rather than risky undertakings. But the debate never really took place—for example, Marketing dismissed the project after hearing a short description of it, without ever becoming fully informed.

It is important to realize that Lemond may have been right in shelving the project. Perhaps there really were not enough resources to pursue the project further without endangering the current business and its restructuring (the pity is that, for political reasons, it was the dialog that did not take place—see below). Shelving projects is legitimate and necessary for organizations to maintain focus, and designers must realize and accept this, without taking it too personally.

It is common practice, for instance, in car companies to stage concept design competitions, in which up to a half dozen elaborate vehicle designs are developed in parallel (for example, in clay or wood, looking like the real thing), and then top management chooses the most promising one to go into engineering. This is necessary because one cannot judge a concept design from drawings beforehand; it's too complex. The designers whose concepts are not chosen are often upset for months afterwards.[7] But, in fact, all the designs are necessary to be sure of having a promising one in the end, and no one's effort is wasted (although it may feel that way). This is part of designing in a business.

11.2.2 Politics and Influence: Differing Interests and Network Structure

The strategic view of an organization claims that the organization acts like a unit—a single entity that makes decisions to maximize its success. But that is, of course, only true in special cases (for example, when the organization undergoes an existential crisis). Most of the time, an organization is a coalition of partially conflicting interests. Every department manager looks out for her career, her resources, and her influence, and there always exist multiple and shifting alliances, which can help her if she piggybacks on them, or which can destroy her if she gets in their way.

This insight has two important implications for the designer who tries to get an idea accepted: (1) Be informed about who has what interests at heart, and how your project affects the various "interest turfs;"(2) the organization is a network in which power and influence are not completely mapped by the official hierarchy. Know who is allied with whom, so you can approach key players who then do your work and convince others for you.

Interest Turfs

At Lemond, the head designer felt threatened by the project, because if it succeeded, it would diminish his monopoly on design expertise. Marketing also felt threatened because they claimed to be the experts on the judgment of market niches, and if the project succeeded, it would imply that they had overlooked something. Moreover, all other departments were interested in

limiting the power of engineering and were happy to use the budget overrun in advanced engineering (where the DuoSport was located) to score a victory. Knowing the "turf" is critical in predicting where resistance will come from, and which arguments will diffuse that resistance as much as possible (for example, by letting Marketing share the credit for identifying a new and promising market).

Influence Networks

Clearly, there are some stakeholders who do not matter (who have no influence). There are situations where they should simply be ignored. As an example, in the context of preparing the infrastructure for the Sydney 2000 Olympic Games, a major project was the building of a 14-mile sewage tunnel under an affluent part of Sydney, in order to clean up Sydney Harbor in time for the games. The project team invested a great deal of effort in getting the communities affected by the tunnel on its side, in order to avoid resistance. Ultimately, however, some of the communities clung to concerns about the venting of the tunnels (even through that, in engineering terms, was not a problem), and by the time the project had progressed to a certain point, their concerns were no longer a danger. The project then sailed through the remaining objections and finished on time and slightly over budget.[8]

However, influence is often underestimated. Project teams naturally look for parties that have *direct* and *explicit* power to disrupt the project. Nevertheless, much influence is *indirect* and works *through others*. Managers (and people in general) do not make decisions in a social vacuum but look for guidance and advice from their superiors, from their peers, and often from their subordinates. When others rely on you for information and advice, you have informal power. Informal power is often dispersed in ways that are different from the official hierarchy—yes, you have to listen to your boss, but your boss may go to a peer for the kind of information that drives his or her decision making. This kind of influencing power resides in the social network structure of an organization. While a few people are "naturals," most people do not pay enough attention to the social networks. It is worthwhile to understand who is central in the network, who is always informed, and to whom others listen. If you get those people on your side, their support tends to amplify.[9] In short, some stakeholders may have very little direct power, but still matter because of their informal influence on others.

Figure 11.5 represents four different network positions of a project team. Network A represents a team with weak internal relationships (no connections) in an environment that is also unconnected. This team possesses two strengths: Internally, it has diverse perspectives, skills, and resources, and externally, it represents a "structural hole"—that is, it connects external parties that are otherwise unconnected, and it has thus the potential to gain power by acting as an information broker among them. However, team A lacks the internal relationships, the closure needed for

good group cooperation and control. It may not be able to exploit its favorable position in the overall organization.

Network D represents the opposite case. The team is connected internally and externally, and the environment is also well connected around the team. In fact, the entire organization is one highly connected, cohesive group. While this cohesive group will find it easy to cooperate and be flexible, it has access to only one perspective, skill, or resource, which bears the risk of groupthink. Cohesive networks have been shown to have difficulties in making decisions in uncertain environments.

A team with the network structure B is in the strongest position. The team is internally strongly connected and therefore able to present a united front toward the outside. Moreover, the united team is an information broker, providing the only connection between the unconnected outside parties. This information brokering gives it both power in influencing those parties as well as access to diverse information and opportunities.

A team with the network structure C is in a difficult position. While it is internally cohesive (like team B), it has few links to the rest of the organization, which, in turn, is well interconnected. This structure makes it difficult for the team to tap into external information or resources, and the structure also allows the possibility for important information to reside in the network without team members getting to know about it: The team cannot control, or maybe not even monitor, what is going on around it.

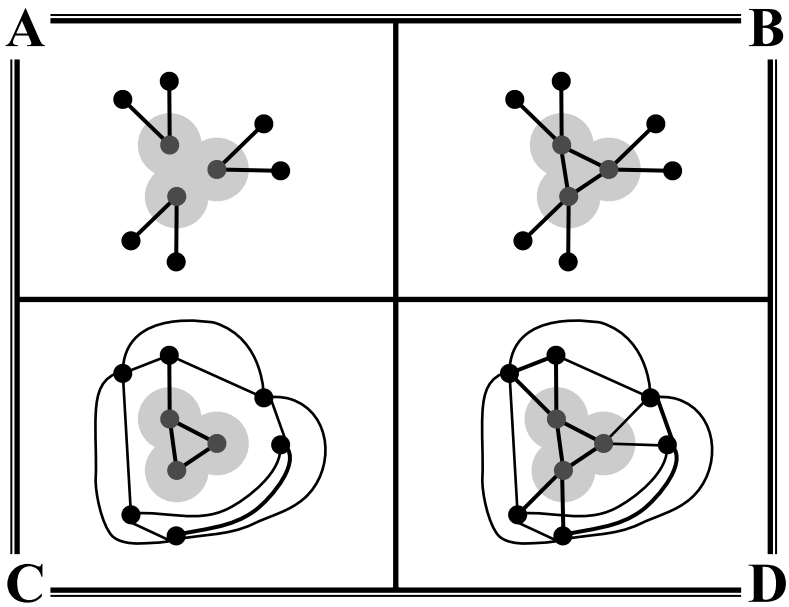


Figure 11.5 Network connectivity of the Vol de Nuit team

The Vol de Nuit team found itself in the unfavorable situation represented by case C: It had only few informal ties with the rest of the organization. The entire organization was highly connected, a cultural feature of the company that had traditionally operated based on informal ties rather than official structures. This made it difficult to use informal power to win support for the project. This unfavorable situation contributed to the fact that the team did not know exactly what the CEO had said about "submarine" (i.e., unofficial, not explicitly authorized) projects.

In summary, the Vol de Nuit team was in a very difficult situation in terms of politics and relationships. Perhaps the team could have attempted more systematically to win natural allies, possibly influential ones. For example, the head of Advanced Engineering had little informal power. The head of Manufacturing, in contrast, was a natural ally, since the carbon fiber technology was something relevant to him, and he had the reputation for being open to new ideas. Being well regarded and listened to in upper management circles, he could have had a favorable influence on the project's acceptance. However, the team did not approach him. While it had natural enemies, it did not sufficiently rally the natural allies.

The reaction of the senior marketing manager illustrates the subtle effect of network relationships. One may agree or disagree with the content of what he said. But it is striking that he made the statement without having seen the prototype or having talked to any of the team members. When people don't know you, or have not had someone whom they trust recommend you, they have no qualms about seeing you in a negative light. The network position of the Vol de Nuit team clearly played a role in the final decision.

11.2.3 Culture

Culture defines, both explicitly and implicitly, "how things are done around here." It defines appropriateness and legitimacy. The sociologist Edgar Schein[10] discovered in the 1970s that cultures are powerful organizational memories of intelligent rules—if every employee had to make a conscious decision at every turn (rather than just following a feeling of what's "naturally" legitimate and appropriate), mistakes would abound and chaos would reign. Chris Bangle, the chief designer at BMW, appeals to the culture of designing the sleekest performance cars when communicating with the organization at large.[11]

As the cultural rules are "automated" and no longer reflected upon, they carry the danger of becoming obsolete when the environment changes. This is well captured by an example in a biography of Thomas Watson, Sr., the first CEO of IBM.[12] In the 1920s, he instituted a policy that IBM salespeople should be dressed like their customers, mainly banks and large conservative companies (to fit in and to foster trust). Three CEO generations later, in the 1980s, this rule had fossilized into the famous "blue suit and yellow tie" stereotype, which made IBM salespeople look entirely out of place

when they were with high-tech clients in slacks and sandals. And yet, when Lou Gerstner scrapped the blue-suit rule in 1994 (in effect going back to Watson's original philosophy), traditionalists howled that this threatened the very core of IBM's culture!

Legitimacy and appropriateness affected the DuoSport project at Lemond: Who had the right to do a "far-out" project like this? Antoine Alsace's New Business Development department had developed strategies and made presentations before but had never gone all the way to functional prototypes. In fact, Breton officially belonged to a sister department, not to Alsace's, and just worked on the project part-time. No one in the organization expected such a breakthrough firecracker to come out of this department, and it scared people. Prototypes usually came out of another department, Advanced Technology. Perhaps an "adoption" of the project by Advanced Technology might have helped (but, of course, that raises turf questions of who gets the credit!).

The second important cultural issue affecting the DuoSport was related to the path of presentation and successive authorization. The project was de facto run like a "skunk works" (industry jargon for a project running in isolation and secrecy from the rest of the organization).[13] The usual practice of the organization was to run projects relatively quickly by upper R&D management, then an investment council, and then the CEO. But the DuoSport had missed that window, having run too far ahead without the CEO being informed (partially driven by the perceived turf conflicts and resistance in the organization). The CEO was rumored to have made the remark, when seeing some pictures, "I thought we didn't do these cowboy projects any more!" The team was now trapped, not daring to show further progress to the CEO for fear of officially being forbidden to continue. Right up to the end, they hoped for the "revelation" at the maiden flight.

11.2.4 Egos and Emotions in the Approach of Individuals

Apart from strategy, political egoisms, and cultural habits, people commonly (not only in business organizations) exhibit three emotional needs that you neglect at your peril: friendship and reciprocity, group identification ("are you one of us?"), and ego. Whether or not you consider them in the way you approach decision makers or supporters may make the difference between support and indifference, between neutrality and hostility.

The first emotion, friendship and reciprocity, is a double-sided one. On the positive side, past investments in people, in the form of paying attention to them, being sympathetic, coming across as fair and reasonable, or helping out, carry benefits that can be "called in." Just put yourself in the situation of being approached with an idea by a colleague with whom you have had a positive relationship for a long time. It will be emotionally very difficult for you to tell that person that this is incompetent and inappropriate for the organization! Your natural bias will be to look for strengths in

what your colleague does, to be negative only if you can't avoid it, and even then to be nice about it. On the negative side, friendship can turn into active hostility if someone feels crossed by a person who was supposed to be trusted. Friendship opens possibilities, but it also constrains you in order to keep the relationships positive.

The DuoSport team was too weakly connected with the rest of the organization to use friendship ties. In other words, the team lacked a high-level *sponsor* that could have provided the external stakeholder connections and lent his or her weight to informally influence stakeholders.[14] Upper R&D management, two levels higher, could have done so, but these managers were either cautious (because of the turf issues) or had not been sufficiently mobilized. This lack of emotional involvement made it easier for the rest of the organization to dismiss the concept.

The second emotion is the feeling of loyalty and solidarity of "Us" against "Them." In some situations, one might be able to mobilize a manager by telling him, "Look, Chrysler just presented the Dodge Tomahawk 400-horsepower motorcycle at the Detroit Auto Show, and it's just a gimmick, but they get lots of press. Do you think we should let them look more innovative than we are? We could steal their fire by showing the DuoSport!"

Third, people crave the stroking of their egos: getting credit for what they have done, receiving compliments for their competencies, being asked for their opinion, and having an influence on events. They absolutely hate the feeling of being bypassed, wrong, or insignificant. The higher they are in the hierarchy, the more pronounced the ego becomes.[15] You can harness this energy by giving someone the chance to feel significant by helping you. A humorous example was told to us by the Mexico country manager of a car company.[16] He needed to coax the Mexico City dealers into upgrading their facilities (which required a significant investment). He called them together and told them: "Only one dealer, Mr. X, is allowed to participate in our upgrading program, because this is only for the best. The others are not allowed to participate for now, and I'll keep you posted." Now the other dealers actively fought to be awarded the right to participate (and invest a lot of money) because they could not stand not to be among "the best."

11.3 Lessons: Map the Decision Influence Levels to Sell the Project

The reader may recall the definition of stakeholders: They are parties who are not participants in the project (as opposed to partners) but who are affected by it, have an interest in it, and can influence it. If a project team attempts to get stakeholder support for, or at least avoid resistance against, a project in a large organization, or in the community around the organization, the analysis in Section 11.2 helps to perform a *mapping exercise* to identify the selling points and the potential points of resistance that you are facing. Naturally, each organization is different in terms of the precise

criteria at each level and in the relative emphasis placed on the levels, but the levels of decision influences are stable categories to consider. The first two parts of the mapping are about the content of the team's *arguments*.

1. *Strategy.* Understand the business priorities of the organization, and map with respect to them what your project can contribute (this may include monetary figures, or qualitative contributions, as long as you can explain them). For example, the DuoSport team at Lemond started working on a "mobility strategy," which might later convince the company to revive the project.
2. *Politics.* Map the key players, what their interests are, how the design project in question relates to each one of them (who will find it helpful, who will find it threatening or distracting?), and who the influential people are. This will imply an approach of garnering support for your project.

   Influence may be direct and explicit, for example, by the position in the hierarchy or by the control of certain key resources. If an influential stakeholder has interests that are hindered by the project, a classic approach in politics is to "trade"—the project management offers the person something in return for supporting (or not resisting) the project.

   Influence may also be indirect and embedded in a network of relationships, working through others rather than through explicit power of one's own. It is therefore important to understand the network structure, who is central in it, and who can play a *sponsor* role of establishing a connection between the project team and the central players. Drumming up informal support through a network requires *persistence*. It takes much time and effort to achieve the "critical mass" of supporters in order to swing the mood of an organization.

   The Vol de Nuit team could not rely on the officially powerful people because they had other interests or did not want to go against the general cost-cutting mood of the organization. Nor did the team have a sponsor who might have helped to rally the natural allies. In addition, the project had some natural enemies. This was very costly in terms of momentum.

Parts 3 and 4 of the mapping exercise are about the *approach* of "selling" the design idea to the organization.

3. *Culture.* What is the "appropriate" way of introducing such a project into the organization? Who are natural sources, what are the accepted channels of communication, what does authority rest on? What, in the proposed approach, feels "unnatural," and why?

   The DuoSport team was an unexpected source of a design innovation of this type, and it was trapped in communication expectations that contradicted the looming political minefield. At the same time,

the company, Lemond, had a proud history of innovations and initiative-taking by teams at a low hierarchical level; the team might have appealed to other people's consciousness of that history.

Going against cultural "habits" requires, again (as in point 2), *persistence* on the part of the project team. As in convincing a user community of a new and unfamiliar design, the project approach first needs to be presented in "weak" form, until it no longer feels unnatural, before pushing with full force.

4. *Emotional needs.* What are the emotional "hot buttons" of the players and intermediaries? Again, everyone is different, but the types of hot buttons are always the same: the desire of personal loyalty, the emphasis on a common group identity against a shared outsider group, and the need of ego acknowledgment.

   This level is closely connected with the principle of *fair process* that we discussed for project partners in Section 10.2.3. If we want stakeholders to lend us their support, and to continue doing so when unk unks force unexpected changes in the project, we must inform them and keep them apprised of unexpected changes and their reasons. Otherwise, distrust will translate into a withdrawal of support.

   This level, like the third, worked against the DuoSport team: They were de facto outsiders (a general problem that skunk work teams often have) and had weak friendship ties to the network of decision makers. The levels of decision influences interacted—the team's upper management preferred to lie low for reasons of political turf, and so the pull of personal relationships was missing as a supporting force.

The DuoSport example shows how a good design idea, with solid arguments for it at the "strategy" level, failed because it was weaker at the other three decision influence levels. Mapping the levels helps you to diagnose where you are vulnerable and to devise an action plan that will maximize the former while minimizing the latter. Recognizing the four decision influence levels is the necessary preparation to navigate the jungle of influences in a large organization or the societal environment.

Endnotes

1. This section is based on Loch 2003 and Loch and Sommer 2004. The name of the project, Vol de Nuit, and the name the company, Lemond Automobiles, are disguised in order to preserve confidentiality.
2. Source: Loch and Sommer 2004.
3. Taken from Loch and Sommer 2004. The picture is disguised in order to protect the confidentiality of the design and the company. The real design is much more elegant than this disguised version.
4. Carbon fibers are very strong with respect to pull forces, but weaker than steel with respect to shear. Thus, simply replacing steel by fibers without a change in the design required much more bulk, which weakened the weight advantages and exacerbated the cost disadvantages. Changing the design in this way had to be learned over time, and the DuoSport was a first test case.
5. See Ancona et al. 1999 for the first three levels, and Loch, Yaziji, and Langen 2000 and Urda and Loch 2005 for the fourth.
6. See, for example, Loch and Tapper 2002.
7. See, for example, Bangle 2001.
8. This project is recounted in Pitsis et al. 2003.
9. For example, Ancona et al. 1999, Gladwell 2000, Baker 2000.
10. See Schein 1985.
11. Bangle 2001, ibid.
12. See Maney 2003.
13. See Rich 1994.
14. Sponsoring, or generating informal support and access to first, "bootlegged" resources, is an important function of making innovative projects happen. See Roberts and Fusfeld 1997.
15. For an illustration of how status and egos influence behavior in an organization, see Loch et al. 2000.
16. Not Lemond Automobiles but a different car company.