Venture Capital and Innovation in Information Technology: Evaluation of the French Public Policy

by

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Abstract

Today, there are hundreds of new ventures in Silicon valley, and on the route 128 in Massachusetts that were created by French people. However, in France, innovation in high-technology has stabilized and did not significantly take off. Aware of this issue, the French government has been undertaking an intense public program to initiate innovation in France.

The following investigation comes from a request of individuals within the French Ministry of Finance. It will examine the specific aspects of the French public program, that promotes innovation in Information Technologies by the means of venture capitalists. Other countries will be evaluated with respect to their public policies.

Another important concern is the establishment of accurate methods for evaluating public programs.

In order to understand the reason for the shortage of entrepreneurs and venture capitalists in France, the investigation deals with an analysis of economic and social realities, it then proposes a recommendation for a future French public policy with respect to venture capitalists in Information Technologies.

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Chapter 1

Introduction

Venture capitalist: venture capital investment is a vehicle for enabling pooled investment by a number of investors in equity and equity-related securities of companies (investee companies). The investee companies will generally be private companies whose shares are not quoted on any stock exchange. It can take the form of a company or an unincorporated arrangement such as a limited partnership.

1.1 The Advantages of Innovation

Innovation has solid reasons for being promoted. It is simultaneously a source of new long-term jobs and a strategic weapon for the nation's technological competitiveness. It also improves the standards of living. Thus, acting on innovation is a tool used by governments for economical intervention. Innovation is a safe investment for a government. It will not only improve the present industrial and economical environment, but also perpetuate these assets by preparing a favorable future. In addition, governmental policies can have a strong impact on a country's economic system by both setting the regulatory stage and by galvanizing the investments in period of downturns.

Create High-Value, Long Term Economy

Innovation creates employment. In addition, it dynamises the industrial world that it touches because it allows the other companies to buy new firms, or their patents, or just use their new

products or services.

Innovation has a huge importance in the creation of the major technological firms of tomorrow. For instance, American entrepreneurial history is filled with glorious examples of numerous high-technology start ups that became huge economical boost to the country. Some quickly obtain a macroeconomic importance at the national as well as a international scale. It is interesting to notice that many of these current macro-technological firms benefited at that time from the support of Venture Capitalist. The case of Digital or DEC is famous, where indeed Digital was funded by a Venture Capital, ARD, as a start up and is now the 2nd in the world computer manufacturing. Microsoft and most of the main IT firms in the US are other examples of this phenomenon.

Enhance a Nation's Competitive Position Through Small Businesses

Innovation is mandatory in the face of increasing technological competition between countries.

It may also be interesting to know whether it is reasonable for France to focus on new ventures rather than focus its support in innovation to already large corporations. There are many different ways of promoting innovation, from acting on the academic system to increasing the aid to research in existing corporations. France already has fine and advanced public research organizations in high-technology like INRIA, or CEA (Centre a l'Energie Atomique), or INSERM (Institut National Supérieur de Recherche Médicale) and up-to-date research laboratories in its corporations, like Dassault or Loreal. Therefore, instead of furthering new ventures, which is a risky and costly enterprise, French public policy may focus on helping existing industrial resources. Nevertheless, if this is a fair concern it cannot be ignored that innovation comes first from small ventures and that existing industries are not sufficient to sustain the necessary rate of innovation imposed by competitiveness of international ventures.

Improve Standard Of Living

By increasing the creation of new products and services, innovation improves the standard of living in the country and the world. It allows people access to cheaper solutions, or gives a solution for unsatisfied needs, and it globally makes happier people. The rate of innovation nowadays is so fast that over a generation of people can actually observe several major

technological change. This speed increases the awareness of improvement.

Conclusion

As we have noticed, the best way to promote innovation is through young technology ventures. Currently there are around numerous new ventures in Silicon valley, or on the route 128 in Massachusetts that were created by French people. However, in France the innovation in high-technology has stabilized. One of the main catalysts of technology ventures around the world is venture capitalist.

Therefore, the French government need to promote venture capitalists in France.

1.2 The Venture Capital Value Proposition

More Profitable Ventures

The financing of a Venture Capitalist is a substantial leverage for a new venture. For example, 1995 revenue growth for venture capital-backed high-growth companies was 36.8 percent compared to 23.8 percent for non-venture capital-backed high growth companies. (Source NVCA [2, 1997]).

Samuel Kortum and Josh Lerner [44, 1998] demonstrated that venture-backed firms not only patent more, but also are significantly more likely to have frequently cited or litigated both patents and trade secrets. This is a way of measuring the importance of a patent.

A Fast, Liquid and Flexible Investor

Venture capitalists are specific sources of capital. Their main asset is their ability to perfectly adapt to the world of new high-tech ventures. They offer a fitting financing with regards to new ventures concerns. It means first liquidity of capital. They inject a lot of capital quickly and with a minimum amount of liability for the entrepreneur. Their financing is also fast and flexible. Indeed, unlike many other funding sources, venture capital firms are usually very fast in choosing which project to fund, (around a month if not shorter). Afterwards they remain a flexible organization and are able to change quickly the initial plan if necessary. This provides an important competitive advantage for venture-backed firms versus non venture-backed firms.

This is especially right in the IT market, where competitive advantage is more significant than anywhere else because of issues such as standard acceptance, or learning curves.

A Selective and Demanding Support

Their only difference when compared to common funding sources, is a more reliable screening of projects which allows them to manage the risk of their operations.

Finally, they have a positive influence on the venture staff, by playing for the success of the firm overall. They ask the staff for higher commitment. They ask them to commit financially in the venture in order to have an incentive to continue on through a hard times. The entrepreneurs need to focus on their work and not be distracted with liabilities of debt. In order to permit entrepreneurs to focus, venture capitalists take participation and stock options in the ventures. This flexible way allows them to be able to have a power on the board as well as being able to disappear profitably in case of success.

In addition, the experience curve in the private capital industry is very slow. When evaluating people and ideas, the volume of past projects is very important.

A Committed Organization

Venture capital firms are more committed to the success of the venture than any other funding organizations, they have an entrepreneur's mindset. Actually, they are often general partners in a limited partnership with an investor. They use funding that does not belong to them, and for which they are liable too. On the other hand, if the funded venture is a success, their opportunity of profit is enormous through the IPO. Thus, VCs are very motivated because they have much to gain from success and much to lose from a failure. Often the characteristic of venture capital that is appreciated the most by entrepreneurs is the constant involvement.

A Noted and Experienced Friend to Introduce You to the Business World

Unlike other institutions that are either more diversified or less motivated, they bring economies of scale by running several different ventures simultaneously. This allows them to give entrepreneurs access to higher quality services when compared to the ones a single venture could afford. For instance, venture capitalists introduce their portfolio ventures to their connections in the

venture world, good lawyers, good CPA, efficient CEOs and professional workforce. They also help them with suppliers and corporate customers by using their name as a business card.

Beside their network, entrepreneurs benefit from their experience. We should not forget that for every accepted project they usually have auditioned hundreds of them. Therefore, they usually have a good vision of what innovation is and are ahead of the emergence of new trends, products or technologies on the market. When compared to entrepreneurs who are focused on a particular project, they have a better idea of what the IT world will be in a near future than entrepreneurs that are mainly focussed on their particular project.

In addition,VCs corporations develop a network of bright people that help them make the right decisions. For instance, they benefit from diversified participations of technical experts, business analysts, and senior management.

They complete efficiently the entrepreneur's qualities. They bring to the firm some credibility towards other stakeholders in the business. Because of informational asymmetries, there is always something that is not objective in the evaluation of public high-tech new ventures. Underwriters trust you more if they know you have a solid financial backing, and recognized professionals that monitor your actions. Finally, on the path of growth the history of a venture capitalist reassures other capital providers which you may need for the next stage funding.

1.3 Two Goals

Genesis

This work comes from discussions with people from the Department of Treasure in the French Ministry of Finances and people in the French Ministry of Research. They were working on a process to improve innovation in France through venture capital, and wanted to gather more information on the various successful public policies abroad. In the implementation stage they wanted to emphasize the evaluation mechanism that they deemed misconsidered.

The Two Goals

The first goal was to give a recommendation on the current French policy, with as baseline an analysis of the current situation, as well as of foreign countries. The second goal was to give an

exhaustive treatment to the evaluation process.

As parallel goals, we decided to make it a complete analysis and a deep presentation of all the structures that are involved in the process.

The Method

In the first part, we will be exposed to a global background of both the financing world and the venture capital world. The following work aims at evaluating the French Policy in its promotion of Venture Capitalism in France. By evaluating the choice of the French policy and by comparing it to other public policies, we will be able to benefit from the past ideas as well as not to repeat past mistakes.

Chapter 2 is an introduction to the complex framework of our policy. We first look at the various features of new ventures in IT, then at the general features of venture capitalist. Through exposure to the world of Venture Capitals and Entrepreneurship we will try to understand, their functioning, constraints, and issues.

In chapter 3 we try to make an objective description of the French environment, which is where we want our policy to be effective. We look at the venture capital industry, and its global fiscal and legal framework. Finally we present the current policy.

Chapter 4 is a personal assessment of the French situation. We start focusing on specific countries or regions, the United States, England, Germany, Israel and others, and look at their public policies. Then, we analyze the strengths and weaknesses of the French system.

Chapter 5 is our recommendation.. It starts with a breakdown of our policy recommendation, then we emphasize the evaluation recommendation. Finally, we give our recommendation for implementation.

Chapter 2

Background/ General Framework

2.1 The SME in Information Technologies

First we need to define our specific target, high-technology firms. By high-technology we mean Information Technologies (or IT) and Healthcare.

The Information Technology sector breaks down into communication and networking companies, electronics and computer hardware companies, information services firms, semiconductors firms, software, and others. It is, of course, the leading sector as to the invested amount, return rates and volume of new ventures.

The Healthcare sector breaks down into biopharmaceutical firms, healthcare services, medical devices, medical information systems and other healthcare companies. It also has a growing value for venture capitals and it is a peak sector for development. However, it will not be our subject in this paper.

In order to adequately design policy we need to understand the dynamic that young ventures go through over their lifetime, as well as the specific features of the Information Technology market.

2.1.1 The Different Stages in the Life of Small Businesses

The following points come from various classical works such as Churchill's work [33, 1983]; and its French translation [34]; or Greiner's one [18, 1977] and its French translation [17], and also the Que Sait Je about Venture Capital, [29, 1997].

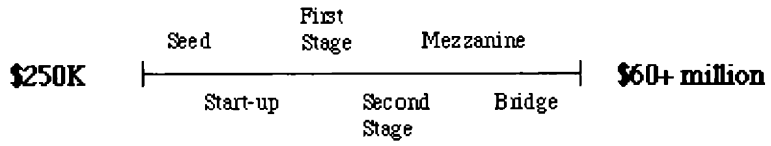

Figure 2-1: The Five Different Stages of a Young Venture from the Seed Stage to Maturity

Duration:	1 to 5 years
Revenues:	none
Annual results:	losses
Investment:	between $1,000 and $500,000
Capital source:	seed capital ("capital d'amorçage"), R&D Partnerships
Management style:	entrepreneur or engineer
Organization:	informal

Table 2.1: Seed, or Research Stage Features

Ventures go through various stages from the time they exist only as ideas and the goodwill to the time they become actual mature companies and, eventually, public ones. (refer to figure 2-1) Each path or timing is individual and depends on the venture, but in every case each of these steps keep similar patterns in size, diversity, complexity, management style, and organizational goals across the ventures. Each stage is also marked by a certain stability in the management of the venture, yet, there is growth in revenues, and is very different from the previous or the next one. In each of these stages success depends on different qualities of the team and on the environment. This is also why a public program cannot help each stage through the same uniform program.

Although, we describe below the high-growth organizations, we have to remember that the expected growth is not the same at each stage. If it is fair to expect that every year a start-up increases its revenues by 2, or 5,or even by 10, a mature company with a growth rate of 15 % is still a high-growth company. The transition between two stages is likely to be difficult, because it implies major changes in the management style. This is the main reason of a failure for young ventures.

Duration:	1 to 3 years
Revenues:	up to $2 million
Annual results:	losses
Investment:	between $50,000 and $1 million
Capital source:	start-up capital ("capital de démarrage"), "capital risque" and "capital de proximité"
Management style:	direct supervision of entrepreneur
Organization:	informal

Table 2.2: Start-Up, or Existence Stage Features

Stage 0: Seed, or "Recherche Développement"/Research

(Refer to table 2.1) This is step zero, which occurs even before the real start of the venture. The venture has no legal status and often is only an idea. Its management is its only employees, they usually have a job outside, and develop their prototype during their evenings or weekends. The question is whether this team is able to realize its prototype and create a company within the constraints of time and cost and with the expected result. In this case the owner is the only staff member, and his main concerns are to increase his clientele and to sell his products, or services.

Stage 1: Start-Up, or "Naissance"/Existence

(Refer to table 2.2) The firm completes product development and begins initial marketing, but does not sell commercially yet. Thus, its goal is to find customers. This step requires an important investment in order to cover the initial substantial losses. There are, of course, investments in the fixed assets, but also intangible investments, like initial registration fees, cost of hiring and training new employees, etc. Usually, if a company is not supported by a fund, the initial capital injection comes from the family or relatives of the entrepreneur. This is why such resources are also called the "Love Money". It is a very painful experience for the entrepreneur physically as well as mentally.

Stage 2: Expansion, or Early Stage, or "Survie"/Survival

(Refer to table 2.3) By exiting the previous stage, the venture proved that it is a viable company with sufficient clientele. In the short-run, concerns are to balance gains and expenses, and in

Duration:	2 to 3 years
Revenues:	between $2 million and $20 million
Annual results:	losses or break-even point
Investment:	between $500,000 and $15 million
Capital source:	"capital risque" and "capital de proximité"
Management style:	supervision of entrepreneur or professional executive
Organization:	simple, but developing: mainly, sales department

Table 2.3: Early, or Survival Stage Features

Duration:	3 to 4 years
Revenues:	between $10 million and $50 million
Annual results:	0 to 10% of revenues
Investment:	between $2 million and $15 million
Capital source:	development capital, or "capital de développement" and "capital risque"
Management style:	entrepreneur or professional executive
Organization:	by function

Table 2.4: Later, or Success Stage Features

the long-run, to obtain enough liquidity in order to self-finance its own development. For the manager, it is a hard time, he must simultaneously demonstrate the rentability of his investments as well as invest in the future. It usually requires an additional injection of money in the company. The management structure takes shape and starts hiring qualified employees. Such company may grow and get to stage 3, or remain in stage 2 forever, and go out of business when the owner gives up or retires.

Stage 3: Later, or Success Stage,or "Réussite"/Success

(Refer to table 2.4) The venture reached a stable threshold. At this stage, the entrepreneur has the choice between two options for growth: it can either be, success-disengagement or success-growth. In success disengagement stage, he decides to give up his involvement in the company, or to use it as a leverage for other activities. On the other hand, if the entrepreneur chooses to embrace the growth opportunity by throwing everything in the success-growth stage, he would have to prepare his company by strengthening its financial base and gathering suitable workforce. This is the time when he needs to radically change his management style, from an omnipresent manager to a global leader with a vision who knows how to delegate responsibilities

Duration:	2 to 5 years
Revenues:	between \$40 million and \$100 million
Annual results:	0 to 10 % of revenues
Investment:	\$2 million and \$20 million
Capital source:	mezzanine capital, or "capital intermédiaire", or development capital with a possible IPO
Management style:	professional executives
Organization:	decentralized, divisonalized mainly between sales and production

Table 2.5: Mezzanine, or Take Off Stage Features

to his staff.

Stage 4: Mezzanine, or "Décollage"/Take Off

(Refer to table 2.5) This stages implies two major problems: fostering high growth and being able to finance this growth. Besides, high growth also increases the risk of mistakes. The main control is the ratio between the self-financing of the company and its debt. Organization is decentralized and may be broken down by division. The management of the firm demands detailed strategic planning on everyday basis.

Brand new qualities are required from the management at this stage. The ones that enabled to bring the venture to success so far, are usually unsuccessful. The owner must, especially, avoid two classical mistakes: the omnipotence syndrome when he tries to run too fast and runs out of cash, and the omniscience syndrome when he proves unable to delegate. This stage also involves much larger capital injections. This is also the time when the original funding organization may let another bigger organization take over. These new investors target a relatively fast exit process, around 3 to 5 years, and are often chosen for their ability to prepare the venture for its IPO. Since at this stage investments are safer, investors are not as much interested in big return rates (only 20-25 %) as the original ones were (expected return 30-50 %). This major expansion stage is usually leading to an IPO in the next 3 to 18 months.

Stage 5: Bridge, or "Maturité"/Maturity

(Refer to table 2.6) The venture is now a mature company in its assets, its size, its financial resources, and the skills of its management staff. Its concerns are to enjoy and strengthen its

Duration:	3 years to undefined
Revenues:	over $60 million
Annual results:	N/A
Investment:	N/A
Capital source:	stock market
Management style:	experienced professional executives
Organization:	decentralized, experienced, complex

Table 2.6: Bridge, or Maturity Resources Stage

financial growth while avoiding the inertia of larger structures. For this purpose, numerous standard strategical tools, like budgets, strategic plan, management by objectives and cost-systems, are used.

The venture may enter the sixth stage, ossification. This stage is characterized by lack of innovative decisions and risk-averse behaviors. Then,usually, the company gets beaten by competition, and may reverse to earlier stages.

2.1.2 IT Ventures

The Business

As we said previously, Information Technologies (IT) break down into software, communications and computer hardware systems. In order to design a suitable framework for innovation in IT to be launched in France, we have to be aware of the future opportunities in this industry. This is why I tried to outline different areas of IT where experts expects significant breakthrough in the next decade. The following comments are mainly inspired by Hambrecht and Quist [21, 1998] and by the published research of Price Waterhouse [6, 1998].

Software: first, we have the increasing use of 3D graphics for PC applications. Currently, the technology is mainly used and developed by computer games industry, but it is expected to be used more widely in software industry. Of course, the use of Internet has already proved to be popular and profitable. The opportunity of having many services at home and of reaching customers more directly, should lead soon to having the access to the Internet from every desk top. Non-linear video is predicted to beat and replace the standard TV quality; it is also expected to create a whole new industry. Databases are used more and more in the today's applications. In many cases informational content takes precedence over the application itself. Besides, the

amount of information available breeds a demand for effective screening and good management of data. The latest technological developments allow the industry to keep significant databases in mainframe memory. This is expected to cause a major change in the way databases and related applications are designed. Travel software and optimization of transportation networks had huge success with the increased demand in, for instance, airline reservation, as well as with the enhancement of corporate distribution networks. Image and voice recognition are the next steps after the multimedia stage. This is also due to the increased capacity of computers and networks that enable us to transmit, store and manipulate considerable amount of digital image data.

Communications and Networking: The optical fiber networks seem to be a very promising technological area. Optical switches cope with the current limitations of electric devices. Besides, the bandwidth that is so far delivered by optical network, is presently below the underlying capacity of fiber optics. Video Dial Tone (VDT) and, specifically, symmetrical video dial tone are likely to bring about another commercial and technical breakthrough. Remote Telepresence, like teleconferencing, remote instructions, and remote working environments, should create new needs and new forms of businesses. Likewise, wireless networks offer possibilities of using applications everywhere, even on the road. This tendency is even more emphasized by the parallel trend of increase in the scope of wireless networks, for instance, through global satellite telephone networks. Computer Telephone Integration is expected to have huge consequences by integrating two separate networks, yet very interrelated. Asymmetric Digital Subscriber Line (ADSL), a technique that enables data transmission at high rates on phone wires. It would especially allow households and small businesses to have faster access to external networks. High-Definition TV (HDTV) is also expected to become another step forward and will allow new applications of TV. Network security will become a growing concern, as networks increase thus increasing the vulnerability of corporations.

Computer Hardware and Systems: The primacy of computer networks is expected to be the next trend for the future. Gigabit bandwidth networks will replace current networks. This will radically change the architecture of computers.

Critical Business Factors

We can name 5 critical business factors: ubiquity, interconnection, bandwidth, popularization, and speed.

Ubiquity: people want to be able to enjoy the same application wherever they are and whatever they do. The trend is for the most portable and the most mobile. They want to be able to bring their laptop everywhere, thus devices become smaller and smaller, lighter and lighter. People nowadays want to be able to use their computers and have the same access to networks as if they were at home. Companies must customize their products to be "network friendly", and networks must be designed to play more and more important role.

Interconnection: A big issue in IT is the multitude of standards at every level. However, users want to connect to networks without thinking about the standards. This requires a huge effort from the ventures to become compatible with different standards. Usually, it is accomplished by wise strategic partnership between young firms that complete each other's products or services. The issue of standard is also very present in respect to geographic portability, because prevalent standards differ on each continent.

Bandwidth: Unlike processing power, available bandwidths evolve unevenly and vary geographically. Its recent increase in some places has drastically increased the opportunities for innovative high-technology solutions. On the opposite, its static character is a bottleneck for domestic innovations, that should raise redflags for governments.

Popularization: At the beginning governments were the primary initiators of IT through big public or military orders. It was particularly true during the Cold War. Now the main driving force is common people, and the challenges come from popular usage; user-friendly design, entertainment side and personal access to information and services are the factors that drive IT market nowadays.

Speed and market share: A lot of critical factors are tied to speed. First of all, we need to describe briefly the IT industry in order to understand the role of speed factor. We can describe the IT industry as very competitive. Unlike classical industries, marginal costs appear to be very low and allow increasing returns. Besides, technical barriers to entry are also very low. With the change of speed in IT, and the emphasis on these technologies in academic and public research environments, past experience in this industry does not grant any technological

advantages for further development. The product life cycle is usually very short and varies from 3 to 10 years from the introduction of the product in the market to its complete replacement or withdrawal.

Another feature is high-sensitivity of cost structure to the volume of production. There is a usual disbalance in the IT industry between the large initial cost of design, equipment, etc., and the relatively low marginal cost materials, production delays, and labor force.. This ties higher profits to higher production scales. A good example to illustrate this is the manufacturing of electronic chips or electronic devices. Besides, other factors weight towards higher production scales. We have, for instance, the learning curve factors, that cause approximately 20-30 % reduction in information product cost for doubling in experience measured by the volume of manufactured products.

More generally, a lot of advantages are related to a higher market share. Among them, according to George Young ([58, 1985]) the S-shape evolution of the sales over time demonstrates the impact of network externalities. They are mainly of two kinds: one is a struggle for standard-acceptance and portability. There are numerous standards in the market. Even at each phase of computer design different standards prevail and compatibility with them cannot be avoided without endangering the scope of one's market. Microchips have various standards (Intel, AMG, Sun, DEC), operating systems have various standards (Windows, Mac, Unix), applications have various standards (Word, Excel, Lotus, Postscript, GIF, etc.), and likewise, this is true for networks, hardware, etc. Standard is often considered a the strategical feature, and established companies use them as barriers to entry. By expanding their market share, technology ventures manage to impose their new standards. Their impact is then leveraged by the action of all the other applications in related areas that are forced to be compatible with the imposed standards and thus make them even more compulsory to the public. The other interesting factor is that being famous is really an important asset for an IT company. Even unconsciously, people expect an extensive customer support from such a company. Simple concerns like an immediate update when standards change, or a continuous development with new releases that fixes bugs, or any other additional options may be very demanding requests to be really offered by companies with a minimum size, and a minimum market share. This causes war of standards and credibility. In both cases we have seen that market share is the

barrier to entry, and that it is rather a strategical barrier than a technological one. This is also why, in order to enjoy the increased threshold in sales, companies need to obtain a critical market share early in the life cycle of the technology. Otherwise, they will always stay behind, even with very aggressive pricing policy.

This demonstrates the importance of the first-entry advantage. Firms need to be aggressive at a very early stage by obtaining a substantial market share and keeping it all along the way. To do so, they need substantial financing to support their tremendous growth rates. Keeping the first entry advantage requires also from the company to be fast enough and react to any changes in the technological environment as well as always respond in time to growth expectation.

Financing Needs

We have seen that IT firms require major initial cash flow in order to embrace strategical goals and yet, the classical banking system does not meet their needs. IT firms are often characterized by very few physical assets, or none at all, and their only value is in their ideas and goodwill. Thus, it is hard to determine the value of the firm with only intellectual property and no patents. The evaluation of human assets and ideas is not easy and is very time consuming for banks. Besides, if the company takes loans, then its potential gain is capped, and the importance of the success does not matter as long as the venture can pay its bill. Consequently, it is hard to obtain substantial cash injections that are necessary to embrace the growth and face the competition. The IT business with high initial investment and potentially high returns is a high-risk investment thus banks do not want to commit to, at least at the early stages, in order to avert potential risk. Other financing models are more appropriate to support IT ventures.

2.1.3 Entrepreneurs

Entrepreneurs' concerns are usually very different from corporate or public concerns. The main consequence is the remaining misunderstanding between public authorities and entrepreneurial world. It is thus important to understand the main concerns of entrepreneurs of technology-based start-ups. For the success of a new venture there are very important elements that are necessary to gather. Most of these elements of reflection come from the MIT Entrepreneurship Laboratory.

The diversity of backgrounds of the team is one of them. This adds to the company's richness and polyfunctionality. In the diverse team the importance of the sales people is too often underestimated, yet, at first, a venture is created to be profitable, and the main inflow of money comes from sales. For instance, 80-95% of "purely technical" spin-offs fail, while 80-95% of MIT teams that combine marketing, business and technical skills, succeeded.

Being accepted by society is an important issue. It breaks down into different issues. Acceptable failures is a strength of the US society compared to Japanese and German ones, but also, to a lesser extent, to the French one. Accepting failures without making them final, allows entrepreneurs to start again. On the opposite, not accepting them, by prohibiting one-time bankrupted entrepreneurs from finding any financing dramatically increases the risk of starting a new venture. It does not take into account the additional experience of the entrepreneur even in the case of failure. This must not be mixed up with a loose enforcement that will breed abuses of the bankruptcy option. It is a reasonable trade-off to leave open windows of opportunity for potential entrepreneurs.

The flexibility of labor market can also greatly reduce the risk of creating a venture. For instance, if the labor market is not flexible, the entrepreneur may initially be concerned with never being able to have a successful corporate career later in the case of failure. Besides, the team, he wants to bring together, may be scared to risk their current job opportunities, if they are uncertain of finding other, equivalent ones, in case of failure of the project. On the other hand because the French labor law protects the employees a lot. It is very hard to fire somebody. Contrary to the US labor market where the hiring is at will, and thus, by default the employee can or may be fired whenever the employer would feel like it. This causes French entrepreneurs to consider labor to be a fixed cost rather than a marginal cost. This difference makes the decision of creating a company even harder for potential entrepreneurs.

French entrepreneurs should feel no embarrassment in money-making. Being an entrepreneur is motivated by having some kind of freedom as to one's agenda, and also by having potentially huge gains in a very short time-period that are not capped as they would be in the corporate world. Shrinking this window, or criticizing profit-making activities is a direct offense to entrepreneurs. It removes one of the entrepreneurs' biggest motivation and rewarding for risk in case of success.

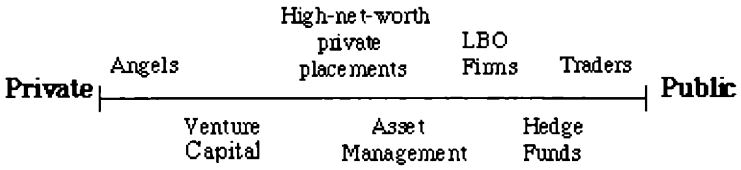

Figure 2-2: The Buy-Side of the Financial Industry

Being able to protect its market with patent or copyright is also a classic concern of entrepreneurs, especially if he committed for important amounts of money. It requires a fast mechanism for filing patents as well as a strong enforcement.

Exiting the owner's seat is also an important discussion. First calling a professional CEO at the head is a hard step and considered as a loss of power. Going public is risky and costly for entrepreneurs and most entrepreneurs do not trust shareholders to bring their venture to success. They fear a too-short term profit-oriented vision, while they would prefer long-term strategic plans.

2.2 The Capital Market

New ventures have different options to obtain their initial capital, or the required capital to move to the next stage of development. Let us examine these options and find out which ones are the most suitable for the new high-tech ventures. We can call this also the "buy-side" of the financial industry. For instance, venture capital firms are on the "buy-side" because they are characterized by having a pool (or fund) of money to spend on buying assets of operating companies. The buy-side break-down is shown in the figure 2-2.

Generally speaking, buy-side firms make money when they can sell their equity to another private investor, a corporation or to the public markets for more money than they paid mutually. Descriptions of each segment of the buy-side are included below. A good summary of their suitability for funding new high-technology ventures is provided in the first part of the good analysis from Leslie Jeng and Philippe Wells [27, 1998]. As we will see, bank loans are not the most suitable capital resource for early-stage ventures. Therefore, the demand for high-capital injection in potentially high-margin ventures developed a parallel source of capital, the private

equity market that appears under various forms. The following remarks are mainly inspired by one of the courses at Harvard Business School [14, HBS course].

2.2.1 The Public Side

Banks

Depending on the local laws that regulates financial life, the banks are likely to play an important role as financial intermediaries for new ventures. For instance, in the countries with a bank-centered financial system that allow banks to hold equities and simultaneously provide loans, like Japan or Germany, the banking system is well developed and plays a major role in the financial life. Hence, loans and leveraged buy-out are more common. However, in other countries where the system is more stock-market-centered, like in the US, where banks are prohibited from holding equity, the role of banks is less significant, and the potential IPO is the main source of value for a company seeking for capital. But even in Germany and Japan, debt-based finance are not the main source of financing for start ups. Since banks are limited in their revenues from the venture to the interests and the principal the loan, they will not push the venture to do more than what is needed.

Captive Funds

Funds are labeled "captive" if more than 80% of their financing is derived from one source. Usually they are subsidiaries of banks. In France in 1995, captive funds accounted for 37.1% of new funds raised. Their prevalence in Europe is one of the biggest difference with the US.

Corporate Investing

Alternate means of financing is through corporate sponsors. This is a recent but growing trend in the world of high-technology corporations. Corporations prefer to let young ventures run risky advanced research development program, and the official corporation laboratory takes over when the project outcomes are known better. This is a way of managing risk by keeping a real option open. Often backed ventures are created by people related to the company. On the other hand, corporations also like to invest in external new ventures that are related to their area. Thus, a way of protecting themselves against potential competition is by monitoring the

evolution of research and technology. Often corporations provide not only money, but also office space, access to resources (other than cash), and proximity to like-minded technologists and marketers. Corporations usually create separate organizations to conduct this venture capital business. For instance we have Cisco, or Lucent Venture Partners, Inc., or Motorola Ventures.

However, this governance model can reduce the chances of success for start-ups. Numerous works were done to explain that young ventures may undergo various issues: legal difficulties, if corporation has access to ventures' proprietary information, or impossibility of operating autonomously,slow approval process, etc..

As a conclusion, Paul Gompers and Josh Lerner demonstrated that corporate ventures had equivalent results to the venture capital ones, when there were similarities in the business of the corporation and of the venture otherwise performances were not as good [15, 1998].

Traders

Divisions within sell-side companies (merchant banks, commercial banks, and investment banks) that control and invest huge sums of money into public markets (stocks, bonds, commodities, currencies, etc.), by taking bets on market fluctuations. However, this is a true source of capital for companies that are quoted on stock markets. In order to become public a company needs to demonstrate a certain maturity and stability. This is possible only to later-stage ventures.

Hedge Funds

Hedge funds are limited partnerships, or corporations, that buy and sell public market instruments (stocks, bonds, commodities, currencies, etc.), taking bets on market fluctuations. They are usually unconventional funds, that use strategies other than invest long positions in bonds, equities (mutual funds), and in (money market fund). For instance, they can use short selling, arbitrage seeking, trading options or derivatives, using leverage, investing in "unrecognized, undervalued" securities, or attempting to take advantage of wide spread mergers or hostile takeovers. They set order usually their strategy in order to hedge risk. Another characteristic of hedge funds is that they tend to be specialized, because professional investors understand strategies and typically invest in a fund because of its manager's expertise in a particular investment strategy. The size of these funds ranges from a few million to several billion dollars.

We may want also to cite mutual funds that have a much more regulated investment strategy towards short-selling and options. However, the future performance of mutual funds is highly dependent on the behavior of the equity markets. If we compare equity market to the ocean, then mutual funds can be compared to a boat, while hedge funds with highly predictable performance look more like submarines.

We also want to introduce a fund of funds. It is a fund that mixes the most successful hedge funds and other pooled investment vehicles. Such funds allow to enjoy the expertise of the different funds and, therefore, to deliver more consistent returns.

Leverage Buyout Firms

Leverage buyouts forms are limited partnership, or corporation, that purchase a controlling interest in one private or public firm using their own capital combined with (leverage) as a debt financing from third-party banks. The goal is to take over assets or operations of the acquired company. New management is typically put in place and the company is often taken in a different direction. The size of these transactions can range from $1 million to many billions of dollars.

Asset Management Firms

Asset on management firms represent highly diverse groups of limited partnerships, or corporations, managing between $5 million to $20 billion, focusing on diversified investment strategies with public assets (equities, bonds, commodities, currencies, etc.).

2.2.2 The Private Equity Market

The world of the private equity market is characterized, first, by important informational asymmetries. Unlike the public equity world, there is no need for disclosure and there are no available studies of the firms by business analysts. Thus, funding involves financial constraints, such as evaluating the firm and its potential value, as well as monitoring it. This can be only accomplished by intermediaries that sell their expertise in evaluating firms to bigger investors that confide them with their money. Usually, the legal structure is a limited partnership or a fund.

High-Net-Worth Private Placements

High-Net-Worth Private Placements describe a situation when a sell-side company organizes a group of very wealthy individuals, corporations, asset management firms, and/or pension funds to make a direct investment into a private company. The amount raised from these sources is typically between $5 million and $50 million. In essence, the sell-side company is enabling the investors to bypass the middle-man (venture capital or equity investment firms). The downside is that, first, the company into which the money is invested doesn't benefit from the expertise of the venture capital firm, and, second, the sell-side company requires a substantial fee for its services.

Venture Capital Firms

Venture capital firms are limited partnerships, or corporations, that typically invest between $250 thousand and $20 million in the seed to later stage private companies in exchange for equity. The venture capital sit on the board of directors and bring with them their business experience, industry and, financial expertise, and also networks to support the company.

Angels

Angels are wealthy individuals with operating experience who typically invest between $50,000 and $1.5 million in exchange for equity in a young company. They often sit on the board of directors contributing their experience and advice in guiding a company through the difficult initial stages of growth.

Management of Buy-In Firms

Management of Buy-In Firms are outside investors that purchase a controlling interest of a company, but who leave management unchanged.

2.3 Venture Capital Industry

2.3.1 General Features of Venture Capitalist

A Flexible and Motivated Organization

Venture capital is small but dynamic structure, it has a quick and accurate decision making staff that bases its choices on a tied symbiosis with a network of experts.

First of all, venture capital has a small management staff. It is often a partnership, with 3 or 4 partners and as many assistants. Even in big venture capitalist funds the number of partners rarely goes over 10 people. Such ventures usually have very limited administrative support with and accounting staff. They compensate their shortage in workforce by the intensive use of outer services such as consulting firms, business analysts, marketing specialists, lawyers, and so on. Their purpose is to limit their overhead costs and increase the flexibility of the firm that can choose whoever provides the best service at the present moment. In addition to this flexibility there is a limited number of members on board who make investment decisions. Usually one or two representatives of the investors are on board as well. As a result, venture capital industry offer a flexible decision making process.

They are also very dynamic and can be characterized by their very active and aggressive marketing strategy. The market is very competitive, and a winner is wanted by everyone. Thus, venture capitalists are eager to contact anyone who is likely to have new projects. They market their service in universities, within corporations, in specialized directories, at special events, and on networks.

Their main strength, besides their individual qualities, is their impressive network. They have high-quality technical advisers in any field, as well as financial advisers, and a network among major investors.

An important criterium that differentiate the venture capitalists from other private capital sources (like business angels), is in a legal difference between the fund owners and the fund management team.

The Relation with Other Stakeholders

The venture capital funding is the gathering of at least three organizations: a big investor that tries to invest his capital with higher expected gain than the market; a new venture that tries to find some capital to finance its ideas; and the intermediary, the venture capitalist. This is why a contract with a venture is always a fine equilibrium between the venture capitalist, the entrepreneur, and the investor (see Black & Gilson, [9, 1997]). Each party has developed tools to optimize its own gains and remind the others of their responsibilities. Likewise other parties like the underwriter in case of an IPO

As to the legal matter, venture capitalists are mostly partnership with the investors. Paul Gompers and Josh Lerner [40, 1998] specified that VCs compensation entails a fixed fee based on capital, or assets under management (around 2.5% of investors initial commitment to the fund), and a percentage of the profits (often 20%), also called a "carried interest". The initial search of investors on a project is called the "capital calls".

Among other concerns, the entrepreneur would also like to be protected against the danger that the venture capitalist serves its own interests and not those of the entrepreneurs. If entrepreneurs and venture capitalist have almost the same concerns at the beginning of the contract, the closer they arrive to its end, the more different their concerns become from each other. On the one hand, the entrepreneur tries to have a successful firm with a long-term vision, while the venture capitalist tries to optimize his profits through the exit mode with a short-term vision. This may lead to differences in the choice of the exit mode, as well as its timing. This is a reason for the lock-up agreements between the venture capitalist and the entrepreneur.

Venture capitalists also have "lock up" agreement with the underwriter institution in which they promise to refrain from selling their shares for several months after the IPO. This is to prevent the venture capitalists from overrating portfolio while selling them to the underwriter.

When venture capitalist decide to liquidate its position, there are two alternatives. First they can sell their shares on the stock market and distribute cash to limited partners. However, more often they distribute shares to each limited partner and, frequently, to themselves as a compensation. Then,there are then indeed no SEC intervention. It does not fall either under the law of restricted sales by corporate insiders, because limited partners are not considered insiders. Therefore, the venture capitalist can dispose of a large block of shares more quickly.

Besides, tax motivations can be also an incentive to distribute shares. Investors may be willing to postpone these taxes by receiving distributions in kind and selling the shares at a later date. Finally, selling the shares, instead of distributing them may have a bad influence on the stock price.

Different Types of Organizations

There are different types of venture capital funds inside the same country as well as they may have different importance across countries. Usually the preferred structure implies a single layer of tax.

Independent funds: they are usually organized as limited partnerships with the venture capitalist as a general partner for a 10-year period. This is the most common organizational mode. In this case, the venture capitalist in fact, plays a role of intermediary by recommending the new venture to the major investor. The investor usually finance at 80%, versus 20% for the venture capitalist. Usually at the end of the contract, the venture capital firm either redistributes some shares to the investor or sells them on the stock market in order to pay back to the investors. In the US, they are the most important group. The venture capital firm's staff receives a fixed income in accordance with the size of the fund, as well as 10% to 20% of the gains from the operation. Usually, in the US venture capitals all belong to the NVCA. In Europe they mainly belong to the EVCA.

There are other forms of venture capitalist, called "secondary" partnerships, and specialize in purchasing the portfolios of investee companies that are already investments of an existing venture capitalist.

Corporate groups spin-offs: the main examples come from the high-tech corporations, like IBM or Apple. Because of diverse hurdles due to the difference of goals between the big corporation and the new venture, the trend moves to a corporate preference for using independent venture capitalists.

"SBIC": this type of organization appeared due the American Small Business Law of 1958 to promote small new ventures, especially, regional ones. The law was renewed by 1994. It is a model of partnership between the public and the private sectors. The SIC are mainly monitored by the Small Business Administration, that issues them a certificate. They are

mainly private, but benefit from the long-term loans with preferential rates that are warranted by the government. They represent 10% of the resources of the American venture capitalist industry.

Syndication of Venture Capitalists: being a part of a network of other ventures is primary as well. In order to mitigate the risk of venture, venture capitalist have a need for syndication, co-investing with other professional venture firms. Thus there are more capital resources for the investee company. Each firm will bring some competitive advantage. We can, for instance, imagine that the two venture capitalists are two experts of the software market in two different European countries.

2.3.2 Venture Capitalists' Framework

A venture capitalist has the following concerns: how to give an accurate initial judgement about an idea or an existing venture, how to invest in a way that they can keep a certain control over the management of a new venture, and how to exit in a profitable way, as well as in matters of cash flows of reputation.

Evaluating an Initial Project

Evaluating an initial project, the selective screening of projects by venture capitalists,is a famous barrier to entry. Only 1% of the applying projects go through. We also need to understand the responsibilities of a venture capitalist. He commits to major investors which play an important role in managing the capital. In addition, he commits his new venture for long-term contracts. We should not forget that often, the younger the firm is, the riskier it is to evaluate its chances of success.

Thus in the initial screening there are four major critical goals for the venture capitalist.

1. Assessment of entrepreneur and his team: this is the first concern. Most of the success stories are rather tied to the team than to the idea in itself. The path to a mature venture will be painful and hard for the team. It is very important for the venture to be sure that the team will not give up along the way.

2. Assessment of product and market: usually new propositions are targeting a market that

does not exist yet, because of the innovative character of the product. For instance, most of the new services on the web are not using an existing demand, but only a potential market of customers that are still unaware of their needs. In a certain way, the entrepreneurs create their market, by making their services available. Anyway, it is difficult to make any forecast, as about the future opportunities of the new firm before the actual availability of the service.

3. Assessment of financial plan: the financial plan is the very focus for any venture, since every venture during its lifetime starts with a period of losses and needs to learn gradually how to become profitable and self-financed.

4. Assessment of a Business Plan: it is the best way to assess a team and a project. A business plan describes how the entrepreneur sees his potential market, his development, and, even, his exit process. A business plan is of primary importance, in order to warrant that the venture capitalist and the entrepreneurial team start out with the same vision.

Monitoring and Investing

When the choice is made, the venture capitalist has just started its tremendous work. He has a long-term commitment and needs to keep his business at a value that was its original estimate. The only way to accomplish this is through thorough monitoring and collaboration with the entrepreneurs. There are different tools for the venture capitalist to keep some decision power inside the firm, even after having already invested in it. The purpose is to keep an option that gives a repressive power to the venture capitalist in case of disagreement ,or profitable gains in case of success. In any case, monitoring should safeguard the venture capitalist against substantial losses. Of course, there is a variety of monitoring mechanisms and tools:

1. Through business plans that require the disclosure of many aspects of the projects, currently and in the future.

This is a way in which the road towards initializing negotiations is taken.

1. Keeping a conditional decision on identifying a syndication partner who would agree that it is an attractive investment, would allow the venture capitalist to keep an open option for further negotiations.

2. Through different types of equities with numerous restrictive covenants and representation. Usually, they can be found under different forms, such as preferred convertible stocks, or convertible bonds. The main goal is to remain a senior debtholder as well as keeping the opportunity to move to a non-fixed income security, e.g., through a conversion into regular stocks. The most common case is, the preferred stocks that offer the following advantages for the venture capitalists that make them a perfect tool for monitoring:
   - a minimal dividend per year that is compounded from one year to the other, if there is no profit to distribute;
   - a waiving of any additional covenant. There is no way for the venture to bargain these equities against additional concessions from the venture capital firm.
   - the necessity for the entrepreneur to ask for the venture capitalist authorization before:
     * taking shares in other companies or creating spin-offs;
     * franchising part or all the capital;
     * offering loans or advancing sums to other companies or people.
   - a right for disclosure of the following documents:
     * balance sheets, profit and loss accounts, statements of accounts, reports of the financial auditors;
     * minutes of the board meetings, and annual meetings;
     * copies of the tax declaration of profits and annexes in the same time delays the administration
     * any documents related to the business, budget planning, quarterly reports on financial situation, budgets.
3. Another way of keeping a relative control is the limited liability and the time-limited partnership (7-10 years) with the possibility to exit the contract before each cash-flow date: generally, three main cash flows dates during the first ten years are t=0, t=3 years, t=7 years. It is often demanded that the venture has reached specific stages of its evolution, characterized by specific results for each of the additional injections of capital

.

4. In its original covenants the venture yields a lot of power to the VCs . Usually, previous powers, the VC can fire the CEO or hire the workforce, and impose its choices for strategic partnerships.

The venture capitalist also seeks a way of not being taxed on capitals, because its main role is a go-between. He receives the main part of his funds from the outer investors, and gives them to the new venture. In exchange, they receive profits from this venture that they need to redistribute to their investors. If each stage of the process is affected by the corporate tax, there is a loss in profits that has no value added. This is why they try to choose structure that limits the corporate tax as much as possible . The limited partnerships in this model, or companies that seek gain have a special status from local governments.

The Different Types of Exits for Venture Capitalists.

Signing a contract with a Venture Capitalist, also means for the entrepreneur that he is to think of a way to leave the partnership. The exit process is also the ultimate goal for the venture capital firm. It is the time when he can make a success out of the investment operation . Thus, the venture capitalist pays a lot of attention to this last stage.

IPO: This is the most classical way in the US. The introduction to the market offers a big opportunity of gain for the Venture Capitalist, but overall an IPO is the most glamorous and visible way. It is very attractive to the venture capitalist because it allows him to make a great advertising of his capacity of managing young ventures. The confrontation of the venture with the stock market is the best way to have an objective assessment of the investee's value.

The stock market is also for a young venture, a huge source of capital that can support their further need for high-growth. However, for entrepreneurs there are also drawbacks in going public . Among other risks, the requirement of disclosure is strategically risky and costly to operate properly. The requirements for officers, lawyers and CPAs are not either easy to carry out for a small entity. Besides, the passage from an asymmetrical information state to a public state may cause the market not to trust you anymore, and your stock may sink dramatically after a while. For some ventures that are introduced to the market too early, an IPO happened to be fatal.

Trade-sale, or mergers and acquisitions: Another way of exiting is that contact with the VC

be acquired by another company or to merge with it. It represents the most common and the most successful type of exit for venture investments. For example, Microsoft acquires a lot of young ventures in Silicon Valley. To merge or be acquired may be a good strategy, if there is synergy and savings in, for instance marketing , manufacturing or distribution. In the trade sale we also have the case of the Management Buy In (MBI) when an outside investor purchases the controlling interest in the company but leaves management unchanged.

Leveraged Buy-Out (LBO) is a way of exit that is much more usual in Europe than in the US, where it is very rare. It happens when the controlling interest in a company is purchased using a significant amount of borrowed money, usually 70% or more of the total purchase price. We have then two particular cases: Management Buyout (MBO), when the company is going private through management's purchase of all outstanding shares. This is usually not possible for very successful ventures where entrepreneurs can never purchase back all the shares Employees' Buy Out (EBOs), is the case when the employees are purchasing the outstanding shares of the company for it to go private.

Chapter 3

Situation in France

3.1 Description

3.1.1 History

The French venture capital history starts in1965 with the EED . The EED was first created in Paris by the General Goriot after he played a major role in the American venture capital industry with the firm ARD. It was a difficult start because the European investors were doubtful of the success of the venture. However after demonstrating its first striking success, its capital grew to $22.6m, placing it first among 60 of the most famous European institutions.

Since the mid-1980s it has undergone a rapid development. This was mainly due to two milestones: the creation of the two structures the FCPR and the SCR.

However, in 1990, the industry faced a severe crisis reaching its peak in 1992-93. Then it tried to focus on consolidating smaller funds. It returned back to normal in 1994, but in 1995, the French venture capital industry reorganized again, yet with a collapse in investment volume.

Another important element of the 1990s is the introduction of larger banks on the investor's side. This is also why bank captives control a significant share of the French market.

The 1990s is also the time where international investment appears in French industry.

	1995 (in MF)	1996 (in MF)	1997 (in MF)
Telecommunication	67	375	391
Computer science	511	485	517
Electronic	180	213	212
Biotechnology	145	142	191
Health	235	316	288
Energy	33	2	8
Chemistry/New materials	62	37	60
Industrial automatism	43	14	61
Total	1276	1584	1728

source : Association Française des Investisseurs en Capital (AFIC)

Figure 3-1: Domains of Investment

3.1.2 Today's Picture

Today there are around 200 venture capitalists in France, that break down along different dimensions: their domain of expertise, geographical scope, domain of investment.

Their domains of expertise: for the seed capital and creation capital only ANVAR is financing in France. In 1990, l'IDI, the Credit Lyonnais Bank and France Telecom jointly created Genese Investissements with a FF12m capital.

The start-up world is not much better helped. It is only 7% of the invested capitals.

Another criteria in the venture capital world are the scope and size of the institutions. There are around ten of them that have a national scope with a budget between FF150m and FF1b. Among them we can list main investors, like Apax Partners, Financière St-Dominique, IDI, etc. There are also smaller funds, like Financière de Brienne, Idianova. Finally, we have regional organizations that are highly specialized, like Sudinnova.

Domains of Investment

(Refer to table 3-1) We can see a good understanding of the two star families, with a much higher emphasize on computer science than on other Information Technologies areas. This prevalence of technology investments is even higher in early stages where 91% of the amount

Investors	1996 (MF)	1996 (%)	1997 (MF)	1997 (%)
Corporate Investors	183	4%	1.186	28%
Private Individuals	284	6%	80	2%
Government Agencies	137	3%	52	1%
Banks	2.792	60%	2.488	58%
Pension Funds	381	8%	188	4%
Insurance Companies	718	15%	245	6%
Academic Institution	88	2%	0	0%
Others	107	2%	66	2%
Total	4.688	100%	4.305	100%

source : Association Française des Investisseurs en Capital (AFIC)

Figure 3-2: Sources of New Funds

invested in venture that are less than three-year old, are in technology ventures.

Investors

(Refer to table 3-2) We see that currently the main investors are the banks. Next comes first insurance companies, then pension funds, in 1996. However, in 1997, Corporate investors did invest greatly in venture capitalist going from 4 % to 28% of the total investment.

Stage Distribution of Investment

In early stage the investment (venture with less than 3 years of age) is rather poorly compared to other countries, like the US and the UK. On the contrary, the later stage investment is much more developed and consistent with France economical weight. However, the trend seems to counterbalance, with a net increase in the amounts invested in early stages: 273MF in 1994, 537MF in 1995, 983MF in 1996, and 1097MF in 1997.

Contracts

Investments in 1997 reached 1.7bF in total. The amounts that venture capitalists are able to take up increase. It is not unusual to raise 500MF in one time whereas it was difficult to raise

200MF two years ago. Likewise, average amount per deal was very low with respect to the international benchmarks: 2MF in France for 30MF in the US. Nevertheless it is increasing.

The number of new investments is also increasing in a very encouraging way. Likewise the number of venture capital-backed ventures is also increasing.

In 1994, an investigation from AFIC and Coopers compared 250 companies that benefited from venture capitalist aids with the ones that only benefited from national credit. The samples were so that all the sectors were represented, but with an emphasis on high technology firms (telecommunications, software, electronics, biology). 75% of the firms were Small Businesses (PMEs 10-499 people). Globally they noticed important differences in growth. The growth in revenue was on average 42% for the venture capital-backed firms instead of 17% in the rest of the pool. The growth in exportation was 80 % instead of 23 %, and in labor force 34 % instead of 6%. Finally, 96 % of entrepreneurs explained that they appreciate the dynamic management and the constant involvement of the venture capitalists.

Return On Investment

Unfortunately, the average return on investments is not very high, around 13-20% for the early stage investment. It is a bit higher with investment in the next stages. It does not compare at all with the UK or the US that have an average return on investment for early stage around 30% over the last 5 years.

3.1.3 Description of Social Environment

An interesting reference about insights into the French social culture is the "French Polity" from William Safran ([56, 1998]).

Who Creates High-Technology ventures?

French entrepreneurs in technology ventures are mainly either researchers from public research centres or employees from corporations that decide to create their spin-off, with or without the consent of their organization.

In France a small number of new ventures, around 40 ventures/year, are created by researchers, among which 80% were created by personal from public research institutes or univer-

sity. It could be through a GIE (Groupement d'Intérêt Economique) between several firms and even a laboratory, in order to develop the applications of the laboratory research. Finally, we have the case of researchers in public laboratories that want to develop their own application of their findings.

In general, French professional analysts say that there is no creation from scratch. This is very different from the United States. Most of the cases for creation are consequences of R&D split within corporations. These splits occur mainly because French corporations refused diversification, ("rejet de diversification"), which means that although they are developing a certain technology, the management does not want to go further. Then employees and executives leave the firm to develop it by themselves.

We also have "wanted spin-off". This happens when the technology is developed by a spin-off of employees but with the blessing of the firm, and often its financial or material support. This must not be mixed with the faked "spin-off" that is actually only a legal and financial procedure. It is done in order to consolidate the firms budgets by removing from it its risky activities, but the links between the two organizations remain very strong. A licensing company is created to develop a technology that was created in another firm sometimes based on a patent.

Available Types of Businesses

Sole proprietorship, or "entreprise personnelle", is when people are in business on their own account. They are responsible and personally liable for their business debts.

A branch, or "succursale", is a permanent secondary establishment of a foreign business. It has no legal identity and neither its assets nor liabilities are separate from those of the company. It is seldom a choice for foreign companies that usually prefer to set up a subsidiary.

Public limited company, or Société Anonyme (S.A.), requires a minimum of 7 members. Two types of management structure are possible either a chairman (PDG) with a board of directors("conseil d'administration), or a Supervisory Board ("conseil de surveillance") and an executive board ("Directoire"). The roles of the officers and of the AGM are the same as in a corporation.

Private limited company, or "Société à Responsabilité Limitée' (S.A.R.L). It has 2 to 50 members who contribute a minimum capital and whose liability is limited to their contribution.

The AGM makes most of the decisions as in the S.A. In particular, it names the managers.

Simplified PLC, or Société par Action Simplifiée (S.A.S), is made up of 2 or more companies. The rules are the same as for a SA, except that a corporate body can be appointed CEO of a SAS not of a SA.

Limited Partnership, or "Société en Commandite par Action" (S.C.A), is made up of general partners with unlimited liability and limited partners with limited liability.

General Partnership, or "Société en nom collectif" (SNC), is made up of partners, all with unlimited liability. It is often used for small family-owned firms or joint ventures between large companies.

Groupement d'Intérêt Economique (GIEE) rarely has profit-making as its objective. It is rather used to pool together the efforts of several firms, for instance, for research. All members have unlimited liability.

Other forms of enterprise: European Economic Interest Group, non-profit associations, a specific joint venture status.

Regulatory Environment of the Creation of a Business

All businesses are to be entered at the Court of Commerce as a registered trade in the "registre du commerce". Then they need some documents in French (or certified translations in French). They are to clarify the purpose of their business, the obligations, and commitment of any member of the business. A copy is sent to the tax authorities and social security organizations.

Businesses must give elaborate information about their company and their choice, title, fiscal year, tax options and social security options. In case of corporation they need to add information about their capital structure

Individuals must give detailed information about themselves and also show several official papers, like birth certificates.

Companies have to publish a standard advertisement in a newspaper. All employers must register at the Social Security institutions.

In order to be registered, the applicants have to wait for the answer of the Court of Commerce.. The time necessary to create a company is around 1 month for the French, 2 months for Europeans and 3 months and more for non-Europeans.

Besides, the fiscal and the labor laws are very complex. The Labor law in itself contains 18,000 articles, and many non-deliberate mistakes can lead the entrepreneur to the Criminal Court and possibly to jail.

3.1.4 Description of the Legal Environment

There are two major organizational patterns that are available for venture capitalists in France. One is the corporation in its two most standard forms that are the Sociétés de Capital Risque (SCR) and the Sociétés Financière d'Innovation (SFI). The other pattern is the mutual fund, which is a subgroup of the "Organismes de Placements Collectif en Valeurs Mobilières" (OPCVM) (Organization for Common Investment in Movables Assets, or joint ownership of shares); its two major forms are the "Fonds Commun de Placement à Risque" (FCPR, Mutual Funds for Risky Investments) and "Fonds Commun de Placement pour l'Innovation" (FCPI, Mutual Funds for Investment in Innovation).

Whether it is a Limited Liability Partnership (LLP) or a Limited Liability Corporation (LLC), advantages and disadvantages of each organizational structure has to do with liability, taxation issues and management responsibility. In France 3/4 of the venture capitalists are partnerships, the rest are the corporations.

In limitations in order to prevent abuses the limiting constraints are a requirement for a minimum investment in innovative small non-quoted businesses, and a certain time-limit to fulfill this condition. There are also protections for the venture against professional arbitrage or professional takeovers that would divert the purpose of the organization. For instance, they impose a maximum ratio of shares to be taken inside of a same venture, or a minimum holding period for the shares in order to benefit from the tax exemption.

The Mutual Funds

The FCPR were created by the February 3rd, 1983 law. It covers managed public funds (for people or group) and its investment into stocks or convertible bonds. Two founders are needed to create an FCPR: the "Société de Gestion" (Management Company) and the "Dépositaire" (Custodian). Because there is no liability in the fund, the Société de Gestion bears all responsibility for the management of the fund. The Société de Gestion must be authorized by the

COB. The COB usually requires that the head of the Société de Gestion has prior experience in venture capital. The Dépositaire is often a bank, a stockbroker, or an insurance company. Both parties have to establish a "réglement" that makes it very similar to a limited partnership structure.

In order to qualify, the FCPR must comply with certain rules. It must invest 40% of its capital in companies that are not quoted on any stockmarket in the world. 50% of these unquoted shares must be from French companies. The time limit to comply with this requirement is 2 years .

The FCPR can also qualify for additional advantages in taxes for its investors, we will call herein this type of fund an "eligible" FCPR. Its assets must be invested by a minimum of 50% in shares, or convertible bonds, or titres participatifs of EU companies that meet certain requirements (not listed on any market, engaged in industrial or commercial activity, subject to corporate income tax or its equivalent in the residence country). This new quota must be reached after the first year of existence.

There is no limitation on investors. They may be an institution or any private individual, foreign or national.

The maturity date for the subscribers goes from a minimum of three to a maximum of ten years. On the liquidation of the fund, the management company receives around 20% of the profits.

Besides, the AFIC managed to introduce in 1996 the notion of "FCPR professionnels" open only for institutional investors. In these funds the constraints on the companies in order to be accepted by the COB become looser.

FCPI: Fond Commun de Placement dans l'Innovation Lately the French government created the FCPIs. They have to be certified by ANVAR. Their capital must be invested at least at 60% in equities of non-quoted companies small businesses (less than 500 employees). The small businesses must be innovative, or "PME innovantes". On the other hand, the tax-advantages are greater. Otherwise, they have very similar features to the FCPR.

The Sociétés

The SCR has a tax-oriented status. It was introduced by the law of July 11th, 1985, and modified in 1990 and 1991. It must take the form of a French société anonyme (SA) (public limited company) or a French société en commandite par action (SCA) (limited partnership). Therefore, it is subject to any of the regulations that apply to such companies. It is managed internally and there is no independent management company as for the funds. Similar to the FCPR, investors can be national or foreign, institutions or private individuals. However, private individuals are limited to 30% of any SCR. As it is for a corporation or a limited partnership, the investors are limited to the amount invested in the SCR.

In addition, the SCR can qualify for tax advantages. Like the eligible FCPR, the SCR has to invest at least 50% of its assets in shares, warrants, convertible bonds and titres participatifs of EU companies that meet certain requirements (not listed on any market, engaged in industrial or commercial activity, subject to corporate income tax or its equivalent in the residence country). This new quota must be reached within the first three years of existence. Additional assets of firms under restrictive conditions can be counted within the necessary 50%, for instance short-term convertible loans may.

The SCR is capped in its participation inside of portfolio companies, as well as any of its shareholders or partners. It cannot own directly or indirectly more than 40% of the voting shares of a portfolio company within the 50% quota. In exchange, they get exemption from corporate tax and investors have tax-postponement on their ordinary income if they reinvest it.

SFI: Sociétés Financières d'Innovation (SFI), they were created by the law of July 11th, 1972. The oldest one is SOFINNOVA that was created by the Crédit National. They must invest at least 80% of their capital in innovative firms that have a turnover below 50MF, and whose capital is not controlled at more than 50% by firms over 50MF. They have to withdraw every three year at least 33% of the invested capital and to reinvest it in other firms. They have a minimum capital requirement and none of the investors is allowed own more than 30% of the SFI capital. In exchange they benefit from a free guarantee from SOFARIS. The shareholders also have a tax reduction of 50% on equities that they held over 3 years, and a tax-exemption for capital gains within these 50%.

However, SFI are subject to the corporate tax, that makes them non-transparent to tax. This is why most of them move to the status of SCR.

IRP: Instituts Régionaux de Participation. The first one, SIPAREX (Société de Participation dans les Entreprises Régionales en Expansion) was created in Lyon in 1977. They usually intervene with firms with more than 100 employees and with a turnover greater than 50MF. They cannot own more than 35% of their portfolio companies. The investment in one firm cannot overshoot 85% of the capital of the IRP. They enjoy tax-transparency, with an exemption from the corporate tax. In addition they can enjoy guarantee from SOFARIS. In exchange, they need to distribute 60% of their results. Most of them moved to the SCR status by 1987.

SDR: Sociétés de Développement Régional. They were created in 1955 with the original mission of bringing financing in exchange of equities. They got their corporate taxes waived and do not have limits in amounts of their investments. Their only limit is to stay below 35% of the capital of the venture. However, they need to be certified by the Ministry of Finances.

3.1.5 Description of the Fiscal Environment

The following information mainly comes from the dense synthetic work[4, HLB-GFA (1998)] "Doing Business in France", written by a French accounting firm from in order to advise their foreign customers that want to invest in France. Overall, France has relatively high tax burden. The burden of tax and social security contributions can be measured as percentage of the GNP around 45.8% while in the US it is around 36%, in Japan 29%.

The Standard Taxation System

The standard French taxation system is very complex and complete. Its goal is to leave no fiscal arbitrage and to redistribute evenly the wealth in order to reduce the social gap.

As presented on the figure 3-3, we can assume that there are different cash flows that can be taxed between the main actors: the company, the individual, the financial markets, and the consumption. Private parties can be grossly either employees or owners in case of partnerships or sole-ownership. The corporate tax at 41.66% is normal, similar to the United States. But the income tax is very high at more than 50% for the highest income brackets. Besides the Value Added Tax is also extremely high, as well as the social security contribution.

Mostly for French, the taxation is big regardless of the source of income. Corporate revenues are taxed mostly at the corporate rate of 41.66 %, and individual income net from deductions at sources are also taxed at the same rate notwithstanding the origin of the gain. Besides the transfer of gains to another company is also taxed. This is the case if our company is a subsidiary or a branch of another company, taxation varies whether the parent company is national or located in another country. Finally, in case of capital, withholding taxes are there to enforce a floor of taxation, which may be very high if there is no tax-treaty between countries.

The Private Parties The whole of the income of individuals is taxable if they are permanent residents in France, or if their income is earned in France or if they are salaried employees in France. The tax scales ranges from 0% to 54% plus a 7.5% of compulsory social security levy.

Compulsory contributions: they are withdrawn at source, before the salary reached the employee, and constitute the contribution to social security, unemployment and pension systems. They are variable with a fixed rate. Typically, for 100 received by the employee, the employer paid 140.

Earnings and salaries: this is the tax paid by the employees of an entrepreneur after receiving their salary. This is a variable tax with a variable rate that increases from 0% for low salaries to 54% for high ones.

Business income: This is the tax on profits earned by individuals, sole proprietors or partners; It could be a manager of a fund or a business angel. It is calculated in the same way as for corporations, and its rate is not different from the one on earnings and salaries.

Personal wealth tax: a personal wealth tax is payable by all residents with non-trading assets over FF4.8m per household as of January 1st, 1998. Rates range from 0.55% to 1.8%. This is a recurrent tax, and if the tax is 1%, this means 1% of the total wealth every year.

Compulsory contributions (csg crds): An overall compulsory contribution is levied on resident's private income of all types at a rate of 8.5% on salaries, and 10% on other incomes, like capital gains or dividends. This applies is only to French residents.

The Financial Gains For individuals, we may have big investors that put money in the stock options of our venture, or the management team of the venture that can be taxed directly as an individual on the capital gains of the partnership.

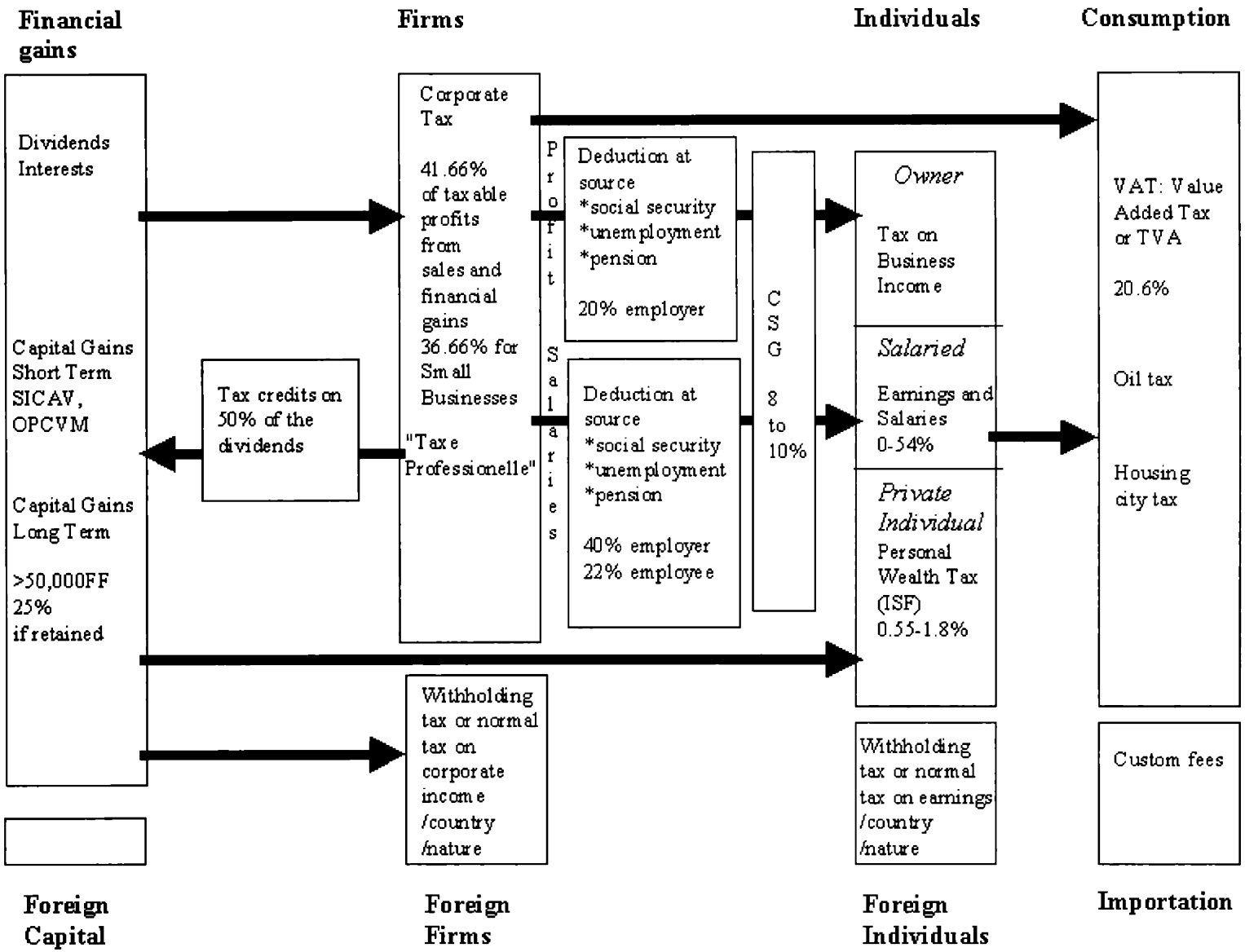

Figure 3-3: French Standard Tax System

Capital gains on securities: An upper limit of FF50,000 is fixed for each year. If the gross proceeds of sales is less than this, there is not tax to be paid. Otherwise capital gains are taxed at 25%.

Dividends and interest: Two options are available, either declaring the income or paying a withholding tax.

For corporations, we can have our Limited Liability Corporations, like the SCR that can be subject to this taxation.

Business capital gains and losses for companies are subject to corporation taxes: From 1997 most long-term and short-term capital gains are taxable at the standard rate:

Business capital gains and losses for other business: sole proprietors and partnerships receive same advantages.

Corporations Profits Corporation tax: It bears on the taxable profit of the corporation. This means the net income after deducting all allowable expenditures. (cost of goods sold, expenses, depreciations and provisions). Capital expenditures can be only deducted through depreciation. The current tax rate is 36.66% and 41.66% for subsidiaries and companies with a turnover over FF 50 millions.

Transfer of Gains/Parent companies This would be the case of captive or semi-captive funds.

Profits received from a 10% subsidiary: When a 10% subsidiary distributes a dividend to its parent companies, that will distribute it to its shareholders, the parent company will not pay the corporate tax on this already taxed revenue.

Profits and losses from a 95% subsidiary: for tax purposes the group of the parent company and the subsidiary are then considered as a single company.

Exporting Funds Withholding taxes: These are taxes for any payment to a recipient outside of France. In case of non-existence of an agreement between France and the country of residence of the recipient, dividends paid to non-resident shareholders may be subject to 25% withholding taxes, the income tax at more than 25% if the recipient of income happened to have a high total salary (in France and abroad). Then he will be taxed on the French amount at the rate he

would have been taxed if he earned his whole salary in France. Likewise, for foreign companies that may be taxed at the full rate of 41.66%. This could be a hurdle to the motivation of foreign investors.

There are 33% withholding taxes on royalties or fees paid to non-resident. This could be the case of foreign ventures capitalists that would like to make some business with French ventures.

For capital gains, if they are realized either by an individual or by a corporation, the corresponding withholding tax is then 33% if they are not recurrent, otherwise, if they are recurrent (rent), they are subject to 50% withholding taxes.

Agreements, or income-tax conventions, are numerous and with most of the countries, but not with the tax havens. The purpose is to avoid unfair geographical arbitrage that would allow shrewd investors to waive income tax.

Taxes on Consumption Value added and turnover taxes VAT: this impacts every link of our chain. It could be the labor force of the corporation. VAT is charged on all sales and imports of goods and services consumed in France. There are three rates, but the most classical one is 20.6% which occurs on most of the products and services. This is a blind tax, it does not make the difference between poor buyers and wealthy ones.

There are other taxes on consumption.. The most significant ones are the one on oil and the custom duties.

Other Taxes "Taxe Professionelle": Its rate is chosen by the French local authority. Company's buildings, equipment, computers are subject to this tax.

The Special Fiscal Status of Venture Capitalists in France

In every case, because the French fiscal system is very complex and complete, we will have to distinguish between tax-advantages for French individuals, foreign individuals, French companies and foreign investors. Most of the times the advantages include tax-transparency for the organization and tax-reduction for the various stakeholders.

The FCPR French individuals, that are investors in an eligible FCPR (50% of EU registered non-quoted shares, or see page 45), are tax exempt on any income, either received from the

FCPR or obtained from capital gains if they reinvest it in the fund. Different conditions apply here. The investor must be a minority investor, this means that he should have never owned directly or indirectly more than 25% of the shares of any company backed by the fund. The shareholder must also show a certain consistency by keeping the shares at least a few years before selling them. The shareholder must reinvest all the incomes immediately in the fund that he received from the fund over these five years.

French companies pay standard tax on the ordinary net income. This net income is computed by taking the income of the companies, primarily dividends and interest, and by subtracting the management fees paid to the Société de Gestion and the Dépositaire. Thus, the fiscal transparency is guaranteed. It is even more specific because the income tax paid by the investors takes into account whether the income paid by the Société de Gestion is a dividend or an interest, and tax it appropriately. Finally, the timing of the taxation is when the company receives the money from the FCPR and not when the FCPR receives the income from its portfolio companies.

Likewise, in the case of an eligible FCPR, a corporate investor is not taxed on capital gains when the FCPR realizes the capital gain, but when he makes the gain, either by receiving it from the FCPR or by selling its shares in the FCPR. There are requirements for this last covenant, the most usual one is that it has to keep its shares for at least a five-year period.

Foreign investors have specific regulations. On the ordinary income (dividends and interests), they are subject to withholding taxes. This is a regular way they would be taxed for any other investment in France. Likewise, they may benefit provided that there are income-tax conventions between their countries and France.

For investments abroad by the FCPR, the foreign investor is not subject to any income tax if the foreign source income is redistributed by the FCPR. The investor may even request reimbursement of any withholding tax in the source country if there are conventions between his residence country and the source country.

For capital gains, foreign investors are exempted from capital gain tax. The condition is that they own less than 25% of the companies.

The SCR The structure is tax transparent, but the management fee income remains fully taxable to the SCR. Then the SCR will be exempt from tax on income received from its investments. But amounts redistributed to the investors will be taxed at the investor level. It also includes the investments that were excluded from the 50% (for instance, case of publicly-traded stocks in the SCR portfolio)

French individuals have very similar advantages as for the FCPR. Like for the FCPR, they have the selective taxation with respect to the source of income that is distributed by the SCR. If it is capital gains it would be only taxed at the same rate as capital gains. Like in the FCPR, there could be a total income tax exemption if the amounts are reinvested right away in the SCR.

French companies are subject to the normal tax rules on non-taxed income that are distributed by the SCR. In order to have its capital gains taxed as long term capital gains, assets must be held at least two years by the SCR and gain must be distributed in the four subsequent years after realizing it, otherwise, it is subject to the tax on short term capital gain.

Foreign companies investors are subject to withholding tax at the rate of 25% on their income. If the SCR distributes capital gain to a foreign company, it will then be subject to withholding tax of 18%. In case of income tax convention between France and the country of the investors the tax rate may decrease to only 15%, 5%, or 0%.

Foreign individuals: they can be totally exempt from tax under the same conditions as the French individuals when they reinvest immediately their income in the SCR.

For investment abroad by the SCR, unfortunately, the SCRs are very likely to be treated as corporations by foreign countries, such as the UK or US, rather than as tax-transparent entities. Then they may not enjoy anymore the tax-transparency advantages that they had by investing in French ventures.

3.2 Current Policy

3.2.1 The Stakeholders

The Current French Socialist Government

The current Government of France is in favor of an intervention rather than market-driven capitalism. It is also in favor of equity, rather than natural selection. This also needs to be replaced in the midst of very frequently uncertain outcomes from the ballots. It is for the third time in the French history as well as in the last 10 years that the French president has to govern with a majority and a government of the opposition. This trend affected both parties in office. Today nobody can predict with certainty which party will be governing in the next few years.

It is also important to specify that the French Constitution is written in such a way that there is a balance of the executive powers in between the President and the Prime Minister. Most of the times balance never played any role because the two persons belonged to the same political party. However, for the last 10 years, this balance was prevailing because they often had to share power with somebody from the majority opposite. This balance is due to complementarity of powers that allows each of them to paralyze or to slow down the projects of the others, and thus enforces a consensus between them.

The European Community

The main concerns of the European Community are about the unfair competition of the French venture capitalists versus other European firms that would like to invest in France. They may also track unfair support to technology ventures through direct or indirect funding by the French Government. On the other hand, it tries to homogenize technical infrastructures at the European level, and give subsidies to countries for that purpose.

AFIC: Association Francaise des Investisseurs en Capital

AFIC is a professional association for venture capital in France. It especially cares about the legal and fiscal status available for venture capitalists in France. It is also very interested in the various forms of support by from the French government, and distrusts towards competitive public or semi-public funds.

EVCA: European Venture Capital Association

EVCA is the European association for venture capital. Its main concerns is to offer an attractive fiscal status for other European venture capitalist firms in France. They also try to develop the aids from the EU, and to have a say about general directions, towards which they would like the European countries to move .

Different Ministries

Ministry of Research: its main goal is to promote innovations, it gathers information or monitors the technological competitiveness of French technological firms.

Ministry of Finance: its main goal is to balance the French public budget, watch status and possible breaches in the taxation shield. It also has a role in the protecting people and firms against possible failure of financial organizations, like life-insurance firms for instance or venture capital funds. It usually ensures this level of protection by setting up controls and inspectors.

Ministry of Industry: its purpose is the creation of new firms, the growth in sales of products, and also the growth of French exportations.

Ministry of Labor: its main concerns are to protect employees status in firms and fight unemployment in France. It is looking for a commitment from new ventures for a minimum level of new hired. It also ask for protection for their status. It has a pool of inspectors that are in charge of enforcing labor laws.

3.3 French Public Policy

The action of the French government can be broken down into three main trends: first, creating a favorable statutory framework for venture capitalists, second, encouraging investors towards a venture capital, and finally creating a favorable framework for high-growth firms. They can mainly be found in the Guillaume Report [20, 1998]. The whole report was written for the Ministry of Finance in order to address the issue of innovation in France. This document took a year to be done. Experts from various domains, individuals from different government agencies and ministries along with people working in the private sector took an important part in it.

3.3.1 Create a Favorable Statutory Framework for Venture Capitalists

These tools are to provide professionals of venture capitalist with the best legal and fiscal infrastructure to operate their business.

The tax transparency feature is by default in the latest status FCPR and SCR. It offers a one-layer tax structure for corporations that meet certain criterions. Besides, the government offers guarantees against risk of bankruptcy of the ventures in the portfolio. Lately, the government has also lessened the regulatory requirement in order to change them into more flexible structures. For instance it allowed advertising in the seeking for investors.

It developed networks between funds through various events in participation with the AFIC. It also allowed holdings of FCPR to be able to strengthen by gathering and by diversifying risk.

The government also tried to initiate the creation of venture capitalists in France. Thus it provided aids at the beginning of the life of a venture capital. It also sponsors the early stage investments.

3.3.2 Encourage Investors to Invest in Venture Capital

In the new status for venture capitalist, the government offers special tax discount for investors, private or institutional. The main incentives are in order to make people repeat their investment, by reinvesting their gains in the venture capitalist immediately.

There are also specific tools developed to target the main big investors overseas. These main sources of funds are in the United States, pension funds and life-insurance firms.

The late development of new stock markets similar to the NASDAQ are to create higher opportunities of capital gains to the investors and would make the venture capital more attractive.

3.3.3 Create a Favorable Framework for High-Growth Firms

By allowing stock options, the government wants to give to the ventures incentives to compete with bigger corporation, when they are looking for hiring specialized employees, experienced executives, or when they are looking for buying services.

There are also efforts to facilitate their seek for capital. The introduction and operations on the stock markets. This means to provide young ventures opportunities to go to the public

capital market, in order to expand its sources of capital, without being penalized like bigger corporations. And at the beginning, the tax deferment for individuals that want to invest in a new small business, is an incentive for business angels to invest and to participate in the success of the new ventures. Public institutions organized competitions of business plans, and give to the future entrepreneurs exposition to financing world.

In addition there are governmental funds that are to support creation of new ventures by providing aids at the creation.

In parallel the government develop an action in the public research centres as well as in the universities and Grandes Ecoles. The purpose is to inform, encourage and support by courses, advice from professionals and financial aids the entrepreneur's spirit among researchers and students.

3.4 Current Implementation in France

All these policies were implemented over the last years by the government, either directly or indirectly by using state-owned companies, regional institutions or semi-public institutions.

3.4.1 Creating a Favorable Statutory Framework for Venture Capitalists

SOFARIS is the main instrument for the guarantee of venture capital investment.

The "PME Program" or Program for Small Businesses from the Caisse des Dépots et Consignations (CDC) was started in 1994. It increased the volume of financial guarantees that were provided by SOFARIS. It was also a direct support to the Regional Institutes along with the CDC in taking participations in their capital (310MF between 1994 and 1996) . It bred the funds CDC-Innovation with an original endowment of FF400m.

The two laws of finances that created the FCPR and the SCR, were the first steps in creating appropriate legal and fiscal instruments to carry out the venture capital. Subsequent additions and modifications to their status made them very suitable and manageable by the private sector. For instance the latest modifications that allowed FCPR to advertise and to prospect for new customers is a big improvement. Since then we differentiate between the "open" FCPR, that are allowed to advertise but requires an agreement from the COB, and the "closed" FCPR that

provide for clients institutions or informed private parties which only need to register at the COB.

A primary step was to authorize joint investment for more than one venture capital in a venture. Thus in recognizing the status of professional FCPI, the article 22 of the LFR 1997, this helped to avoid penalizing new ventures with already venture capitalists in their capital. Likewise since December 1998 holdings of FCPR are allowed. This allowed in particular the creation of "funds of funds", where risk can be mitigated, and the action of venture capitalist leveraged by the joint action.

The French government tries also to launch programs to support the creation of venture capitalists, and more specifically, during the early stage investment. This missing link is also called "fonds d'amorcage". Thus, in March 1999, a joint effort from the MEFI and the MERT created competition in "Incubation et capital-amorcage des entreprises technologiques". The total funds are 100MF and came from the privatization of France Télécom. The projects would be chosen by a jury. The main criteria are the implication with the research organizations and the academic institutions. The involvement of a professional in venture capital will be also a primary criterium. Finally the sources of capital should be diversified during the search for investors.

The French government tries to incite also to small investments. Usually venture capitalist do not want to undertake small business proposals and prefer to get involved with ones that have a larger expected return. It is also the case of early stage businesses, where the outcome is very uncertain. In order to encourage them to commit also on these smaller business cases, an experimental action from the government provides fixed financial supports to chosen venture capitalist for any portfolio company between 200 and 500kF.

In the fall of 1997, the Secretary of Finance, created a public fund for venture capital activity on new ventures under 7 years old. It was originally doted with 600MF from the privatization of France Télécom. It is managed by the CDC. It started to operate in July 1998. This fund targeted mainly individual investors, with a participation by investor capped at 20%. It is to be a temporary measure only, in order to enable the French venture capital to move to the next step.

3.4.2 Encourage Investors to Invest in Venture Capital

The French government tries to make venture capital a more attractive investment. They try to concentrate on the main investors in the industry.

The first challenge for the French government was to promote to life insurance firms, which have an important pool of long-term capital, invest in venture capital. This is especially important because there was no French pension funds that usually are the other primary investors. This is why the article 21 in the LFI 1998 created the special fiscal status of life-insurance contracts invested in shares or so-called contracts DSK. These are contracts that invested in at least 50% in shares, among which at least 5% are in venture capital (FCPR, SCR, FCPI, SFI, non-listed companies). They enjoy a tax-exemption after 8 years. They collected 30bF by December 1998.

Many fiscal advantages are given to investors in FCPR and SCR. They mainly consist in tax-exemption, if the gains are immediately reinvested in the venture capitalist, and income tax as long term capital gains.

3.4.3 Create a Favorable Framework for High-Growth Firms

By introducing stock options or "bons de souscription de la part de créateurs d'entreprise" (BCE), the article 76 of the LFI 1998 aims at promoting high-growth new ventures. Through stock options, they are able to attract high-level executives and compete on the labor market with big corporations. On the other hand, the conditions are for that the ventures to be under 7 years-old, and the profits are taxed with an increasing rate over the years. In the LFI 1999, this was allowed to firms below 15 years old as well.

Another law promotes early stage venture by giving tax deferment incentives to business angels, the main investors in this stage. The article 79 of the LFI 1998 and "article 92B decies from CGI" defer the tax on capital gains for private parties under the condition that the profits are reinvested in innovation. There is of course a floor for the percentage of ownership in the company, in order to select only business angels. In the LFI 1999, this was extended to businesses under 15 years old.

There are also a lot of measures to help the new firms to enter the new French stockmarket. ANVAR has a program that offers financial support for new ventures that are going through

an IPO on the Nouveau Marché. Likewise the LFR 1995 grants special tax exemption on stock exchange operations for small businesses, that either want to go for an IPO, or want to purchase and sell their stocks. The condition is that the last turnover value of the firm were below 500MF.

3.4.4 Enforcement

The main enforcements for the SCR and FCPR are that they may lose their special status and therefore will be precluded from tax-advantages. Likewise for the FCPI status, the enforcement is always performed by the COB.

The criteria for innovative venture is either to have a cumulated research expenditure over three years which is at least a third of the maximum revenue of these 3 years, or to justify the creation of innovative products, processes and techniques. The assessment of the innovative character is made by ANVAR and the certification is granted for 3 years.

3.4.5 Supporting Organizations

ANVAR

ANVAR is a state-owned institution under the management of the three ministries, Ministry for Industry, Small Businesses and Research. It was created in 1979, and its role then was to gather, protect, and exploit technological applications that were issued from the French public research. Today its role is to escort and finance innovative projects. Among its tools are aids for innovation and loans with a zero rate that is to be reimbursed in case of success. Its scope breaks down in 24 regional delegations, that are closer to the entrepreneurs. It behaves like a venture capitalist even if it does not make any profit. Since its creation it has escorted more than 20,000 new ventures.

BDPME

Banque du Développement des PME (BDPME), or the Bank for the Development of Small Businesses mainly guarantees up to 75% of the credit risk of the small businesses. It offers various other products for small businesses like loans with preferred interest rate.

SOFARIS

The role of SOFARIS is to guarantee risky investments of venture capitalists. It was created in 1982.. Currently there are two funds of guarantee: the "fond développement technologique" doted by the government and the fund "garantie capital PME" doted by the CDC. Each of these funds guaranties 50% of the investments of venture capitalists. It even guaranties 70% in case of creations of start ups.

The "fond développement technologique" is a stop-loss fund. It attracts first the big investors with big operations. As soon as the actor is certified, all his investments are certified and warranted, whichever their amounts may be. But on the other hand SOFARIS reimburses only losses with a cap at 15% of the total amount of investment.

The fund "capital PME" aims at smaller operations and ventures. It has no such cap as a percentage of the total investment. However the potential value of the risk to be covered cannot overpass FF5m.

CDC

The Caisse des Dépots et Consignations CDC, is a public institutions that was created in 1816. Its mission is to manage private funds that require special protection, and to use the collected funds to advance the country's social and economic development. In particular it is entrusted with savings books Livret A, as well as funds from French life-insurance or pension funds. For instance Partcom is a filial of the CDC that is specialized in IT and acts as a venture capitalist.

It invests its money into social programs or economic programs like various participations in funds for innovation.

New Financial Markets: Nouveau Marché and EASDAQ

The creation of stock markets for high-growth firms is a primary step. In 1996 the Nouveau Marché was created in Paris. It was based on the "small caps" segment of the NASDAQ. The conditions of entrance were much looser than for the Secondary Market. First, there were no conditions on the minimum years of a company's lifetime, nor were the minimum totals of funds and equities substantially lowered.

It created a profitable exit for the venture capital industry and therefore stimulated it over the last years. After three years the Nouveau Marché obtained the following results: 81 listed companies, and a total capital stock of 28.3bF. The introduction to the Nouveau Marché as an average company translated into an increase in the number of employees by a factor 4. Its liquidity is considered by experts as guaranteed and satisfactory. However it is still far from reaching the same volume of transactions as the equivalent markets in the US and UK.

Growth is expected within the Euro-NM, which is a GIEE of European growth financial markets; the German Neuer Markt, the Belgium Euro-NM, the NMAX from Amsterdam.

L'EASDAQ is a transnational market that was also created in 1996. It has around fifty companies listed, and grows at a lower rate than the Euro-NM.

3.5 European Union

Description

The history of European venture capitalist is recent and turbulent. It first started around the 60's with the firm European Enterprises Development (EED),.

Because the terrible recession in the 70's discouraged European venture capitalists, European governments took steps to help venture capitalists. This is why each European country that underwent a downperiod, undertook governmental actions. But at the same time the EC tries also to find global actions and plays the role of coordinator between the different national venture capital industries.

European Community Policy (EC):

This recession is also the main reason that made the EC administration take an interest in venture capital industry. The goal was that larger scale European initiatives would be either more efficient than or complementary to national efforts.

In 1985 the EC started the program Venture Consort. Its purpose was to promote co-financing of new-ventures by the venture capital industry. It also participates in the creation of transnational financial Unions.

Then in 1988 the European commission created the experimental action Eurotech Capital.

It focuses on high tech projects. There are principally three kinds of aids that are offered to venture capitalists. First is a preferential access to Eurotech services. There are two types of services: Eurotech Projects, a service that identifies high-tech projects and communicates their results to the venture capitalists. The second service, Eurotech data, helps in the assessment of the marketing and technological value of projects by providing information. Second, it creates a network of venture capital funds, that in exchange are committed to putting 20% of their investment into these kinds of operations. Finally, these new ventures receive a small financial contribution from the EC.

In 1989 the European Commission created the European Seed Capital Fund Network (ESCFN). It created more than 25 funds that are specialized in the early-stage ventures. In addition it provides financial aids to these funds for supporting regions that are behind to maintain a geographical equilibrium. In 1995 there were ECU 35m invested in 285 new ventures among which 87% in technological areas. 52 of them or 15.5% filed for bankruptcy.

Then Venture Consort founded the EVCA in 1983. It was then, the organization in charge of developing the network of the ESCFN.

EIB

The European Investment Bank is the European Union's long-term lending institution. It was created by the Treaty of Rome, its members are the Members States of the European Union, who all subscribed to the Bank's Capital. Its board of directors is composed of the Finance Ministers of these States. It grants long-term low-rate loans to SMEs, in order to support less-favored regions or creating infrastructures for business in less-advanced ones.

The "Amsterdam Special Action Program" (ASAP) was setup in 1997. It has various features among which is the participation in hedging risk by the EIB in favor of innovative SMEs. One of its operations was to entrust the management of a fund endowed with 300MF to CDC, the EIB venture capital fund. This fund joins the existing FCPR that is managed by the CDC, which brings its capital to 900MF. IEB and the French State will participate in the fund evenly for FF200m over the next three years. This is in addition to 100MF made available by EIB to SOFARIS in 1997 for guaranteeing operations carried out by venture capitalists in innovative SMEs.

Chapter 4

Personal Assessment

4.1 Benchmarking With Other Nations

The size and activity of venture capitalists vary across countries. There are even different uses and best practices of the venture capital industry across countries For instance in Hurry and al [23, 1991] they point out the comparatively lower involvement in monitoring and management of the Japanese venture capital industry versus the US one. Thus differences in volume of venture capital are not only random, or due to the lateness of certain industry, they also mean deeper variations, that can be explained either by deep social differences between countries or by a different path-dependent evolution of the national venture capital industry.

4.1.1 Israel

The Israeli example is very important. Israel did not have a very important position in the world of venture capital ten to fifteen years ago In the last decade it undertaken a radical change in public policy and managed to dramatically increase the number of venture capitalists as well as the number of successful technology ventures. An example is AOL's purchase of Ubique and ICQ, Boston Scientific's acquisition of Medinol or Intel's acquisition of Shamy.

Description

There are currently 32 venture capital funds with a total of $500m invested in Israel.

The Tel Aviv stock market faced an important crash in the 90s because of the outperformance of stocks from firms which went public too early. Consequently, the Tel-Aviv stock market changed its policy and prohibited early-stage IPOs. It also opened its market to the foreign venture capitalist world and more specifically to the American one.

Israeli IPOs are not limited to the TASE. The US stock exchanges are extensively used by Israeli companies with US$1.5b raised in 1996. Today more than 70 Israeli ventures are listed on the NASDAQ versus only around ten French ones, among which we find LVMH or Dassault Systemes which cannot be considered start-ups.. Trade sales of Israeli ventures by foreign companies are also very common.

This policy managed to simultaneously give Israel the third position for venture capital in the world as well as a tremendous breakthrough in technological innovation in Israel which is backed up by the powerful American venture capitalist industry. It managed to attract venture capitalists in the early stage ventures, thus the average company age in the portfolios of Israeli venture capitalists is between 1.5 and 2 years. Their main focus is companies in Information Technologies, Electronic or biotechnologies. Today the Israeli main core of entrepreneurs are scientists and engineers who left their previous jobs to start their own companies. New immigrants and skilled scientists from the former Soviet Union add to this contingent.

Israeli Public Policy

The Israel government managed to open its market to foreign investors. Through audacious reforms they managed to develop a flourishing venture capital industry and a booming entrepreneurship trend.

Between 1988 and 1992 Israel had only one active venture capital fund (US$30m). At this time major investors in private equity funds were investment companies that belonged to holdings like Hapolain, IDB, Leumi, Israel Corp., Koor, Clal and Elron Groups.

In 1991-92 the Likud set up the Yozma venture capital program. The Yozma program is credited with doing more to create venture capital industry than any other act. It encourages venture capital investment and direct investment in companies. It also encouraged foreign and local corporations to associate by co-investing in technology start-ups.

The Government of Israel owned Yozma Venture Capital Ltd. with a capital of $100m in

1993. This was used to join as a partner with investors in new venture capital firms. Yozma Venture Capital has in each case taken a minority till, 40% of the total capital of each fund up to $8 million. The Yozma program offers another incentive as the private partners have a buyout option under which they may purchase Yozma's interest in the fund anytime during the first five years under pre-set terms. A successful fund therefore would further capitalize from the program by buying out Yozma's interest, thereby further improving its performance. Foreign investors have contributed slightly less than 45% of the capital raised by Yozma funds.

By 1996, Israel's venture capital industry had raised more that US$1b and the government decided to exit the market. Even still it remains as temporary legislation that allows tax-exemption for investment in Israel by foreign venture funds if they had tax-free status in their home countries.

Another initiative is the Inbal public funds. These are publicly-listed venture capitals insured by the Government of Israel. They are insured on 80% of their original nominal investment after 7 to 9 years. These funds invest in small, emerging growth companies where the Inbal funds usually take 50% of voting shares. This program was not as successful as Yozma. There are currently only two Inbal funds, both on the TASE. Even if these funds proved to be popular, the tight regulations by the government and the Inbal premium of 0.2% have generally dissuaded many investment managers from establishing Inbal funds.

The Office of the Chief Scientist (OCS) of the Ministry of Industry and Trade administers the Law for Encouragement of Industrial Research and Development which targets developing science and the technology infrastructure of the state. Its budget went from $110m in 1990 to $370m in 1995. It distributes grants to new ventures that is a very strong incentive for venture to support them as well. Currently the OCS supports around 1000 new enterprises.

Its favorable taxation laws for individual investors is also an asset. For persons not in the business of trading securities, capital gains on the sale of securities at the TASE (Tel Aviv Stock Exchange) or securities in Israeli companies but listed on recognized foreign stock exchanges are exempt from capital gains taxed in Israel. Dividends are taxed at a maximum of 25% and interest is taxed at a maximum of 45%. Certain resident corporations receives a tax break on dividends. Finally, foreign investors can not be taxed over 25% on dividends and interests. Through these laws the equity market becomes very attractive and very dynamic. Numerous

Israeli firms went successfully public. The TASE is by far the strongest Middle East capital market with 654 listed companies in 1995.

The BIRD Foundation (Binational Industrial Research and Development): its mission is to promote US/Israeli corporate partnership investments in Israeli high technology start-ups.. Its average budget is around US$1m over a 12-15 month period. It supports generally till 50% of all R&D expenses without taking an equity position in the company. Instead it receives 150% repayment from successful projects.

4.1.2 Germany

Description

German VC industry is quite late with respect to France or the UK. The German venture capital industry is characterized by a substantial weight of banks in the investor side. Most of the investments are made in later stages with almost none in the very early stages. Venture capital in Germany is still relatively insignificant.. As a percentage of the GDP, new and early stage investments were only 0.0063 in 1995. Finally, the preferred exit mode is LBOs rather than IPOs.

Part of the problem in Germany is a cultural aversion to risk taking. For example, there is still a ban on a person becoming a director again, if a company goes bankrupt.

Because corporations cannot obtain reductions in their capital gains tax, the tax system does not favor venture capital investments. Corporate investments are taxed at the 56% corporate tax rate. Trade taxes and capital transaction taxes provide an additional burden.

In 1987 the Geregelter Markt was created to provide an exit mechanism for start-ups. Other markets are the Amtlicher Handel (main stock market) and the Telefonverkehr (an unregulated market similar to the US OTC market). Since 1995 a new market appeared, the Neuer Market, with the purpose of offering high-growth companies a way of raising capital.

German Public Policy

There was always a German's public policy towards promoting new enterprises in Germany, but it is only as of late that it focussed on venture capital as a means to reach this goal. The public programs are also creative and involve ambitious means.

Germany's policy for supporting enterprises started right after WW-II with the European Recovery Program (ERP) . It proposed to grow small businesses by providing low interest loans. They were distributed by two banks, the Ausgleichsbank (German Bank for Compensation) and the Deutsche Bank fuer der Wiederaufbau (German Bank for Reconstruction). Many of these programs had non-profit-oriented objectives, such as labor market or environmental considerations. This was an additional burden for new ventures.

In the 1950s and 1960s Kapitalbeteilungsgesellschaften or KBG (Equity Stock Companies) were created as an alternate way of developing small and medium-sized companies. The KBGs provide firms seeking to expand with equity or near-equities. They are owned by banks or by state governments. Depending on whether they are private or public, they are more or less profit-oriented. They are very different from classical venture capitalists because they provide little management monitoring or support.

In the 1970s the first structure for more risky start-ups appeared, the first German venture capitalist: The Deutsche Gesellschaft fuer Wagniskapital or WFG (German Society for Venture Capital). It started with a pool of 29 German financial institutions and important government participation. It was mainly focussed on high-technology ventures. The government agreed to cover up to 75% of capital losses, and participates in operating costs. At first it was focussed on start-up companies but in the 1980s it split its fund equally between companies earning DM 1 to 10 million (US$ 0.6 to 6 million) per year and companies earning between DM 20 and 50 million (US$ 11.4 to 28.6 million) per year. In 1984 it was restructured again by shifting investments toward later stage ventures and by reducing the number of partners to 5. The industry focus became wider and non-technology investments took a large part of the total. Finally in 1988, Deutsche Bank bought out the other partners and integrated WFG into its own subsidiaries.

Gradually other players entered the scene with the first ones all received government funding.. We have in order of apparition the Hannover Finanz GmbH in 1979, the Landesfonds des Landes Berlin in 1982. In 1983 eight new companies appeared. The trend was growing and by 1995 the German Venture Capital Association (Bundesverband Deutscher Kapitalbeteiligungsgesellschaften or BVK)counted over 100 members.

The German government initiated numerous programs to promote creation of new technol-

ogy enterprises by attracting investors and providing capital. From 1989 to 1995, Germany had the Beteiligungskapital fuer Junge Technologieunternehmen or BJTU (Equity Participation for Young Technology Companies). It was operated by the government-owned Ausgleich Bank. Its goal was to incite a mechanism for venture capitalist in the creation stage. There were tow parallel actions, aids for the liquidity of private investors' investment as well as refinancing their investment for which the program offered loans till DM1m for private investors that could be venture capitalists, and guaranteed them at 90%. The program was also investing at the investors' side. Investors had two options. In case of failure they could sell their shares to the BJTU at a discount to book value of 40% discount to the nominal value. Otherwise, in case of success they could purchase the BJTU shares at 25% above its nominal value. This program was very successful.

The Beteiligungskapital fuer Kleine Technologieunternehmen or BTU (Equity Participation for Small Technology Companies) succeeded the BJTU from 1995 to 2000. It focuses on new firms and tries to attract private investors. To do this, it brings in public capital at a level matching the investment of a private investor. It also has a guarantee scheme that reimburses up to 50% of the investors' losses.

There were also attempts to increase the opportunity to raise public capitals for some companies. Thus the Neuer Market was created.

Germany also tried new statutes in order to promote venture capital. In 1987 the Unternehmenbeteiligungsgesellschaften or UBGs (Societies for Enterprise Participation). They enjoy certain tax reductions.

4.1.3 United States

Presentation of the VC market

The US has the largest number of venture capital firms. They are first when it comes to global volume of investments and the number of investments. Their biggest investors are pension funds which are around 40%. Behind them are life-insurance companies and banks which participate in 20%. Their preferred exit mode is trough an IPO. Their distribution per stage is rather well-distributed. The percentage of capital distributed is by far the highest in the expansion stage which is the most costly for the venture. Early stages manage to gather around 10% of

the total distributed funds. The venture capital industry is also very concentrated in certain specific locations where it is very dense and where the innovation and creation rates of new ventures is dramatically high. We find VCs mainly in California and New-England, but also Chicago and Minneapolis neighborhoods.

IT Ventures

The American IT ventures are usually gathered around centres. They are usually very dynamical, with high-level universities in technics as well as in business. The most specific location is the Silicon Valley (CA). It gathered numerous prestigious universities like Stanford and UC Berkeley. Other centres have risen, among the most important ones is the Road 128 in the Boston area with Harvard and MIT. Another is the area of the Northeastern universities around Chicago. We must also point out the example of Austin (TX) with the proximity of Rice University, and other new factors that make it a favorable location for a new technological centre. We can see for instance, the presence of important fortunes in the state that are ready to invest, and also a dynamic goodwill from the local institutions which attract new ventures by favoring their environment, low cost of living, and dynamic educational training...

In the US many of the technology ventures are created by undergraduates that may occasionally drop out of their university before their graduation. Another important part is by PhDs, graduate students, professors and/or researchers

History

With important Bostonian characters, one being the president of MIT, the American senator Ralph Flanders created a new type of institution, American Research and Development (ARD). Its success really occurred when the general Georges F. Doriot became CEO of ARD in December 1946. ARD since has become the very model of the future modern venture capital.

In the 60's came an important trust from the US Stock-market in the high-tech industries. The immediate consequence was an overperformance of stocks and a great period for Venture capitalists. unfortunately, the 70's bred the issue of economical crisis. Risk-averse behaviors rose. They were expressed through a preference for traditional investments that downsized the volume of venture capital. This was exacerbated by a mistake from the US government which

increased tax on long-term bonus (plus-value) from 15% to 49%. They managed to repair this later by decreasing the tax on long-term bonus and loosening statutory and legal rules for pension funds.

In 1984 the stock market collapsed in value again because of overestimated values of stocks. Ever since there has been a constant trend of watching out for that kind of bias by monitoring and controlling the stock market. The immediate consequence was also that the venture capital industry stopped its growth during this period.

Because of this, in 1991, the US government helped with fiscal measures. Growth started again. In 1994 the SBIC program that went back as far as 1958, was reviewed through a public program. SBIC are controlled by the Small Business Administration that issue them a certificate. Most of the funds are now private but they are levered by government loans with preferential interest rates. Since then, the SBIC has played an ever prevailing role in American development.

Public policy through history

The US government played an important role in promoting the venture capital industry. For instance, in the 60's and 70's it encouraged the creation of Small Business Investment Corporations (SBIC) which were supposed to have a regional action funded by public money. They managed to represent 10% of the resources of the American venture capitalist industry, e.g. around $700 millions/ year. It remains focused on regional development. By far, it has proven to be better than any other American program. Some examples are the Community Equity Corporation of Chicago or the Massachusetts Technology Development Corporation (MTDC)(1978). The MTDC, with an annual revenue of $17 million, was created in 1978. It is currently owned by the state of Massachusetts, the US government, some banking organizations, MIT, and pension funds. The returns on investment are not as important for public investors as for private ones. Their average token per operation is close to $6.5 million.

The law forbids investors in young ventures from immediately selling all their stocks at the IPO. A VC must have two years to sell out its stocks. Hence, it will keep on following the venture and its stock value.

The Employee Retirement Income Security Act (ERISA)(1979) clarified by US Department

of Labor is a policy shift that for the first time enabled pension funds to freely invest in high-risk assets, included venture capital funds.

Brand new programs from the SEC: Small Corporate Offering Registration (SCOR) is a program started by the US SEC in 1992 as a way of helping small businesses get easier access to equity capital, while satisfying SEC requirements. The target is to develop a filing process for the application to the stockmarket that is simple enough for an entrepreneur, his corporate attorney, and his accountant to complete, yet thorough enough for full disclosure. Using this process, small companies can raise up to US$1m in equity capital annually by selling securities every 12 months. Filling a SCOR is much less expensive than completing a traditional IPO. An IPO usually can cost $300,000 whereas a SCOR registration can be filed for under US$10,000

4.1.4 Other Countries

Portugal

Portuguese Public Policy In 1986 Portugal was about the worst European country when it came to its ratio of private equity investment as a proportion of GDP. At this time the Portuguese government created a new type of corporate structure, the venture capital corporation which was granted several tax benefits including an exemption from the tax on new company incorporation, an exemption from income tax and other taxes during the first four years of life, and thereafter tax deferment on the profits that were appropriated to reserves and destined for new venture capital projects over the next three years The consequence of this was an important rise (by a factor of 38 between 1986 and 1987) in the volume raised by private equity.

Besides this, the government provided direct funding through the two EC agencies, NORDEPIP and SULDEPIP, in order to support the regional development. The public funds invested in private equity reached the step of 57% of the new funds raised by 1994.

After initiating the industry the government was able to withdraw the public intervention from the industry and gradually decrease the amount of public investments in order to let the banks take over.

Holland

Dutch Public Policy The Netherlands are a good example of government involvement in a mature private equity industry. It did not change significantly in amount, but with respect to the total volume of private equity investment, it dropped.

The government has also withdrawn its guarantee scheme for private venture capital companies. This program was launched in 1981, and was supposed to cover up to 50% losses incurred by VCs. This ratio was reduced in 1990 and discontinued at the end of 1995, however, the Dutch private equity industry was able to maintain its growth despite the withdrawal of the government support.

Norway

Norwegian Public Policy In 1993 the government created the Norwegian State Industrial and Regional Development Fund. From 1993 to 1995 public investment went from a third of private equity investment to 50% of them.

This action managed to attract new investors by increasing the private equity market by 236% between 1993 and 1995.

Ireland

Irish Public Policy The government made a recommendation to invest private equity in the pension funds. This bred an increase of a factor of 7 in a single year, 1994. Besides this, the government lowered the income and corporate taxes down to 12%. This favorable fiscal environment attracted a lot of foreign investments. It especially made US companies willing to settle down in Ireland when setting up a European branch.

Singapore

Singapore had began new programs by 1995. Among the key incentives were tax reductions for venture funds, subsidies for the training of new venture capital professionals, and direct investments in new ventures and university spin offs. The impact was substantial. In 1985 there were only two funds that were managing US$42m. By 1996, over 100 funds managed over US$7.7b.

The British situation

Description The UK benefits from a very favorable and fiscal environment. It manages to be the first European country in the word with respect to venture capital amounts. Like the US, its main investors are pension funds and life-insurance firms. The UK is the country of the largest LBOs and MBIs. It is also the birthplace of the European venture capital. The British firm Investors In Industry (3I), which comes from the first European Venture capitalist EED, is the most important European venture capital fund in Europe.

Still there remains social hurdles for entrepreneurship. Though they are the source of wealth in the company, salesman in a firm have a very low social status.

British Public Policy The UK incentive programs occur mainly through the available statute of the venture capitalist.

- Venture Capital Trust (VCT): the status provides income tax relief on investments and capital gains tax deferral in the case of capital reinvestment
- Enterprise Investment Schemes (EIS): This is the successor program to the Business Expansion Scheme. It provides tax relief on investment as well as relief from capital taxation
- Small Firms Loan Guarantee Scheme (SFLGS): Introduced in 1981, it helped 41,000 loans between 1986 and 1996.
- Share option schemes: They allow innovative and precisely tailored incentive compensation plans to be implemented.

There is also financing through grants and awards programs available, but these tend to be fairly small, totalling only around $50m per year.

Finally in 1995 the Alternative Investment Market (AIM) was created in order to take over the Unlisted Securities Market. In 18 months it listed close to 250 companies. It is more open than the French Nouveau Marché. For instance, it contains a soccer club, a lingerie firm, and of course technology firms.

Italian Public Policy

The Italian government has also permitted pension funds and banks to invest in non-public small and medium sized ventures.

In 1994, the public sector increased its influence in the venture capital industry. This caused a growth in early stage investments. The Italian professional association, AIFI, currently has over 30 members.

Belgium

Belgium houses around 15 venture capital funds that are homogeneously distributed across the various stages.

Its new small capitalization stockmarket, Euro-NM, provides much more liquidity for the exit process.

Sweden

Sweden has managed to obtain a significant position in the European venture capital industry, however, it is missing early-stage investors.

Denmark

Denmark has a small number of venture capitalists. In 1994, the Danish government managed to introduce a guarantee program which is very close to SOLARIS. This has had a positive influence and the number of venture capitalists has increased.

Spain

Finland

Finland had a strong development of its venture capital industry in 1994.

Banks and pension funds were encouraged to invest in venture capital by government action. The share of these institutions in total venture capital raised from 20% in 1994 to 79% in 1995.

Australia

A measure similar to the US ERISA act was taken by the Australian Reserve Bank. This action allowed banks to make equity investments in small and medium sized enterprises.

4.2 General Considerations

4.2.1 Factors That May Influence VCs' Presence

Most of these remarks are drawn from the article by Leslie A. Jeng and Philipp C. Wells [27, 1998]. They compared 21 countries according to different factors which they estimated significant for promoting venture capitalist. They also demonstrated that impact was strongly dependent on the stage of investment. Investments in early stage ventures were not sensitive to the same factors that investments in later stage ventures were. They also showed that including or excluding public investments change dramatically the sensitivity of the venture capitalist to the various factors. Along with other which I deem important, I will try to introduce the main factors that were discovered.

Opportunities for IPO

A well defined exit mechanism is important. Between going public or being acquired, the most common one is through an IPO. A study conducted by Venture Economics in 1998 showed that in the long run, the average return on an average holding period of 4 years is 195 percent for an eventually public company, whereas it is 40% for an acquired company.

The experience demonstrated that IPOs opportunities had a strong influence on venture capitalist acitivity. Therefore, the presence of dynamic and liquid small capitalization stock-market is important. This also explains why countries with a bank-centered financial system cannot embrace as much venture capital as stock-market centered countries. This can also be explained by various legal criteria, especially the ones that protect shareholders on the financial markets.

GDP and Market Capitalization Growth

GDP can be found on the IMF's International Financial Statistics Yearbook. Market capitalization data can be found in the IMF's Emerging Market Fact Book. It would be expected that both would have an effect on the venture capital development in a country. However, their impact is almost insignificant.

Labor Market Rigidities

Salhman [43, 1990] elaborated on the reasons why labor market rigidities impacted the demand for venture capital in Germany and Japan, which are among the most extreme countries on this matter. The rigidity of labor markets can be measured in two ways: either by measuring the average job tenure of individuals who have completed some tertiary education or looking at the whole labor market and gauging what percentage of the labor force has tenure over ten years These people are supposed to be the most likely to start a new business. Other more detailed works and evaluation criteria are also developed by the OECD in its Employment Outlook [35, 1994] and [36, 1997].

They noticed that countries that were not favorable to venture capitalists were also the ones that have long labor turnover. As expected, the negative correlation of the labor market rigidity and the venture capital dynamism is significant in the early-stages investments.

Accounting Standards

Information has a value in financial markets, and it is highly correlated with risk. In the world of small technology businesses, there is a lot of asymmetric information and a lot of risk as to evaluating young ventures. In consequence, investors are usually more risk-adverse or demand higher risk-premium. A way of discouraging this behavior is to enforce strict and clear accounting standards and disclosure rules. This should reduce the fear of the insider on stockmarkets.

A way of rating accounting standards is to use the index provided by International Accounting and Auditing Trends, Center for International Financial Analysis and Research, Inc. They compare companies across countries with respect to ninety accounting items.

Private Pension Funds, and Life Insurance Companies

The opportunity to raise money from these two classical long-term investors is a great chance for a national venture capital industry. Few pension funds can invest a subsequent amount of money and very few of them are sufficient to really give a push to this industry.

As forecasted, private pension funds have a positive and significant impact on the national venture capitalist world.

Government Programs

Public programs do matter in the venture capital world. They may initiate the national venture capital, or leverage an existing weak national venture capital industry, where otherwise there would have been no change.

In the comparative evaluation, researchers found that public funds can change the characteristics of a national venture capital industry. This is mainly because public funds and public organizations are not committed to market laws.

Welcoming Structures for Foreign Investors

The financial market is becoming more and more global. Financial markets are in competition with each other. New IT ventures need an increasingly international scope, and often international support. The future of venture capital will not be constrained by national borders. Therefore, a determinant factor in its domestic success requires a welcoming structure for foreign investors or foreign venture capitalist.

Legal Influence

The legal status of the venture capital industry or its interlocutors may be more or less favorable to this type of infrastructure. For instance, laws can lift the ban on pension funds investing in risky capital. Laws can also create special status for venture capital. Laws can authorize or prohibit the tools that venture capitalists use for monitoring such as the various equities. Likewise, the legal mechanism, options, and consequences of bankruptcy may also be dissident for both the venture and the venture capitalist.

More generally the different traditions in law offer various protections to the shareholders versus creditor rights.

René David and John E.C. Brierley distinguish four main traditions of western law: English, French, German and Scandinavian [11, 1978]. Most of these western standards were spread around the globe during the age of colonization..

The French, German, and Scandinavian are various forms of Roman law which is also called code written law. Roman laws were made in the Universities that were teaching them. In consequence, they came mostly from theoretical and philosophical reflections about society and how the people should behave. Their common baselines were the Roman laws with the Justinian's compilations, as well as the Canon laws. Most of the differences came afterwards with the arrival of Barbarians, and their modifications to domestic laws. After the dark age period, where the reign of law disappeared, the renaissance of the twelfth and thirteenth centuries lead to a revival. Philosophers and jurists demanded that secular society be founded on law, and that law be founded on justice which Reason had revealed. Because the law was based on Reason, it was suited for universal applications. In the same logic the Natural Law School claimed man had "natural rights", and treated law as a science. Because of the primacy of the written law, the judicial precedents are not law and the Latin maxim summarizes very well that idea "non exemplis sed legibus judicantum est" or we do not judge from examples but from laws. However, certain cases can be selected and used by the Supreme Court to explain to judges the meaning of a new law. Most of the differences within the Latin laws are between the degree of freedom the judge has in interpreting and making a decision.

The French tradition is the hardest as to this matter. If a text is clear, a judge must apply its literal meaning. Otherwise, the French jurisprudence filled the gap. It is not a law based on precedents. French traditional law countries are France, Argentina, Belgium, Brazil, Chile, Greece, Indonesia, Italy, Mexico, Netherlands, Philippines, Portugal, Spain, Turkey.

In the German tradition, the written law is not so compulsory as to be applied literally.. For instance, Judges, when needed, neutralized certain detailed provisions of the German Civil Code (BGB) by putting forward the general clauses or provisions in the BGB itself, such as the idea that respect must be paid to good morals. German traditional law countries are Germany, Austria, Japan, South Korea, Switzerland, and Taiwan.

In the Nordic countries tradition, there are rules for judges (Domarereglerna), that are the expression of popular wisdom. Some of these free the judge to apply the law, "if it proves mischievous". The Scandinavian tradition law countries are Denmark, Finland, Norway, Sweden.

The common law created by the royal courts of Westminster, is a "judge-made" law. The role of judicial decisions is not only to apply, but also to define the legal rules. Therefore, the duty to observe judicial precedents is the logic of a judge-made rule. Holmes summarized its ideas very well by saying "The life of the law has not been logic; the life of the law has been experience." The common law countries are UK, the US, Australia, Canada, Hong-Kong, India, Ireland, Israel, Malaysia, New Zealand, Pakistan, Singapore, South Africa, Thailand.

Rafael La Porta and his colleagues analyzed the various traditions across various financial criteria [25, 1997]. Within the same legal traditions, countries have different amounts of protection that the shareholder can expect when compared with the debtholder. These aspects have an influence of the financial means that people or firms will use. Countries whose financial systems offer entrepreneurs better terms of external finance would then have both higher valuations of securities and broader capital market. Countries that offer better legal protections enable the financiers to offer external financing at better terms, and therefore should have higher valuations of securities and broader capital market.

They identified various legal protection criteria that should influence the choice of potential investors. For equity they are more the voting rights, whereas for debt they are the liquidation and reorganization procedures in case of default from the borrower. (refer to table 4.1)

The results were that in both equity and debtmarkets, common law countries guaranteed the best access and had the broadest and largest markets with the highest ratio of companies listed per capita. The rule of law is in average 6.46/10 for common law countries, 6.05 for French tradition countries, 8.68 for German tradition countries and 10 for Scandinavian tradition countries. The anti-director rights is by far the highest in common law countries with 3.39/5, versus the lowest in French-tradition countries with 1.76, and intermediates at 2.00 in the German tradition countries, and 2.50 in the Scandinavian tradition countries.

For aggregate debt as a share of GNP, German civil law countries arrive ahead with 98 %, whereas common law countries reach 68%, Scandinavian civil law countries 57 % and French civil law countries 45 %. The creditor rights index is also the highest in common law countries

Criteria	Explanation
Rule of Law	Assessment of the law and order tradition in the country: from The International Country Risk Guide
Antidirector rights index 1 or 0 for each option	1) the country allows shareholders to mail their proxy vote 2) shareholders are not required to deposit their shares prior to the General Shareholders' Meeting 3) cumulative voting is allowed 4) an oppressed minorities mechanism is in place 5) when the minimum percentage of share capital that entitles a shareholder to call an Extraordinary Shareholders' Metting is less than equal to 10%
One-share=one-vote	If adequate country law requires that ordinary shares carry one vote per share, or prohibits the existence of both multiple-voting and non-voting ordinary shares and does not allow firms to set a maximum number of votes per shareholder
Creditors rights index 1 or 0 for each option	1) the country imposes restrictions, such as creditors' consent or minimum dividends, to file for reorganization 2) secured creditors are able to gain possession of their security once the reorganization petition has been approved 3) the debtor does not retain the administration of its property pending the resolution of the reorganization 4) secured creditors are ranked first in the distribution of the proceeds that result from the disposition of the assets of a bankrupt firm.

Table 4.1: Legal Determinants of External Finance from R. La Porta and al

at 3.11/4, the lowest in French civil law countries with 1.58 and intermediate in German and Scandinavian civil law countries at respectively 2.33 and 2.00.

Their results show that civil law countries and especially French civil law countries have both the weakest investor protections and the least developed capital market.

Fiscal Influence

Of course taxes always matter. Advantages in tax regime is a huge incentive for venture capitalists. It may also be an important one if it applies to its investors, like life-insurance firms or pension funds, or to its customers, the entrepreneurs.

Of course, legal status that allow one layer of taxation are desired by venture capital.

Taxes on long-term capital gains is a sensitive element. Increasing them may make investors shift to other investments, and may empty the source of investors for venture capitalists.

At a lower degree, high taxes on interest and dividends may also have a negative impact on the amount invested in capital markets.

On the other hand, high-taxes on corporate profits or on personal income is a barrier for starting a new company because it reduces the advantage of being an entrepreneur compared to embracing a corporate career. It underestimates the risk, and does not reward it in an appropriate way.

4.3 Analysis of the French Situation

4.3.1 Assets

France has numerous assets to promote technological innovation.

A Noteworthy Educational Heritage

First of all, it has noteworthy intellectual capital in technology. This is due mainly to a high-quality scientific education. The French academic system is famous by its high-level academic standards which begin in high school with a high emphasis on science, theory. Students develop their analytical and Cartesian skills. Next, the system splits in two. On one side, highly-competitive exams for engineering schools force selected students to acquire a good baseline in

all technological areas before specializing in a specific one. On the other side, university degree courses provide students with complete and exhaustive studies in a specific field and usually leads to an advanced degree, either a Master of Science or PhD. The free educational system treats every student as equal, allows them to reach their potential, and go to the level of studies he or she wants without the need of educational loans.

An Excellent Research and Technology

The French research is also very advanced. We can mainly break it down into two areas. The public research occurs in universities and public organizations such as INRIA, INSERM, CEA... It is high-quality research with most of our Nobel prizes coming from this pool of researchers. It is mainly oriented to fundamental research, but most of their findings are being more and more exploited by industry. Many public researchers are willing to market their results. On the other side the industrial research is also powerful. Big corporations use important and competitive laboratories as motors for pulling innovation.

The Necessary Financial Institutions

With the EASDAQ, and the Nouveau Marche, France is dotted with the necessary structures to have a powerful stockmarket that can take over from investment funds and promote young ventures. The French venture market starts a new era. There is evidence that France has became a favorable land for venture capitalists and innovation. In the last decade, more and more foreign VCs are investing in France. New jobs, such as Capital de Proximité, have appeared since

A Tailored Regulatory System

The French regulatory system is composed of particular cases. There is at least one specific tailored status for each type of organization. We have seen the FCPR, SCR and FCPI status for venture capitalist. There is also a very complex tax-computation pool in order to act equally between citizens, and to have incentives promoting different businesses or investments. The government uses various tools such as non linear variable tax yields, caps for taxes, floors for taxability, and tax-credits on certain expenses.

There are also numerous tax agreements with foreign countries which try to avoid the double taxation of investments in France.

Very Brilliant and Active Public Authorities

A French cultural phenomenon is that most brilliant young French students start their professional life in the administration. The consequence of this is that the French public action is usually enlightened. Legislators have a very exhaustive vision of the various stakeholders and it often leads to a very complete regulatory system, that takes into account all the constraints. They manage to create incentives, as well as deterrents from abusing favored status or from embezzling aids. Another consequence is that French public funds are also very active and very eager to succeed.

This quality management allows a good listening power, and a good partnership between the AFIC and the French Ministry of Finances. The government is willing to adjust its policy to meet the expectations of this influential broker group.

A Long-Term Seductive Policy on Venture Capitalists

The French fiscal environment is considered favorable to venture capital investment by the EVCA. The one tax layer status or tax-transparent vehicles, with a single tax-burden of 16%.

Besides the guarantee funds that support investments of venture capitalist. The government also unfreezes public aids for initial funding and offers tax-incentives for investors who invest their money in venture capital.

4.3.2 Hurdles

On the other hand, there are also several hurdles in France that slow down the breakthrough of innovation.

The Rigidity of the French Labor Market

One substantial hurdle is the rigidity of the French labor market. One of the important consequence of this rigidness is that it makes an employee's decision to leave his job and start his own business very difficult. It is often dishonorable to leave a job. It is mainly perceived as a

breach of contract. Simultaneously, one loses valuable benefits of seniority. (see the Economist [3, 01/15/97]).

Indeed this rigidity filters through the French system of promotion, which is based on the length of service rather than skills or results. This, unfortunately, does not bring any incentive for additional effort to update one's knowledge. New technologies come mostly from the newly-hired which bring mew processes and methods from past experiences or classes. also, it is understood that leaving a position after 10 years is more than likely to be a pure loss, if one later returns to the corporate world.

An Overall Conservative Attitude against Risk and Unleashed Profit

There is an adverse cultural attitude towards risk and the entrepreneurship spirit. It is a hidden prejudice in the conscience of society, a traditional opposition between profit-oriented and sane activities. Making a profit would be always at the expense of people, thus an exploitation, and therefore considered evil. Money vitiates any kind of action. In consequence, teaching and research jobs are mainly public. A good example of this is that public organizations or workers cannot make profits either in their public job or in an additional one. It is meant to be a service, and the optimal service is to be made it free. Besides this, having parallel jobs where people can make money may push them to devote more time to paying tasks rather than to the public service. In addition, people that cumulate public and private tasks may use public services and facilities to serve their own private interest. Hence, it is forbidden to cumulate a research or teaching position and to be an entrepreneur at the same time. Likewise, it is very unlikely that one chooses a job for the salary and totally unlikely that one does it openly speaking.

Another social prejudice is that a self-made person will always be bound with an implied prejudice of dishonesty. This idea comes from the fact that French society was built with the baseline of an equal world instead of a world that rewards outstanding individuals.

French behavior is also very conservative. If they were the first ones to use IT with Minitel, today they are still with Minitel, while the US and Asian nations are fully connected on Internet. It is obvious that success of innovation is also bound to educating French people in their attitude towards change.

A Heavy and Complex Procedural Structure

There are also remaining old social and economical mechanisms that are not favorable for innovation and for the creation of start-ups. We can speak of the burden of the legatory structure, which has as many constraints on small organizations as on big corporations. With such a complex status and a high-complexity of paperwork, it is difficult to start a new business. In addition, the complexity of the regulations from labor laws and the various inspections from public agencies are very costly.

The process of creation is also very long and complex for the entrepreneurs. For instance in MA or Silicon Valley: the creation of a corporation requires a trip to a bank branch, to pay around $20 and to fill out a 20-minute form. There is no comparison with the French process, which in the best case takes at least a month and is much more costly.

Besides this, in France there is a financial liability for people on the administrative board of corporations. The reason for this is that unlike simple shareholders, they can influence the operations of the firm, and should be tied to their actions. This is a deterrent for venture capitalists which usually sit on the board of their portfolio ventures, and take an active part in their management.

A Gap between Industry and the World of Education and Research

Due to the difference between goals of public and private organizations and a rather defective communication between them, we can notice a gap between research and industry.

An important part of the research occurs in the public sector, where the government has dotted the country with important research organizations. However, this research is rather fundamental and not much applied. Besides this, the relationships with the industrial world is usually considered profit-oriented, whereas the public domain is meant to be science-oriented. This led to a high competition between industry and public organizations to get the brightest minds. The public sectors manage to offer them job security and a certain freedom of research. Salaries are high enough to make the public positions competitive with the jobs that are offered by industry.

A deep reason for this gap lies in the French academic system. This gap is obvious when it comes to applied courses in high-technology. The main forgotten sectors of the French scholar

system are electronic, robotics, and networks. Programming has been given a warmer welcome than the material technologies. The algorithmic part and the evaluation of algorithm complexity is much more emphasized than the programming languages and the program implementation. A good comparison is the US Universities with their variety of departments in these domains: chip manufacturing process, programming. It is important to notice that their departments are often at the head of the hardware technology, or communication protocol. Their way of doing fundamental research is to work on the applications for 5 to ten years ahead of time. On the opposite side, the French academic system is oriented towards the theoretical aspect of knowledge. In the principal engineering schools, advanced mathematical theories or the theory of the quantum physics with its formal mathematical expression is preferred to their applications, material science teaching, or electronics and circuits.

The gap between the academic world and the professional world may also be noticed by a relative lack of high-quality educational opportunities after graduation and the relative poor use of the existing ones by French companies. There are MBA programs in France, or programs for senior executives but their use by French companies does not compare to the intensive use and quality of the US MBA programs or high-level night classes for executives, or employees. In addition, most of the professional training programs in France are often a purely internal processes.

A Poor Financial Market

On a more practical note, in spite of clear improvements, it is still hard to find initial funding. Most of them are either insufficient or insufficiently advertised, or offer heavy liability which young entrepreneurs cannot always afford. For instance, bank loans are the most current and uncomfortable way. In case of failure there is no forgiveness. Filing for bankruptcy is more than irrevocable. Your personal file as debtor is marked forever and very few people will let you try a second time.

In addition, although our markets are considered nationally satisfying, they offer insufficient liquidity when compared to the English and American markets.

Another current issue for the mass-introduction of venture capital in France is that the returns on investments are still too low. In France the ROI is tracked as the TRI (Taux de

Retour sur Investissement). ABN AMRO, a Dutch Bank, did the first solid investigation on this. From 1986 to 1992, the return on investment was around 12% in France. From the statistics of AFIC-Ernst & Young we find a much lower value in the early stage investment. In 1995, 5.78% against 17.20% in the global capital industry, 13.77% over the time period 1990-1995 against 15.24% and 4.03% between 1985 and 1995 against 16.71%. This directly opposes the later stages returns on investment which were an average of 31.82% in 1995 and 34.79% between 1985 and 1995. The impressive performance of the American and British early stage ventures is mainly due to the higher liquidity of their small capitalization-stockmarkets (NASDAQ and AIM).

The absence of pension funds, which are huge providers of private capital, is a disadvantage with respect to France's neighbors. This would definitively increase the range of opportunities for venture capitalists, as well as increase the liquidity of French financial markets. On the other hand, if France opens its financial markets to foreign pension funds, it may lose some sovereignty of French corporations.

A Monoblock Social System Based on Elitism

The French elitist education system has several advantages such as the creation of a high-level pool of people which emulate each other in a competitive environment with a high feeling of achievement.

However, the system also has many drawbacks that are the consequence of too narrow an elitist system with too literal an appreciation by French people. This elitist system has the disadvantage in that people tend to make it the highest achievement of all and grant it too much importance. They draw incorrect conclusions. For instance, there is a strong feeling that the small bunch of people from the top of Grandes Ecoles could perform better than anybody else in any field. This is definitely wrong. France would be better off developing parallel academic paths by conserving the elitist vocation of each. Still, there is this remaining idea that the entrepreneurship spark should come out of the Grandes Ecoles people. On the other hand, these people have very few incentives to commit to a risky path such as creating a venture. Instead, they have numerous job offerings. And besides, all along their academic careers they were rewarded for their analytical qualities rather than for any risk-taking behaviors

or creativity.

This exaggerated importance breeds an insufficient confidence among most of the students. Because of the small number of elected people, some brilliant people obtain a feeling of failure or incomplete achievement from their studies which is perpetuated by the population's prejudices.

Another default in the current elitist system is that the whole society tries to copy it as in an aristocratic system. Because there top-education has a generic rather than applied pattern, most of the rest of the educational system tries to copy it, and at least use a similar set of values. One of the main consequences of these actions is a uniformity of educational path.

A Public Management That Is Still Natiocentered

In spite of the French expectations for international influence, the management of the public policy is still centered too much on France, and does not pay sufficient attention to parallel paths of other developed countries.

Indeed, instead of noticing the emergence of absolute trends in technology and business, France seems to keep the illusion that it may internationally succeed without coping with the global standards which are appearing everywhere. If French officials are aware of these trends, their reaction time is much slower than for domestic sources.

For instance, instead of taking rapid action to develop Internet infrastructures and instead of passing laws to support the development of those kind of businesses, they continue to provide financial aids to sustain traditional technologies for traditional lines of businesses.

This comes from the utopia of maintaining past industries that were the strength of certain regions, instead of setting up new industries in these same regions. This is rather obvious when you look at which regional training centers got government aids, wood-work, shoemaker, cooks and so on. Contrary to common idea, technology is not only high-graduated people's business. In the US, numerous technical people go back to school in order to learn and master specific technical aspects of one technology. Thereafter, they associate with business people and create their own firms. They never need to know either the whole quantum or mathematical theory.

Among other global standards, we have the emphasis on sales and marketing rather than on the technical purity of the design. We also have the trend of more and more international careers, and global markets. Finally, we have the importance of the customer support, the

usage stage of the product, and its recycling stage.

This aspect may be slightly modified in the following years because of a higher European awareness of the French administration.

4.3.3 Recommendation From the EVCA

In the document "Priorities for private equity"[5, 1998], the EVCA summarizes the global recommendations that the European professionals of venture capital industry make to governments.

They mainly identified five priorities within two groups. The first group increases the investment opportunities. It contains a cultural side by creating an entrepreneurial environment, and a fiscal side by encouraging tax-efficient share incentives. The second group improves the funding, first through a legal path, by developing long-term capital sources, then through a fiscal path by facilitating fund formation, and finally through an economic path by giving public support only when ventures are partnered with private equity.

Create an Entrepreneurial Environment

The EVCA proposed to do this by developing entrepreneurship education. It is a wrong to think that all entrepreneurial skills are innate. Most of them can be taught, as they are in the US universities. This may allow future entrepreneurs to avoid repeating the past mistakes of their peers. Besides this, schools can also transmit the necessary spirit to become an entrepreneur. They also attempt to remove the negative prejudices towards entrepreneurs through the use of success stories.

Increasing the community's awareness of the range of opportunities that MBO and MBI offer, would promote them, and open up new horizons to students and entrepreneurs.

Clarifying intellectual property and licensing ownership would allow processing them more efficiently. It would allow efficient enforcement as well. In that purpose, the regulatory institutions must be able to assess the patents without delay that may be costly to the entrepreneurs. Likewise, an effective protection would help fix the risk-aversion when it comes to creating technology ventures.

Through specific institutions, high-level technology issued from universities or research cen-

ters must be put to commercial use. The additional inflow of money may as well enable further purchases or enhancements of materials and facilities.

The promotion of a flexible work environment can be very helpful. This may be accomplished by creating portable pension funds, a flexible labor market with lighter social welfare taxes, and less stiff rules regarding hiring and laying off employees. This would reduce the huge expenses for small companies. Likewise, bankruptcy should not be stigmatized and countries should adopt more tolerant views of it. Similarly, the process of establishing a company should be straightforward and simple. The procedures for a company to be created and stay in business should be eased. If bureaucratic processes can slow any enterprise they may appear lethal for small ones.

Encouraging Tax-Efficient Shares Incentives

When moving from a large to a small companies, entrepreneurs and employees, such as managers, accept a lower initial income with an additional risk. In order to remain consecutive, this must be accompanied by an increase in the expected return of the operation. However if the public increasingly recognizes the role of entrepreneurs, that recognition is seldom echoed by economic reward in the form of favorable tax treatments. For instance, a low capital gains tax rate, tax deduction of losses, and up-front investment relief are ways to reward and motive someone in terms of the significant personal risk inherent in launching or joining a new business. The gains made by employees and entrepreneurs on their shares should be subject to a low capital gains tax and no other tax.

Stock options can be a very good, even necessary incentive to attract employees, skilled managers, and entrepreneurs to high-growth companies. It is possible to radically change the environment by setting the security and fiscal rules as to when and in which ratio these gains would be taxed. There should be no tax on the issue or exercise of options to buy shares, provided their exercise price is not less than what the market price was on the date the option was granted and the tax should only be incurred upon the sale of shares received from the exercise of the option.

Developing Long-Term Capital Sources

In order to develop long-term capital sources, we can encourage funded pension systems throughout Europe. The long-term requirement of private equity investment must be similar to its investors, such as pension funds or insurance companies. Currently pension systems vary across Europe. Some countries have a fund pension system. However, most of them including France rely on a pay-as-you-go social security pension system. Governments should be strongly encouraged to adopt funded pension systems.

After creating these potential sources of long-term capital, the next step is to ease their asset allocation restrictions. Pension funds are indeed handicapped by unfavorable regulation, taxation, and investment restrictions. The examples of the US and the UK, two countries that are reputed for having strong and efficient pension funds, suggest we should adopt "prudent man rules" rather than extensive tight quantitative guidelines. The ERISA action in the U.S. is interpreted as an important action for promoting venture capital through the investment of pension funds, and has had a remarkable impact on the US venture capital industry.

In order to let the market reach tis full efficiency, it is recommended that geographic restrictions be lifted. It is unacceptable that some countries still prohibit or limit pension funds from cross-border investing. Actually, they are in breach of the EU laws. European economies will benefit from free movement of capital.

Making the investment in small capitalization stocks efficient is a way of promoting venture capital as well. The liquidity of small capitalization markets will help the venture capital industry by favoring profitable exit process for their portfolio companies through IPOs. This is unfortunately not the case in Europe and in France, where the institutional investors have been insignificant buyers of small-company stocks. European authorities must first authorize the pension funds to invest in small capitalization stocks. These investments must be made possible by requiring high-standards for financial disclosure and strict standards of corporate governance. There must be developed intermediaries for small companies, with high quality investment bankers and research analysts providing advanced stock coverage.

Facilitating Fund Formation

Having transparent private equity fund structures and private equity funds that accommodate national and international investors throughout Europe is the first priority. Avoiding double taxation is the primary purpose. Venture capital is an increasingly international business. This is also an important advantage for venture capital backed firms in Europe which can set up subsidiaries in many different countries. Although such funds are in keeping with the EU's objective of a single European market, their structuring, marketing, and operation at present, create fiscal and regulatory nightmares. Different tax treatments and bilateral double taxation could easily be fixed by the adoption of European taxation standards for venture capitalist. Investors should also get any tax credits tied to dividends and interest. Withholding taxes should be minimized through the application of double tax treaties in the country of the investor.

The ultimate goal is a pan-European transparent fund structure. This will increase the amount of capital available within Europe for private companies. This will also increase transnational investments.

Give Public Support, Only When Partnered With Private Equity

First, governments must create the appropriate frameworks by establishing stable financial, fiscal, and legal regulations for venture capital.

Most of the public programs that are well-intentioned would be effective only if they are applied with caution and in partnership with private investors. We need to avoid misdirected or excessive public spending that can displace or retard the development of the private sector venture capitalists through unfair competition. On the contrary, government measures should stimulate the development of the private equity market based on the competitive functioning of professional funds managers. Besides this, public authorities should reduce the risks and costs inherent to venture capital by guaranteeing the investments. This must be done to the extent that it does not disturb the development of the private sector. The allocation of funding should be made using the skills of private equity professionals.

The public sector can bring additional advantages to promote the domestic venture capital industry. A good public program needs to have public funding leveraged by private capital.

It should have attractive returns to private investors as a key program objective. The most desirable and efficient public programs are the ones that strengthen the private equity markets, and as these private markets mature, are phased out.

4.3.4 Recommendations From the Guillaume Report

One of the important recommendations is opening more widely the venture capital markets to foreign investors and institutions. Usually funds lose their tax advantages when the company they support also receive support from foreign funds. This may be a problem if the new venture tries to get a broader scope and invest in foreign countries.

It also recommends the loosening of the ANVAR's criteria for innovative ventures. Currently, along with the possession of the shares by the funds, the number of employees of the venture must be limited and its budget must contain a minimal R&D part. This should instead only be checked at the original date of cash-flow. This would not force the funds to sell its shares as soon as the ventures reaches a certain level, or to prohibit prior investments during the innovative stage.

There is also a warning against limiting the overall election criteria to too narrow a range. Usually the laws can only benefit very specific kinds of ventures or investors. The advice is to loosen up the limitations in time and size. Usually the targeted ventures are only supported in their first 7 years and only if they are under a certain size with respect to the number of employees or annual revenue. This criteria for stopping the support is not always consistent with self-financing criteria. If it is a fund, the expectations as to the time-lag before reaching a critical size or self-financing state are very high and partly nonrealistic. Besides this, there are many limitations in order to prevent the possibility of a foreign participation. This may be a noteworthy hurdle if we attempt to attract foreign investors to France, or if the ventures wish to install offices in foreign countries.

The report emphasizes this trend to promote early stage investment versus other investments. It encourages keeping higher incentives for investing in the early stage development. One example is keeping a higher cover rate in the guarantee offered by SOFARIS.

They also advise increasing the density of the professional network of VCs and the Creation of "fonds d'amorçageamorcage", or funds to promote early stage ventures. In order to be

successful, they must be entrusted to professionals. They must also be destined to have mainly private capital at maturity. Besides this, the necessary requirement of flexibility for the decision-making process prohibits the presence of the state as a shareholder. These funds need to be very close to potential sources of entrepreneurs that are researchers, PhD students, and students from the Grandes Ecoles. We also have to watch that these attempts do not create unfair competition for existing private VCs. A proposal for the creation of two funds, one about Information Technologies and one about Biotechnologies, will mainly be dotted and controlled by the CDC. On a different scale, it proposed the creation of regional funds around the main academic zones.

4.3.5 Analysis of the Status of FCPR and SCR.

FCPR

The French FCPR structure offers several advantages that are usually expected for venture capital organizations such as a limited liability for investors, the fiscal transparency and even more with the additional advantage that if the income is reinvested by the FCPR, they are not taxed until they actually reach the investor, and finally the flexibility in management with the outstanding character of the "Société de Gestion".

On the other hand, there are also certain disadvantages in the current structure. The FCPR is a regulated entity, and therefore its investments are regulated as well. This measures leashes the investment although it was designed to safeguard the status from other organizations that would have liked to divert the tax-advantages.

SCR

As with the FCPR, SCR has several advantages that are usually expected for that type of business organization such as a limited liability for investors, the fiscal transparency for French investors with the same favorable timing of taxation, the opportunity to be exempted from income tax if the amounts are reinvested, and finally the flexibility in management.

On the other hand there are also certain disadvantages like "not truly" transparent for tax purposes abroad. The consequence is mainly that the US and UK will not treat it as a tax-transparent organization but rather as a corporation. This may then cause fiscal disadvantages

for investors. Also, because of the corporation status, it may be difficult for the SCR to immediately redistribute the proceeds of a sold investment.

Chapter 5

Recommendation

5.1 Recommended Policy

First of all, we have to notice that the French government attempted to set up a favorable legal and fiscal framework for venture capitalists. It already tried many of the solutions that led other countries to a successful industry, such as guarantee funds or state-owned funds for Israel. However, in spite of all these efforts, French results pale in comparison to some of their neighbors.

In the preceding parts we tried to sketch an objective picture of the French system, and a fair analysis of its current advantages and hurdles for the development of innovation and venture capitalism. Based on this information, we will try to develop a recommendation for a French policy. This seems to infer that a single action on venture capitalists is not sufficient, but rather that a more global action on their offer and demand, or better communication with clients is needed. By global action, I am referring to a consistent action led in all the domains, regulations, prices, labor policies, behaviors towards international, education, public institutions and so on at the same time.

This policy should be a credible solution, partly inspired from previous working solutions, yet also an individual solution. It cannot be an exact copy of other countries' solutions, but must use the French assets and be aware of its own specific hurdles. Finally, it must be a progressive and dynamic solution. It must indeed be progressive to be realizable.. Not everything can be accomplished at the same time nor does everything require the same amount

of time. Goals must be prioritized. The solutions must be dynamic. During the preparation and implementation of the program, the world will definitively change. Planning different strategies with the uncertainty of the future in mind will allow the plan to succeed even when the course of events leave their expected trajectories.

In order to address these different concerns, we break out the pool of recommendations between objectives that can themselves be broken down in three subfamilies. The first one is the immediate measures for the venture capitalists. The next two act on a longer run. They try to act on the demand and offer sides of venture capitalists by keeping the ultimate goal of innovation. The favorable structure is a relatively immediate action on the necessary structures that impact the venture capital industry. The favorable environment is a much softer variable. It collects mainly the long-term actions that try to slightly redirect the French society towards new patterns in order to move with the times... and even ahead. I must admit that overall my recommendations really meet with the general recommendations of the EVCA.

5.1.1 A Favored Venture Capital Industry

Keep the Good Work

As we previously noticed, the various measures that were taken so far seem to be exactly the good ones. The special legal status that was created offers a favorable tax status for the venture capitalists. In addition, the French government offers state-aids for venture capitalists on very risky operations, such as early stage investments. It has even created a system of guarantees against failure of investment through SOFARIS. lately there have been competitions designed to promote the creation of early stage venture capitalists ("fonds d'amorçageamorcage") and organizations that will go with the new ventures and support them along the way ("incubateurs").

Improving the Legal and Fiscal Status

Within these improvements of status, the different organizations, SOFARIS, ANVAR, AFIC, CDC, must play an important role in the decision-making process. The purpose of this should be a clients-oriented strategy. By representing venture capitalist or entrepreneurs, and by being in close contact with them, they are more likely to have a clearer idea of the necessary actions.

Creating Flexible Standard Status Foreign countries such as the UK or US do not grant our specific organizations all the advantages that we grant them in France. Similar advantages are granted in these countries for different legal status. This is mainly an issue for the UK and US which do not recognize the tax-transparency feature of our SCR, but instead use limited partnerships. This comes from the French will which adopted a status that usually is not tax-transparent, the corporation, and made it tax-transparent in order to enjoy its classical appeal among entrepreneurs while making a suitable vehicle for venture capitalist. This choice, however, is in opposition with any standards.

So far the different legal status seem to be created as separate and scattered bubbles. A system of larger common world-wide status containing our specific status without denying the characteristics of the common status would be better. Each time we go into one more inner status, there are additional constraints and additional advantages. Still, the possibility of returning to a looser status without cost remains should it become impossible to cope with the additional restraints.

Another possibility would be to homogenize the fiscal and regulatory status of venture capitalists over Europe, and agree to offer them the same tax advantages.

Creation of VCs Currently, one of the main problems in France is that there are not enough venture capitalists. because of this, supporting their existence is a strategy, though a better strategy would be to support their creation. Making the creation of funds easier would help. This could be accomplished through substantial state-aids for the fist capital-calls, as well as by developing a favorable environment where public agencies and public organizations collaborate by sending them customers.

Create Network

One of the main characteristics of the VCs is their role as go-between. As intermediary they have to develop a considerable network. It is a network within the same line of business, but also with technical experts, classical entrepreneurs, and investors. By artificially developing these networks, the French government can support the effectiveness of venture capitalist organizations. The network with the world of technology research should offer a perpetual interface

between high-quality researchers and venture capitalists. While researchers would make VCs aware of the evolution of technologies, VCs would make their technological advisers aware of innovation in their domain as well as the evolution of the industrial world's concerns. Likewise, it would be interesting to develop networks between VCs and other actors such as the potential entrepreneurs which are students, private and public research laboratories, and potential investors through specific events where they are all brought together.

An interesting example is the American SBA, which tries to develop all these networks through web-based applications and special events.

Expand Range of Potential Investors

There is a need for increasing investment in venture capital. There should be a motion to initiate pension funds in France, which are commonly huge investors in capital. Special care should be paid to allow them to invest in venture capital.

Tax-advantages for corporations or individuals that speculate with venture capital investments should also be encouraged.

A Better Communication

Overall, the communication of past programs was deficient. Current efforts should be aimed at correcting the past shortcomings in communication and advertising, while also emphasizing to the public the future programs and their results.

Communication of Current Structures and Opportunities Currently there is no real advertising of the legal and fiscal advantages that were created by the new venture capitalist structures. There has not been distribution of information, about the programs, and the solutions. This may be explained by a period of political insecurity where the first priority of the political powers became making a positive difference with the other party, and beyond common differentiation of ideas. This environment bred a risk-averse behavior in policy which, out of fear of facing an unfavorable public opinion, is more likely to be discrete about measures rather than to advertise them. Political powers need to leave this mindset behind. Showing the face of a strong political power that is not afraid to make decisions, and thereafter knows how to

correct them to meet people's expectations is the key to success. By not advertising a decision, they miss at least half of its consequences, if it had been advertised.

This advertising must be fast, available for questions, and demands a better osmosis between the administration, the population, and professional world. It also needs to avoid technical wording and complex sentence building. Communication is not a simple treatment of the data. Before being shaped for communication, the product is only half designed. This stage should be entrusted to experts. Because of this requirement, elitist solutions must be avoided. Only a solution that can be understood by everyone, and explained by everyone is acceptable.

One of the main requirement of effective communication is consistent data. Therefore, a consistent evaluation process, which requires a pre-design as well as a sustained effort for at least the period of the program is needed.

Scope and Timing

Dynamic Strategy The strategy for action must be dynamic. This means that we must monitor the evolution of our environment, and perpetually adjust our strategy with respect to the changes in the environment. Likewise, it is necessary to keep a better memory of the impacts of past policies. All of this requires that a better evaluation mechanism be built.

Among the concerns of adjusting dynamically is the necessity for the public authorities to limit their role as the reserve of the welfare state. This implies that additional public funds need to be invested to compensate industry during a downperiod. This must be readjusted during periods of growth.

As Margaret O'Shea [30, 1996] pointed out, there may be various disadvantages to public intervention. First of all, there is the classical risk of hindering the natural development of a private sector in venture capital by promoting public organizations. This is also why the program should watch public funds that are in competition with private actors like the CDC-Innovation fund. This critic implies also the question of the optimal time for the authorities to exit the program and the way of doing so. An important quality of foreign countries program is the perseverance in one specific program, and its progressive withdrawal when positive results showed up. In addition, if we create special advantages to attract and develop venture capital, we need to be able to withdraw them when they are no longer necessary. This cannot happen

overnight, but needs to be announced as for a limited period, that may be renewed. At that time the decision should by a committee of professionals. There are also doubts about the ability of government organizations to target high-potential young ventures as it should be done in the venture capitalist industry. This selection phenomenon seems indeed a little bit far from public authorities' concerns. The risk is that in order to be fully efficient, a venture capital should not have too much participation from public funds. They may require the venture capitalist to deviate from what would have been its normal strategy, in order to fulfill political concerns that do not have anything to do with the regular course of business.

European Policy, National Policy as well as Regional Policy The scope of action should not forget any actor. Each scope has its importance and its specific role to play. Therefore, the policy must be European, as well as national and regional.

5.1.2 Favorable Infrastructure

In developing a favorable Infrastructure we try to develop the industry upstream and downstream, as well as preparing its future.

Promotion of the Ventures For Using New Technologies

In order to develop innovation in technology we also need to develop its customers. For example, innovative use of web-based solutions must be favored, even if it do not consist of technological innovation itself. In our case we know that in order for a technical solution to be a viable source of profits, it needs to have numerous customers. It seems then that for one additional firm that develops new technological patents, there is at least 10 potential user firms. The adoption of new technology has a cost. Usually it is a risky enough operation that big corporations let smaller units try them. In a risk-averse tradition like the French one, it is very likely that our supported technological firms will be able to develop nice patents but that it would take a long time before the adoption of technology by industry. We can quote the examples of Amazon.com and Barnes&Nobles. Barnes&Nobles did not want to use the web-based selling opportunities. Even after Amazon.com appeared as a potential threat, Barnes&Nobles did not move. They finally adopted the technology, but only after having lost a substantial marketshare to Amazon.

If Amazon.com had not been there, it is very likely that still today, Barnes&Nobles would have stuck to its traditional way of selling books. The keen interest in web-based selling systems would have been delayed. Compare this to today's worship by thousands of sites that try to repeat the miracle Amazon.

Legal and Fiscal

If better legal and fiscal measures have a positive impact on venture capitalists they must also have the same effect on entrepreneurs and investors.

The main hurdle for young entrepreneurs today is that they are given the same treatment as big corporations. They are subject to similar regulations and similar controls even if there was an effort made to reduce the corporate tax yield for small structures. The restrictions are important like the requirement of having only private persons as shareholders exclude venture capitalist backed-up firms from the beneficiaries.

Public authorities need to have a clear policy towards young ventures. They need to deliver messages such as "at your side, not in your back" or "government has its hand in your hand, not in your wallet" without ambiguities. There must be a radical trend to lower the level of taxation for small businesses without thousands of requirements which only offer theoretical protection and never meet reality. A similar action must be undertaken for various regulations. A special status must be created for small-size businesses with less constraints on labor law. This must also lead to an easier creation process for new companies.

To summarize, the French state must move away from its traditional role as zealous law-enforcer, to play the role of a more helpful partner.

Communication

So far, in France there is no clear idea on how to create a company, or about what advantages exist for French entrepreneurs.

If incentives are created they need to be appropriately advertised. Changes, and why the changes were made, need to be explained. The starting success of certain measures must be leveraged by its spreading among the population. There must be advertising by cases of people that used the program, and interviews with satisfied customers. Once the program has been

started, it requires a sustained interest through monitoring its impacts and assessing its success for communication purposes.

Keep It Simple Leslie A. Jeng and Pilippe C. Wells [27, 1998] pointed out the cost of asymmetric information as a barrier for investment, and by consequence for innovation. The lack of simplicity plays an important role in information asymmetry. If accounting standards are too complex, there are difficulties for benchmarking the investment opportunities. This breeds distrust in the market from foreign investors, and therefore inefficiencies of the market. If the structures are too complex, it requires time to analyze the absolute value of investment opportunities, therefore artificially increasing costs.

Usually French administration creates numerous standards with dramatic numbers of limiting clauses. The main constraint is the legal system. The French code law requires a pre-defined complete legal architecture which handles most of the possible future problems in the written law. The main work is in the writing process of the law, rather than in the implementation process, which is the application of the law by the various courts. The initial goal, which is to limit uncertainties by foreseeing and specifying the judge's decision in all the possible cases, has indeed the opposite result. The French state increases uncertainties, because of a lack of communication, in order to differentiate the ultimate goal of the law, or the main characteristics of the new status from the details that are intended for judges.

Quite the opposite, the code law requires the French state to increase its communication effort, by spreading a clear presentation of the goals and new advantages. Besides, there should be unique local agencies as focal points to give information to population.

There are also other features of the past policy which added to the overall confusion of clients. One of them is that we do not clean past statutes which should be declared obsolete, instead of compounding new statutes every other year with very slight differences between them. In addition, the several and frequent changes in law are confusing, even for professionals that acknowledge the complexity and the obscure points that remain in the laws.

Information Technology Structure

Building IT Roads One of the most important roles of the French state is to "build roads not roadblocks". It should not attempt to dictate what is driven on these roads, just develop them. Roads are the technological paths that lead French people and French businesses to the 21^{st} century. Among them, the development of Internet is primary. The slow development of connections should be stimulated. This could be accomplished with subsidies for schools, including elementary schools offices to get connected. As we noticed with the development of cellular phones, the French market is very reactive, and not averse to technological progress. It just needs to be initiated.

Public authorities may have an important role by creating and promoting standards. Standards, for instance communication protocols, are usually better when they are defined by non-profit organizations. This task breaks down in an international role that consists of world-wide accepted standards. In telefony, today GSM is only a Europe-wide standard, and the US FCC does not tolerate it. A better understanding that the global promotion of standards is a state-responsibility would have avoid that kind of issues while we are currently thinking of global mobile phone systems. Likewise, the universities and public research centres have the reputation to develop the best standards. For example the universities of U.C. Berkeley and MIT are famous for their contribution to Internet. We should not forget that the principle of Internet has for baseline a network that was created inside of the French CEA. Facilitating the breakthrough of the best protocols, homogenizing the international efforts should be a task of the French government as well.

"Technopoles" Another important aspect of the American success is the favorable concentration of educational centers in technology and business, with the proximity of research centers, financing centers and corporations that seem to be the optimal mix for innovation and creation of new ventures. Working in collaboration with regions or cities that try to create a similar alloy should be encouraged and financially supported. France already has some technopoles such as Sophia-Antipolis, Meylan, Rennes-Atlante, Illkirch, and Nancy-Brabois but all of them are missing business schools and services in order to sell and use the various technologies that are developed.

Protection of Intellectual Property The protection of intellectual property is a large problem that should be observed by the French government. It can facilitate the release of a patent, by having a faster registering leadtime, and offering a higher protection through at least a unified protection for Europe, and a unified European enforcement effort. This way of thinking globally for Europe corresponds to the new given environment of the unified market.

In addition, there should be easier ways to defend patents and it should be more affordable to register in foreign countries. European or national aids for international patents, or at least for the enforcement of the patents should be available.

Liquid Financial Markets

In appearance the French stockmarkets are healthy, but they really cannot compare to overseas markets. Reducing the transaction fees, stock exchange orders, "droit de transactions", "ordre de bourse", may be reduced to make the investment market more attractive for small investors and foreign ones.

The PEA (Plan d'Epargne par Actions or Saving Account with Stocks) allows to invest till 600,000FF total in stocks. The purpose is to develop the French popular investment in the stock market.

Generally French stock markets suffer an insufficient marketing, and an underrated value among foreign people,or a too risky market for wealthy people.

The French stock markets are already penetrated by foreign investors. Instead of preventing foreign investors, France should give them incentives to invest more and more and to fund more and more French companies, for instance through low taxes for foreign investors.

Complexity of Equity-Related Procedures Another issue is the cost of entry with cost fees, and also all the costs that follows such as a fixed cost of 500FF for any contribution to a company's capital, and cumbersome procedures for capital modification, reduction of capital in particular. Reducing the complexity and cost of these practices would greatly encourage foreign and domestic investors to invest on the French stock markets.

Education

More applied research and academic A shift of our education towards a more pragmatic and applied education in the high technology area would favor the creation of technology ventures. For instance, a quick comparison between the number of laboratories in IT at MIT with any advanced technological university in France, such as Jussieu, demonstrate a real imbalance between French universities which create scientists and American universities which turn out engineers. When looking at PhD theses which lead to ventures in Information Technology, the number in the US is amazing, when compared to the insignificant number in France.

The fact that most American academic laboratories must find their own financing, leads them to more interaction with the industrial world. Thus the students are also exposed to industrial and professional projects.

In addition, most of the teachers have another job beside their tenure. Very often they consult for domestic or international governments or private corporations, or they open their own high-tech companies in areas such as transportation. Most of them become entrepreneurs. This allows more pragmatic teaching, and leads to students being better prepared for the real world.

As with teachers, most researchers and laboratory heads accumulate jobs as entrepreneurs as well as their laboratory positions.

Because of its high quality students, the French elitist system and its intensive competition should be conserved. On the other hand, it should be diversified between several, and especially more applied branches. This would avoid too short a range of backgrounds and move from training minds which think fast and accurately, towards minds which are at the head of one domain.

The Patent office at MIT helps teachers or students license their patents and funds them for it. In exchange they take a royalty of 10%, but take care of the costly enforcement. This is far from being an unfair deal for the researchers, and is also profitable for the Institute. This also is a way of avoiding certain worries and costs which researchers do not want to handle, allowing them to concentrate on their research.

Not To Forget the Business Side Of a Venture Extending privileges towards engineers is of common sense if we want to promote technological innovation, but one needs to understand that technical quality alone is not enough to make a successful venture. Of the best teams in the world, many are mixed ones. Both engineering and business skills are needed in a venture and we must associate business schools and their students to this challenge. This is necessary along with teaching business skills such as marketing, finance,accounting, and the legal responsibilities of entrepreneur...

This case study was mainly developed by Harvard Business School which offers a reputed American MBA. Ever since this educational method was adopted by numerous other famous MBAs, such as the one from the Sloan School of Management or the Stanford Graduate School of Business, it has met with striking success. In his book, *Year One,* Robert Reid describes his first year at HBS and gives his experience with the case-method [41, 1994].

By allowing the public research centers and university laboratories to obtain subcontracts from industry for research projects, the industrial world gets closer to academic world. Corporate research is often expensive for firms, and the industrial/academic alliance would be easy for international corporations which have already developed these reflexes through experience abroad. This is not true for small and mid-size ventures.

An Important Second Wave of Education for Professionals Training professionals has various advantages. It allows firms to keep up to date on current knowledge, and give their employees an education which the firm can not handle with its internal training. For employees, it allows them to take a new direction in their professional career or earn promotions. For Universities, it allows them to have students with experience and to reinforce their interaction with the industrial world. This means that after 3 to 10 years of study, professionals can go back to school for a short time to get an MBA, or MS, or PhD. Evening classes are also a good solution for professionals who pursue their academic training while maintaining a full-time job. Companies play a major role by funding this training, and encouraging their employees to take part.

5.1.3 Favorable Environment

Entrepreneurship

Developing Success Stories The purpose of success stories is double. On one hand it is to attract potential entrepreneurs to embrace this career path, rather than the more conventional corporate career. On the other hand it is about changing the badly prejudiced opinion of the population about entrepreneurs. Success stories need to make people dream, and at the same time think that they could be easily this successful entrepreneur. One of the classical ways of achieving this is by using successful entrepreneurs which may not have had terrific educations, and other counterexamples of commonly accepted prejudices, to fight the prejudice that corporate experience is required to start a business.

Sensitive To the Concerns Of Entrepreneurial World The purpose is to open the experience to future graduates. Usually they often know corporate people, and are very unaware of the realities of the entrepreneurship world. By offering classes in entrepreneurship they will be exposed to feedback from their peers and will benefit from their experience and past mistakes. Also, if internships are offered to students in small ventures, they will be able to experience the real everyday life of entrepreneurs.

Entrepreneurship centers in universities can bring important insights. They can be centers for information. They can also act as an interface between existing entrepreneurs in small businesses and the academic world. Entrepreneurs will then be able to enjoy the support of an elaborated workforce. Competition of business plans can unveil the appeal of entrepreneurship to students in the risk-free and comfortable environment of the university.

Financial Market Culture

As we change the French culture to a more stock-market oriented culture we must increase the confidence of the population and the domestic firms in it. In order to do this, a network of experts, along with a network of banks, which are able to analyze and screen out projects should be developed. In order to increase investor's confidence in it, We already have noticed that shareholder's as well as debtholders' rights were less protected in France than in the UK or Germany. Increasing the protection of shareholders should favor the market and increase

investors' confidence in it.

The number of companies quoted on the French stockmarket and the volumes they trade are also important aspects. France may want to increase liquidity of the markets. One possible way of doing this is by creating national pension funds which are authorized to invest in the markets.

The increasing involvement of financial intermediaries will contribute to market liquidity. The main targets are investment banking activities, especially the underwriting for IPOs, the market making that is ensuring an active efficient after-market, or still through research coverage of stocks which provide the information essential to investors.

Different means can lead to these goals. Some of these methods are: making reliable information widely available, promoting high standards for financial disclosure, teaching companies the best practices for dealing with bankers, analysts and investors, and finally encouragement for belonging to these new secondary markets by waving certain fees.

Being a Full Part of the Global World

Watching the World Observing the parallel evolutions and choices of the different countries is important. Today it seems that with the emphasis on IT in education, or with the opportunity of academic curriculums during professional life, France is moving away from the global trend.

In general France should always compare itself with other countries' results. This is not always completely sufficient, but it is a good benchmark with which to assess a situation or a public program. This is already done by international organizations. For instance, the OECD has published numerous comparisons between countries containing case studies of detailed public policy on specific problems. A good comparative evaluation on public policies about venture capital can be found in the archives of the OECD [1, 1996]. Another example is that the benchmark of the Nouveau Marché with the NASDAQ should be able to distinguish the improvements which are only due to favorable conditions, from those which are a real improvement of performance.

A mission of the French government is to listen to what happens abroad. It already has antennas all over the world with which to monitor the emergence of new technologies but instead of putting them in Washington D.C., they may be better located in the Silicon Valley.

A wider opening to the world would allow more important exchanges and better osmosis of our industry and business. Education in foreign universities should be encouraged and valued higher. Likewise, high-quality French institutes should welcome more foreigners.

5.2 Recommendations for Evaluation

The purpose of this section is not to initiate an extensive description and discussion of the various evaluations for public policy programs. Rather, the primary objective is to give a broad and brief overview of the whole area, its goals, its framework, and its various modes of realization.. The secondary objective is to direct the reader to more advanced works if he or she wants to improve their knowledge of a particular topic.

The recent research in social science called System Dynamics and the remarkable book from Sterman [51, 1998] point out the double necessity of evaluation. The first is a necessity to review its decisions that were based on forecasting that may not remain the same over time. The second is also a way of reviewing one's mental models of the system or mechanisms we are dealing with. With the mental models, the strategy or the decision rules may change as well. If this happens we can either adjust our decisions by keeping the same strategy and same virtual representation of the world, or we can update and deepen our understanding of the mechanism and of the solution.

Definition from Vendung's book [53, 1997]:

> *"Evaluation is a careful, retrospective assessment of merit, worth, and value of the administration output and outcome of government interventions, which is intended to play a role in future practical actions situations"*

It is an ex-post assessment, that consequently evaluates ongoing or finished programs. We can differentiate immediate, intermediate and ultimate outcomes. Evaluation is intended to play a role in future practical action situations.

Process of evaluation lies between control and feedback. *"Post hoc, ergo propter hoc fallacy"* is one of the main risks of bias of evaluation It be prepared as well before as thoroughly performed after.

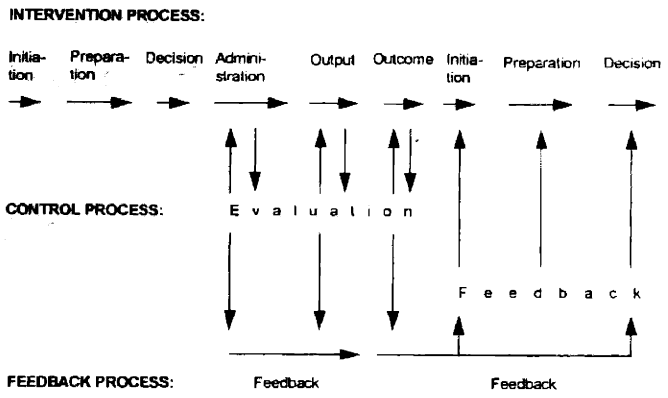

Figure 5-1: Evaluation In The General Governance Model (Source Vendung, 1997)

5.2.1 Learning the Process of Successful Evaluation

Evaluation is a careful assessment of a public program: its design, its implementation and its effectiveness. Evaluation requires then minimum standards of quality such as systematic data collection, and pre-design.

Chronology

There are different stages in every evaluative process (refer to figure 5-1).

Initiation: identification of the problem, solution of which supposedly demands public action.

Decision preparation: concerned with implementability of proposed measures and evaluability of results. Gathering and organizing of information on the alternatives courses of action: comparative cost and benefit analysis is made in the light of what is to be achieved. Then the feasibility of the options are evaluated: legality, reality within the current organizational frame. Typically is there enough people and available existing institutions to implement the options, and otherwise how much should be the additional cost of the implementation.

It also involves numerous actors and procedures. There are for instance presentations of past actions, review of proposed actions by stakeholders groups. There are a lot of conflicts involved, negotiations and trade-offs.

Decision: a formal, authoritative, legitimating resolution is made. (parliament, or govern-

ment or agency..)

Administration is when decisions are brought forward to their realization.. Administrative decisions are efforts to plan, design and make interventions ready for delivery to the targets.

Outputs are the means through which street-level operators and other agents in the administrative system attempts to influence intervention targets. They are the laws that have been issued, the funding that have been distributed, the taxes that have been collected.

Outcomes are what happens on the addressee side (client recipient). Outcomes are then thought to be effects of addressee actions.

A primary process is after-the-fact control. It comprises traditional auditing, simple monitoring and evaluation. It may be self-performed by the controlled administration.

Questions that evaluations can answer: what the outputs and outcomes look like, whether the outcomes are produced by the intervention, and whether there are more cost-efficient means to reach the same goal.

Besides there are also a metaevaluation, an evaluation of the evaluation. It is always possible to audit an evaluation and to readjust its process. The purpose is to increase methodological quality, readability, faithfulness to facts and other properties. A deeper work on that matter was written by Hoogerwerf [8, 1992].

Learning the Existing Practices in the Field of Evaluation

The choice of evaluation is closely related to the use which one has for it. This use may be very different depending on the management method we choose to adopt. Thus, the evaluation is very dependent of this choice as well.

Evaluation and radical rationalism: this is the oldest methods. It encountered a big success in the 1960s and the first half of 1970s. This trend argued that public programs should only be carried out if science has answered certain questions. (refer to table 5.1)

This leads to efficient and advances methods like decision trees, that can be applied to define ex-ante a dynamic policy mechanism in front of an uncertain environment. Richard de Neufville's book [12, 1990] is a good introduction to the various up-to-date methods that can be used to define criteria of merit and decision policy in complex environments.

Evaluation and Management by Objectives: the management by objectives contains three

1. What are the sought ends? What is the problem to be solved?
2. What are the alternative options?
3. What are the consequences of the different options and the probabilities of these consequences?
4. What are the costs and resource requirements of the various options?
5. How can the options be arranged with respect to costs and consequences, and which criteria of merit should be used in the choice of option?

Table 5.1: Table Radical Rationalism Source Vendung (1997)

main features: setting clear, measurable intervention objectives, participating in decision making at each and every level, and objective feedback of achieved results at all levels. Objectives are composed of a goal, a time limit, and resources. The management is supposed to set priorities between the various objectives. The top management should involve lower levels of management in the work of breaking down the organization-wide goals into subgoals for each organizational unit. Each unit and individual staff should develop plans for the accomplishment of intended results. When objectives are set up, everyone has some degree of freedom when choosing the process with which reach its goal. A system of performance review is set up to track progress with specific milestones. Evaluations are frequently reviewed and distributed to every level of hierarchy. This allows each level to compare its results with its objectives and to readjust its planning and process. Successful work towards goal accomplishment is awarded by salaries, merit pay, or promotion. Shortcomings or failures are punished. The exact opposite method would be process-oriented management.

Evaluation and Results-Oriented Management: Although this method does not establish precise goals, the manager indicates the general order of results he expects and makes it clear that these results will be disclosed and compared with the results of other units. Evaluations play a primary role in results-oriented management because they define the criteria of merits and suggest any changes in direction. This method also implies a continuous and systematic feedback regarding policy and program result to principals and agents. As in management by objectives, agents are given a relative freedom to attain their expected results.

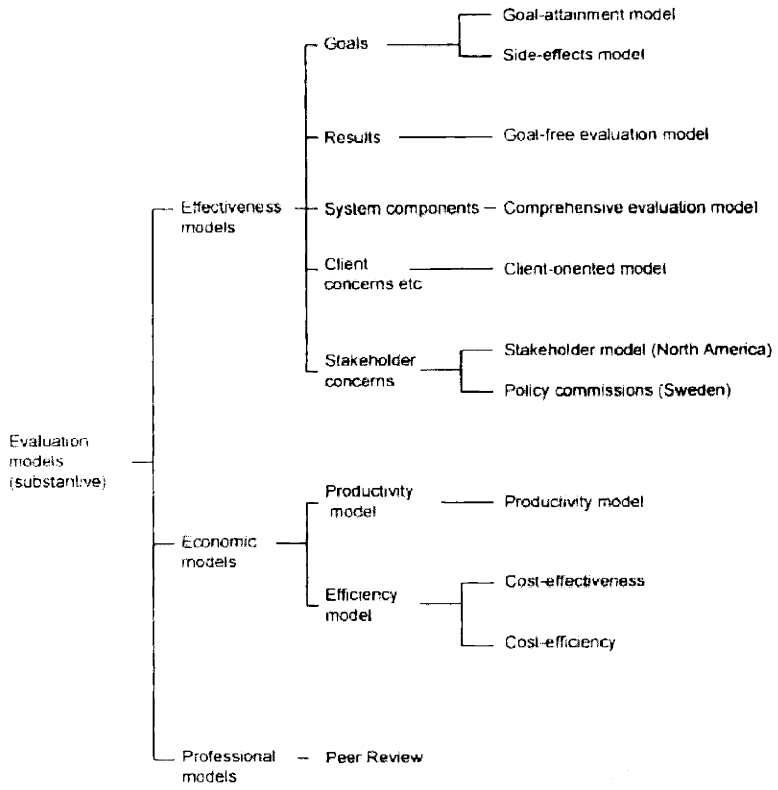

Figure 5-2: Taxonomy Of Models Of Evaluation (Source Vendung 1997)

Taxonomy of Evaluation Models

The best division of the evaluation models is the evaluation's organizer (refer to figure 5-2). We must distinguish between the various types of models One gathers the substantive models which focus on the substantive results of government interventions. The second one gathers the procedural models which check for legality, equity, representativeness and other features of the procedures with respect to the expectations of authorities. We will mainly focus on the substantive models, the most important ones being the effectiveness models, economic models, and professional models.

Effectiveness Models Effectiveness assessment focuses only on results and does not take costs into account. Effectiveness models contain the classic goal-attainment evaluation, side-

effects evaluation, goal-free evaluation, comprehensive evaluation, client-oriented evaluation, and stakeholder-concerns evaluation.

Goal-Attainment Evaluation: There are two main measurements that answered two separate questions. The first is the goal achievement measurement where the question to be answered is "Are the results in accordance with program goals?". The second one is the impact assessment in which the question is "Are the results produced by the program?" A good reference to investigate as to what extent the outcomes can be attributed to the program, is the article written by Lane in the European Journal of Political Research [26, 1987]. This model is also known in the literature as the "goal-achievement evaluation", "the rational model", the "objectives-oriented approach" and the "behavioral-oriented approach".

This evaluation model has the true advantage of its ease of implementation which matches the institutional constraint of usual policy-making. Indeed, decision-making proceedings are circumscribed by heavy procedural rules. These rules are the rules of the constitution, the rules of the parliament. Furthermore, the ultimate priorities for the decision-makers are to be reelected, and then influence broker groups which may set goals that are inconsistent with the general public interest or the financial situation. It also has the advantage of simplicity which makes it easy to understand and apply. On the other hand it can be criticized with its disregard for the democratic aspect and its likelihood of elitist bias. The second criticism concerns accountability. Old ex-ante goals may become obsolete during an ex-post evaluation. If this happens results cannot be applied towards the next decision making process. Another weakness is its disregard of cost. The inherent difficulty for public institutions to set up clear and consistent goals leads to deficient criteria of merit because of their haziness. The goals are usually either indeterminate by vague formulation or double-meaning wording, or there can be catalogs of goals having no priorities and containing inconsistencies by keeping together opposite objectives. These are mainly consequences of the trade-offs between the many public stakeholders, such as the different ministries and agencies. Overall, the method totally disregards any possible side-effects such as hidden agendas, looking at them as if in a black box.. In addition, the focus is only on the programs outcomes and not on the implementation process.

Side Effects Evaluation: This model proposes to look at potential side effects and more precisely perverse effects of the policy. Side effects can be classified according to different

standards. A perverse effect occurs when the effect is exactly contrary to the one expected. The French Maginot Line is a good example of a perverse effect. Tracking positive side effects is also useful to weight in favor of the decision. Changing later on to a new policy that does not have this positive side effect may imply the perverse effect of destroying this new asset. also, from a strategical view, it may be interesting to sell the program with all its positive effects.

There are five different questions that a side-effect program attempts to answer: "Did we achieve the intended results in the targeted areas? What happened in terms of the anticipated positive side effects? and what about the anticipated negative ones? Finally, did we encounter any unanticipated positive side effect? and any negative ones? To evaluate these policies we can look at every side effect under a different light: whether the effect is primary or secondary, whether it is immediate or mediated and whether it is permanent or transitory.

Goal-Free Evaluation: Instead of setting objectives, the evaluation is goal-free. By not influencing the evaluation through the expected results of the action, the evaluator can be more open to the total impact of the program. Stated or unstated goals have to be disregarded. The major task is to take a global view of the intervention and to concentrate on all its effects. In his book [49, Scriven (1991)], the creator of the method, Scriven suggested as evaluative criteria "*Merit is determined (...) by relating program effects to the relevant needs of the impacted population, rather than to the goals of the program. (...) It could equally be called 'needs-based evaluation' by contrast with goal-based (or manager-oriented) evaluation*".

With regards to weaknesses of this method, we can point out the difficult implementation of the evaluation of the needs of a population, as well as the omission of costs. For further information, the work of the author is a good basis to understand the whole method and its implementation, [46, 1973], [47, 1974], [48, 1980].

Comprehensive Evaluations: This model of evaluation takes into account not only the outcome, but also the planning and the implementation stages. The three phases of a process are called antecedent, transaction and outcome phases. The first one is the period of time before the program is adopted and implemented. The second is the period of time during which the program is implemented and the third is the period of time immediately following the delivery of the program during which most of the results data are collected. In each stage the evaluation deals with a description phase and a judgement phase. In the description phase, the evaluator

compares the intended achievements with the actual ones. The three fundamental questions in this description would be: Are antecedent events and conditions fulfilled as specified? Is the program carried out as intended? Do the actual impacts conform with those expected? The judgement aspect is composed of two concerns, criteria and judgements. Criteria deals with the benchmarks of the merit to be used such as comparisons with other programs or the setting of absolute standards. Judgment would be the process of comparing the intents, observations and criteria. A good reference on this method is the book from R.Kaufman and S. Thomas [24, 1980].

It is much more complete than the goal-attainments methods through its evaluation of implementation. However, evaluation practitioners have found it difficult to comprehend and implement. Besides this it is too simplistic and leaves out some obscure points.

Client-Oriented Evaluation: Unlike the previous programs, the client-oriented evaluation takes the satisfaction of the goals, expectations, concerns, and even needs of the program addressees as criteria of merit. The primary task is to evaluate this client population as well as their needs. The clients may be asked to give their assessment of certain parts of the program in that purpose. Client-oriented evaluation is based on the belief that public institutions produce goods and services for consumers. It uses the shadow controls design (see later) to evaluate a program. An interesting exhaustive reference on that topic would be the book from A. Gray, B. Jenkins and B. Segsworth [16, 1992].

However, even if this process brings interesting insights and new viewpoints, it cannot completely replace the other evaluation processes because customer-oriented public services remain in a hierarchical scheme forcing them to obey their superiors or the government.

The Stakeholder Approach: Close to the client-oriented model, this model is organized around the concerns of the people who have an interest in or are affected by the intervention. While the client-oriented model is concerned with one specific group of clients, this model takes all the stakeholders into account. Among the possible stakeholders for a public program, we can enumerate citizenry, decision-makers, political opposition, national agency managers, program directors, regional agency managers, private intermediaries, local agency, street-level bureaucrats, clients, neighboring agencies, program competitors, contextual stakeholders, and the research community. In addition, we can look at the possible stakeholders that are not

interested in the program itself, but rather its evaluation: evaluators, evaluation sponsors, and the evaluation community. The correct method contains interaction of the evaluators with the stakeholders. By listening to them, by asking them questions, she can screen out the new features that need to be added to the evaluation. It is normal to have disagreements between stakeholders. This is also why it seems better to do several smaller evaluations rather than a global one. Each evaluation can then answer a specific question, and its findings can be presented to the concerned stakeholding group. A good reference to learn more about this method is the book from Guba and Lincoln [19, 1981].

This method carries a lot of advantages. The first one is that this interaction with stakeholders provides the evaluator with a lot of additional knowledge: side-effects are anticipated much better, implementation barriers rise in advance... In addition this process considerably increases the scope of utilization for the evaluation. The constant involvement of the stakeholders exposes the study to an increased utilization and transmission. Its results are discussed, contested, or quoted as arguments in future debates instead of remaining hidden in drawers or only known by the hierarchy. Finally, the gradual building of objectives through interaction with the stakeholders allows one to start from scratch and design the goals throughout the process. On the other hand, it has several disadvantages. It has a disregard for costs, it is hard to implement, and very demanding on resources. In addition, one of the biggest concern is that it could lead to a pragmatic idea of truth. The truth can be mixed up, for instance, with acceptability of stakeholders, or usefulness. Therefore evaluators must be careful to remain objective and not political animals.

Economic Models Unlike Effectiveness models, economic models are not cost-blind. The basic variants of economic models are productivity evaluation and efficiency evaluation. They are both dangerous because decision-makers can be fascinated by their mathematical precision and apparent objectivity, and can believe that they provide complete and comprehensive answers.

Productivity Evaluation: Productivity maximization is the standard of good performance. Productivity is defined as the ratio of outputs to inputs. In that kind of evaluations, reference cases are needed in order to benchmark what low or high productivity means. A possible

reference to elaborate on this topic is the book from Wholey and Newcomer [55, 1989].

There are many technical advantages to this method. Among them are its ease of implementation and comprehension.. On the other hand, sometimes it is difficult to define what part of the cost is relevant to a particular activity. Likewise, some of the activities we wish to measure may not have explicit data available. Another default is that qualitative differences are overlooked in favor of quantitative data.

Efficiency Evaluation: There are two different approaches: the cost-benefit or the cost-effectiveness. As Rossi and Freedman defined it in their textbook [42, 1989]: "*In cost-benefit analyses, both program inputs and outcomes are measured in monetary terms; in cost-effectiveness analyses, inputs are estimated in monetary terms and outcomes in terms of actual impact*".

Though both methods allow one to answer new questions, they still keep a partial vision of the process and overlook other normal concerns for public programs. Among them are procedural fairness, representativeness...

Professional Models This last category focuses only indirectly on the subject matter, but rather on the actors who would perform the evaluation. The most famous professional model is the peer review, in which professionals from the venture capital industry evaluate venture capital public funding programs.

Peer Review: Professionals will gather in a collegium and be asked to evaluate a program with the quality and merit standards that are prevailing in this profession. Most of the time this is an interactive process between evaluators and evaluatees. There are different options in the selection of the peers: it may be agreed upon by the evaluatees or it may not need it. An example of international peer evaluation is the book from Ohman and Ohngren [39, 1991].

Among the numerous advantages there is the opportunity to have a public programmer evaluation from professionals. The broad range of positions in the public service may not lead to one becoming an expert in a specific area. For instance, in technically complex fields, peer evaluation is the finest method available. On the other hand, it is a long and tedious process with the inherent risks of having contrary opinions and no clear unique answer.

5.2.2 Use and Best Practices for Evaluation of Public Programs

This breakdown of the main concerns into an Eight Problems Approach to Evaluation comes from Vendung's book [53, 1997]. It gives us the main features for designing and performing a successful and influent evaluation program. I also took mainly ideas from the publications of the PUMA (Public Management) service in the OECD [37, 1999]. The following description will be of course schematic and brief, but the original texts are detailed and I advise you to consult them for additional information.

1. The purpose problem
2. The organization (evaluator) problem:
3. The intervention analysis problem:
4. The conversion problem:
5. The results problem:
6. The impact problem:
7. The criterion problem:
8. The utilization problem:

The Purpose

There are 3 main families of acknowledged goals that can motivate an evaluation: for either accountability, intervention improvement, or basic knowledge advancement. Besides these there are also several unacknowledged goals where evaluation has a strategic purpose for people which have hidden agendas.

The principal wants to hold his agents accountable: Then the purpose is to verify that the agents which have exercised delegated powers did so properly. This may be very important in cases where the government outsources its action, either in a state-owned or private enterprise. It could be legal accountability (Are relevant laws for new statutes being observed before distributing funds?), fiscal accountability (Are overhead funds to agents being properly

used and expenditures documented?), delivery accountability (Are the proper amounts being actually distributed to the supported organizations?), coverage accountability (Are the targeted beneficiaries actually benefiting from this program? and are they the only ones?), impact accountability (Is the program increasing the number of new ventures created as intended?) or efficiency accountability (What is the Return On Investment (ROI) of the program? What are its impacts versus its costs?).

Four accountability perspectives: first we have the need for accountability of the administrative system in front of the political representatives, and more specifically the parliament. Next, you have the accountability of the local politicians which are the last link of the chain. For example, if the regional councillors have somewhat loose instructions in order to be able to make the process more flexible and adapt to different situations, they must be held accountable for their actions by the administration. This evaluation can also be made in the citizens' perspective. Finally, there is the client perspective. They constitute a more limited category than citizens but are very interested in the program's success.

As we have just seen, one vicious aspect of accountability is that often the principal is also an agents towards another principal. Among the side effects we must consider is the risk of cowardly decisions because too much emphasis is placed on accountability.

Improving performance: This is the case when it is clear that the program will go on, but the evaluation is used to determine the different ways of improving it. The primary client is the personnel which are associated with the program. The iterative performance-evaluation-correction cycle emphasizes the speed rather than accuracy or publication as in accountability evaluation.

Basic Knowledge: It may compare a theory to the reality of the world. It may try to obtain a true image from a specific aspect of the market such as who are the people that are currently the most likely to become entrepreneurs in IT.

Strategic Purposes: This is the hidden aspect, but not the least. Based on game-theory, evaluations are ordered to gain time, to show up a front of rationality, or to make appear the apparent disorder of your political opponents. Edward Suchman ([7, 1967], [52, 1972]) gathered a list of abusive reasons for using evaluation. For instance "posture" uses the prestige of science to find credence with the public. "Postponement" is a way to put off action without looking

like it, or to tranquilize the public for no cost. "eye-wash" is a process where one distorts the results of evaluation for instance by omitting the annoying ones in order to support a weak solution. And there are much more.

Internal or External Evaluation?

First we need to distinguish between three different roles within an evaluation:

the producers: they are responsible for the performance in itself. They choose their methods, gather information, and summarize it.

the arrangers: they are the ones who decide to undertake and pay for the evaluation.

the users: they are the ones which need the information that will come out of the evaluation.

Each actor may be different. For instance, an evaluation on the high-quality of French technology ventures can be ordered by the French government to an external organization in order to be used by foreign stock markets and venture capitalists.

Here an evaluation is internal if it is produced by an internal actor, notwithstanding whether its user and arranger are internal or external. For instance, by external producers we mean public-investigatory commissions, government audit institutions, other government agencies, universities or similar advanced learning institutions, non-profit organizations, mass media, and consulting firms.

Of course it is always easier and less costly to undertake an internal evaluation. However, different purposes of evaluation imply different organizational structures for them. For accountability to outside parties, evaluations should be external in order to increase its credibility. However, outsourcing the evaluation does not safeguard impartiality. If professional evaluators seem too critical, they may soon file for bankruptcy. For improvement purposes internal evaluation is preferred. Internal evaluators know their subject better and are also motivated to improve their work-process and to have it known to management. For basic knowledge purposes, external producers are preferred because they are usually chosen because they possess a much higher knowledge of the topic than the arrangers or users.

Characterizing the Public Intervention

It is primarily to understand what the intervention is supposed to be. Every evaluation must contain a crude description of their evaluand in terms of policy instruments. This would be illuminating to commissioners and political users.

Evaluation as a Policy Instrument: As Vendung [53, 1997] makes us notice, there are really only three policy instruments that a government can use: the stick, the carrot and the sermon. They can either force us to do what they want, reward us (or charge us) for doing it, or preach to us that we should do it. The stick is called regulation, the carrot economic means ,and the sermon may be called information or "moral suasion". The first two need the last one. It is also noteworthy to see that they are in decreasing order with respect to the degree of constraints involved.

Regulatory instruments: Among regulations we can differentiate by decreasing degree of constraints: absolute prohibitions, prohibitions with exemptions, enabling legislation and obligations to notify. Permits, concessions, warrants, quotas, certificate, licenses or authorizations are forms of enabling legislations. Requiring a more accurate financial report is an obligation to notify.

Economic instruments: Among economic instruments we can dissociate monetary from non-monetary means. The government can provide supporting funds or it can provide free services or tax products to be redistributed afterwards. If both cases can be linked to an amount of money, they differ only from taking money, because they act on a very specific way of spending or making money. Otherwise, both families have the same structure with allowances and two forms of levies, taxes and fees.

Informative instruments: We can separate information on policy instruments from information as policy instruments.

Beside sorting them by the kind of policy instruments there are other ways of classifying programs that would allow them to benchmark and inspire each other. For instance, we can do this by sorting them with respect to their functional scope (agriculture policy, social policy) or to their degree of centralization.

Monitoring

Monitoring means tracking the different stages of implementation. There are five steps in the monitoring process:

1^{st} Step Reconstruction of the Intervention Theory: This is the step where the whole implementation chronology and process is designed with all the steps, and expected outcomes. Usually a pictorial representation is useful. This allows the gradual evolution and expected growth to be represented in theory. The purpose of this is not to be totally real, but rather to be used as a tool to point out the primary concerns for evaluation.

2^{nd} Step Selection of Monitoring Strategy: Using the sketch of the first step, the goal of this step is to figure out what are the prerequisites for the program to work. We select them with respect to their importance and the feasibility of their evaluation.

3^{rd} Step Data Collection, Data Analysis: Experts usually commend triangulation. Several sources and methods ought to be used. There are three broad categories for describing data gathering methods: Documentary methods, interrogative methods and observation methods. Documentary methods encompass any use of outside records, imported statistics, or text analysis, such as purchase contracts. Interrogative methods involve interviews and questionnaires. Observative methods occur when the evaluator makes visits to the sites, either openly or secretly. These three methods go from the least likely to produce a reaction from the evaluand to the most likely.

4^{th} Step Applying Criteria and Standards: The choice of criteria or standard for worth should be linked to the expected goals. There are two ways of printing the score. In global scoring, a single value is associated with the whole program. In analytical scoring, values are allocated to the component parts only. The criteria may be enriched by additional and more current insights from the performers and addressees.

5^{th} Step General Thoughts on the Governance System:The same program may have a totally different implementation from a general government perspective. For instance, it may be the professionals in the industry that perform the political program through a global agreement. This happens often when the market is an oligopoly with strong corporations and strong influence brokers. This is called government by proxy. Usually it requires implementation through corporatist arrangements. There are several negotiations between the government and

the corporations to design the policy. This is more and more often the case.

Pre-Evaluation

In order to successfully complete the impact assessment, some approach to evaluation is needed. Pre-evaluation is an early inexpensive peek at an ongoing intervention to determine whether it is in shape for a full-scale, science-like evaluation. For Wholey [54, 1983] the purpose is not only assessing the evaluability of the program but also whether the program is ready to be managed for results and not only monitored.

The pre-evaluation process involves two stages: the program analysis and the feasibility analysis.

Program Analysis: There are four steps to this stage: 1) preparing a program documents model: this should include a sketch the program summarizing how its components will lead to the goals. 2) Determining key peoples' perceptions of the program: in order to figure out the different stakeholders models and frames. This is done mainly through interviews with the stakeholders and main actors. 3) Scouting the program: Through limited time spent in interviews and visits, it is an attempt to have a gross idea of the program actual functioning.. 4) Developing an evaluable program model: The purpose of which is to draw a credible flowchart of the actual program, with clearly defined goals and evaluable program components.

Feasibility Analysis: This contains two steps: 1) Identifying evaluation users: the purpose of which is to find the primary users and to define their actual needs for information: what should be the focus, scope and nature of the study? 2) Achieving agreement to proceed: This steps entails the necessary agreement about the design of the evaluation (priorities in program components), the commitment of required resources (monetary or cooperation), a plan on the utilization of the evaluation, a plan for improving feasibility of the evaluation of certain intervention components.

Evaluability Assessment to create Evaluable Programs: a major role of pre-evaluation is to emphasize that some components are not currently amenable. It allows for modifying the program before the one-time evaluation. This evaluation strategy may alienate the program and accommodate it to suit the strict demand of evaluation research is called a nonnaturalistic strategy. The naturalistic strategies study programs without intending to modify them. By

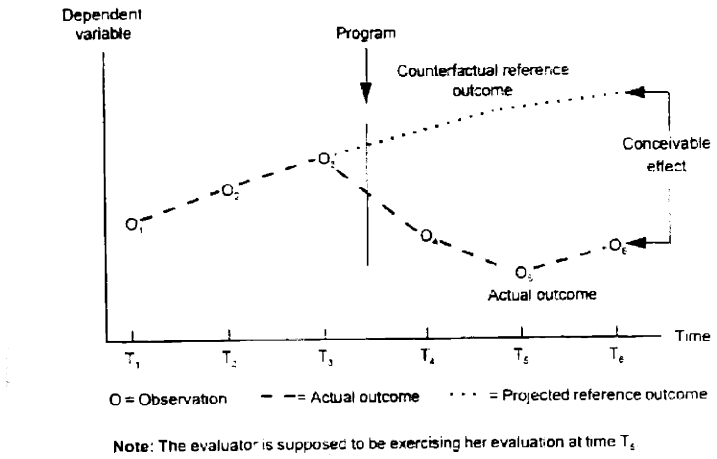

Figure 5-3: The Impact Problem In Counterfactual Terms (Source: Vendung 1997)

this, it is not the improvement of the evaluation that must be found, but rather the benefits to the programs that could come from a better evaluation.

Impact Assessment as Tryout and Social Experimentation

Through Experiments The problem is to separate programmatic from nonprogrammatic effects. The assumed modus operandi of causal analysis is also called the counterfactual mode. It stipulates that the actual outcomes of the process are compared with a reference alternative or the extrapolated outcomes that would have happened without the program. Assuming all other factors identical, it attributes the difference to the new program benefit. It is not very satisfying because it assumes that all other variables remain constant over time. Because of this weakness, all kinds of bias appear: either all the positive aspects are credited to the program or a failure is explained by the intervention of an outside event. (refer to figure 5-3)

The following are technics that try to respond to the epistemology of causality.

Randomized Controls: The Classic Experiment: There are two original groups that are chosen randomly to be equivalent, the control group C or witness group and the experimental group E. Only E would undergo the program. This is possible because many public programs happen to be pilot programs first. We do pre and post program measurements in both groups O^E_{pre}, and O^E_{post} as well as O^C_{pre}, and O^C_{post}. Then we credit the program with the difference

$\left(O^E_{post} - O^E_{pre}\right) - \left(O^C_{post} - O^C_{pre}\right)$.

The Hawthorne Effect and some solutions : A denounced phenomenon in social science is that when are aware of being part of an experiment, they modify their behaviors. It has many names among which we have the Hawthorne Effect, the guinea pig effect, or the reactive measurement effect...

One solution is secrecy. People are not told that they are in the experiment. A second solution is the administration of a placebo. The control group seems to have a similar treatment but this is only in appearance. The third solution is the so-called Solomon Four-Group Design with two pairs of experimental-control groups. It is then possible to measure Hawthorne effects as in Nachmias [32, 1979]. The main idea is that by not taking premeasurements but only postmeasurement in the alternate groups we are able to affranchise them from the Hawthorne effects. The fourth method is the Post-Program-Only Control. It takes only postmeasurements in both groups and subtracts them to obtain the program effect.

It is important to point out, that it is unlikely to find two random groups of studies in program policy. This is why we have to look for alternate evaluation methods.

Matched Controls: Quasi Experiments: In experiments samples are selected randomly, whereas in quasi-experiments they are chosen through intelligent matchmaking. The purpose is to first identify the significant intervention fields or what may be the primary factors that may affect the specific tracked behavior. For example, when it comes to investment of venture capital organizations this could be: their size, the economical dynamic of their geographical location, or their legal status. Aware of these factors, we build two matching groups that are equivalent with respect to all these predefined features. However, only one would be exposed to the program. There are two ways of using that method, either by forming the groups before the program, or the Ex-Post-Facto Design, of selecting them after the program.

Among the classical matched control evaluations, we have the control series design, where observations are time series on two matched groups (an experimental group and a control group) before and after the program. One of its simplest version, the pretest-posttest comparison, involves only one premeasurement and one postmeasurement.

There are threats to internal validity of this designs. Among the most important is the fact that some significant factors for the causality explanation may have been omitted in the

original design. The two groups are not equivalent. However, by collecting data separately, the evaluator should be able to correct this bias.

It is interesting to wonder whether it is credible to promote experimental designs of evaluation for public programs. Although they are praised by social scientists, they imply several defaults that make them either non-applicable to public programs or not their primary source of evaluation. On one hand, they usually require a long time for every step, either for the data-collecting stage or for their analysis.Policy decision-making cannot always cope with this constraint. On the other hand it offers a very narrow knowledge compared to the cost. Besides this, the validity of its results are difficult to assure on a science-like point of view because it is hard to extrapolate the behavior of a sample compared to the whole.

Without Experiments An alternate way of answering questions is the use of weaker designs. These are more pragmatic and more tied to political realities. They are naturalistic, focussing on programs, rather than requiring its adjustment.

Generic Controls: The generic control assume a partial coverage of the program. Restricting the scope to only part of the nation is indeed the usual intervention mode of public authorities. This method compares the experimental sample to a larger group or class, to which this sample belongs. Thus, if the program aims at regional venture capitalists in Provence, the venture capitalists in the South of France or all around France can be used as the larger reference population.

Statistical Controls: Unlike generic controls, statistic controls can apply to full-coverage programs as well. This method partitions the group into subgroups that differ from each other with respect to significant variables of the problem. For instance, let us assume that we are looking at a program to increase the volume of new venture-capital-backed investments, and that we want to verify that the incentives were not the same depending on the size of the venture capitalist. We can split the population into two categories, small and large venture capitalists, and demonstrate different impacts. We can also track further the different weights of the significant characteristics of our population that modulate the impact of our program.

Reflexive Controls: In reflexive controls there is only one group, and it is covered by the program. The impact of the program is the difference between the postprogram measurements

and the preprogram measurements which are taken as control values. The justification is that sometimes it is relevant to estimate that targets would have remained the same over time if there would have been no program. Among the most classical use of this method is the Interrupted Time-Series and the One-Group-Before-and-After Design. In the Interrupted Time-Series design there are several measurements as a time-series, but it is interrupted during the execution of the program. The impact is assessed by assuming the same trend as the preprogram time-series for the imaginary control group against which the sample will be compared. The One-Group-Before-and-After Design is a particular case of the Interrupted Time-Series design which takes only one measurement before and after the program. The main weakness of this design is that it does not take into account the occurrence of an extraneous cause that can have a significant impact on the sample. For instance, in the case of venture capitals, a panic on the Stock Exchange may totally bias the results of these methods.

Shadow controls: In the shadow controls design the net impact is evaluated by people with special insights and a certain bias. We can mainly sort the evaluations into three necessary categories, the experts assessments, the program-administrator judgments (the street-level agents for the program) and the clients' judgements. Often these three groups are asked to assess what would have happened if the program did not happen. (refer to table 5.2)

Shadow Controls may seem very far from the previous science-like methods but it is often the only available method and its results always bring interesting insights to the evaluation.

Process Evaluation and Implementation Theory

Keeping a flexible process is primary. It may happen that in the middle of the evaluation results, some interviewer may point to the evaluator as a specific side effect that you omitted. He is to include this in his evaluation as well. A flexible design would then be to work with a time sequencing of your interviews, or of your mailings. Likewise, if during an analysis you find that some particular unit of analysis is more interesting, you will add additional evaluations to this unit.

There are many contingencies that may influence the outcomes of a public program. Here is an exhaustive attempt to summarize the main categories. (refer to table 5.3)

1)	Administrative records. Information should cover such topics as a) size of program b) type of participants recruited c) attrition experiences with participants d) post-program experiences with participants e) program cost per participants who completes program f) participant changes relevant to program goals, assessed by before-and-after measures
2)	Direct observations of program operations: Programs that call for active work with participants (for example, household visits, classroom sessions, media presentations) should be directly observed by the visiting experts.
3)	Interviews with participants. Informal interviews with participants and former participants can take up such issues as: a) recruitment of participants b) motivation of participants c) participant satisfaction with program d) participant progress towards attaining program goals e) what would have happened had there been no program
4)	Interviews with relevant context: Informal interviews with local officials, administrators of competing programs, administrators of important local institutions, and local powerful individuals or representatives of local powerful institutions (for example, political officials) should cover the following topics: a) worth of program b) extent to which program is viewed as help or threat to community c) interest in continuing program when demonstration period is over

Table 5.2: Shadow Controls: Data Sources and Appropriate Questions: extracted from Public Policy and Program Evaluation by Vedung, 1997

A	Historical Background of Intervention
	1. Direction of proposed change (may have been misunderstood by public or officials)
	2. Political support (the program may have been forced into a political conflict)
	3. Size of proposed change (the greater, the more difficult)
	4. Level of attention (the less attention from its proponents, the harder)
	5. Symbolic politics (strategic goals, political hidden agenda, the symbolic of the policy is usually perceived by officials and actors)
	6. Participation of affected interests (intermediaries, local authorities and clients)
B	Intervention Design
	1. Clarity (linguistic obscurity[1](determinded wording or unclear priorities) or several available options for action may confuse)
	2. Technical complexity (the more complex, the more difficult)
	3. Validity of intervention theory[2]
C	Implementation
	1. National agencies: comprehension of the program, capability (finance, labor, equipment), willingness (public choice however agents follow personal interests, mismatch or disagreement from officials, capture[3])
	2. Formal intermediaries (NGOs, medias may enhance the legitimacy of policy, but also may divert its intervention)
	3. Street-level bureaucracy[4][28, Lipsky, 1980]: coping strategies with shortage of resources (reduced availibility of services), capture [22, Hemenway, 1985], mismatch (disagreement)
	4. Addressee Participation (occasional cases where addressees participate in intervention implementation: comprehension, capability, willingness)
D	Addressee Response
	1. Comprehension, capability, willingness
	2. Formative moments (it is more efficient to demand to change investment before the decision was made than to reverse gear)
	3. Zealots (particular individuals that commit unexpectedly to the case may change program outcomes)
	4. Camouflage (attempts to circumvent requirements by hidding from inspectors make it harder to implement)
	5. Resistance (massive disobedience may invalid the policy), free-riders (unwanted beneficiaries of a program)
E	Other Government Interventions, Other Government Agencies (parallel programs or parallel institutions can have crossing actions on our program)
F	Issue Networks and Other Environments
	1. Support of sovereigns after formal instigation of mandate (sovereign may not last as long as the program)
	2. Support of other actors external to formal administration (networks of association may distribute information)
	3. Mass media
	4. Changes in the target area: the target may evolve and make inefficient the original policy

Table 5.3: Explanatory Factors in Process Evaluation (inspired from Vendung)

	Descriptive criteria of merit
1	Goal attainment
	For global conventions, national policy, agencies, and municipal policy goals
2	Client concerns, expectations, and conceptions of quality
3	Professional conceptions of merit
4	Citizens' expectations and values
5	Merit criteria of diverse stakeholding audiences
6	Goal-free evaluation (no prepost goal value)
	Prescriptive criteria of merit
1	Contribution to problem-solving (requires an accurate problem description)
2	Client needs (different from clients expectations. The definition of needs should be a political task)
3	Equal distribution
4	Public interest

Table 5.4: Criteria of Merits for Effectiveness Evaluation from Vendung (1997)

Merit Criteria and Performance Standards

It is primary to assess the degree of success or failure of a program and not only the quantitative side of its results. According to Shadish, Cook and Leviton [50, 1991], we should distinguish between descriptive and prescriptive valuing. Descriptive valuing is a benchmark with values from other programs. In prescriptive valuing, the evaluator subjectively "advocates the primacy of certain values". Descriptive values leave more space for pluralism and are more widely adopted. Descriptive values allow the evaluator to deliver a message. (refer to table 5.4)

Productivity: productivity is usually an interesting merit criteria, because it is relatively easy to evaluate, and therefore several benchmarks are available. However, it shrinks the comparative frame by being too restrictive. If taken alone, it may breed wrong public decisions. The previously-defined criteria of efficiency may be more appropriate.

Points of reference: Yehezkel Dror in his book [13, 1968] provided a very exhaustive listing

[1]There are different motives for Public Policy Obscurity, everyone to be avoided. a. Obscurity to conceal discord (disunity) b. Obscurity to conceal accord (unity) c. Obscurity to conceal Inopportune motivations d. Obscurity due to lack of time and knowledge

[2]The intervention theory is the causal chain that links the program intervention to the intended utimate outcomes.

[3]The regulatory capture theory would be that the agency would be tempted to act in a favorable way to its own clients, rather than to the program's clients.

[4]Street-level bureaucrats are public service workers who interact directly with citizens in the course of their job. Typically they are teachers, police officers, social workers, judges, public lawyers, any kind of inspectors.

1	Historical data
2	Intranational comparison (with neighbooring regions, or with institutions in similar business/service)
3	International comparison (OECD is a big provider of these standards)
4	Benchmark (with best empirical practice)
5	Goals
6	Client expectations
7	Stakeholder demands
8	Professional standards (with professionaly accepted, provided by professional associations)
9	Minimum (with level that enables the minimum impact)
10	Optimum (with results that come from an optimal model)

Table 5.5: Attempt to List the Common Value Standards that are used in Policy-Making Evaluation Source Vendung (1997)

of all the common value standards used in public policy to benchmark programs. (refer to table 5.5)

Uses and Utility of Evaluation

There is no choice but to notice that evaluations face a certain disappointment in the opinion of officials. It is mainly because of too high expectations, and a misunderstanding of its potential. We will differentiate five types of utilization. Three are positive uses of evaluation: instrumental, conceptual, and interactive. The last are negative uses: legitimizing and tactical.

The instrument is the classical use where evaluation findings are used as means to reach a goal. Evaluation can also have a conceptual use when it is part of a communication process.

McGuire [31, 1989] gives the following steps in its Communication/Persuasion Model. In order for the communication or the message to be effective the public must go through the following steps. (refer to table 5.6)

Evaluation can also be used by politicians in an interactive way. It would be only one of the supports for the decision-making process, in competition with stakeholders, clients, advisers, journalists, intellectual circles... It would then have to dialog.

In legitimizing use, evaluation is utilized to strengthen or weaken a political position. Often the results are taken away from the global evaluative frame. Their meaning is diverted from their original sense. Usually the best way for the political opponents to undermine the argument

Step 1	Exposure to communication
Step 2	Attending to it
Step 3	Liking, becoming interested in it
Step 4	Comprehending it (learning what)
Step 5	Skill acquisition (learning how)
Step 6	Yielding to it (attitude change)
Step 7	Memory storage of content and/or agreement
Step 8	Information search and retrieval
Step 9	Deciding on basis of retrieval
Step 10	Behaving in accord with decision
Step 11	Reinforcement of desired acts (authority's support for so behaving)
Step 12	Post-behavioral consolidating (prozelytizing others,..)

Table 5.6: Response Steps in Communication Process (Source W.J. McGuire, 1989))

is to invalidate the evaluation process.

Likewise in tactical utilization, evaluation is misused to gain time or avoid responsibility. In both cases the merest fact that there is a misappropriation of evaluation should be enough to distrust any kind of results.

Strategies for Enhancing Utilization of Evaluation: they are defined in table 5.7.

5.2.3 Evaluation of the French Policy

The French "Tableau de Bord de l'Innovation"

By April 15^{th} the French Ministry of Finances had developed a good program for evaluation. It is called "le tableau de bord de l'innovation" or Innovation's control panel [38, 04/1999]. It is composed of 18 indicators that monitor new capital, new entrepreneurs, jobs creation, new technologies, and new usages (refer to table 5.8).

This program is a good step with respect to our recommendations for evaluation. It involves tracking indicators of the adoption of technologies by society. It is also tracking the direct impact of specific programs, such as the authorization for life insurance companies to invest in stocks and private equities, or the impact of the creation of the Nouveau Marché. It has a promising future if it remains consistent on a longer period of time and has real interaction with regards to the choice of indicators. It has already been said that the evaluation frequency, expected to

1	Diffusion-centered strategies
	a. Reporting method: streamlining and broadcasting evaluation outputs through systematic effective reports. Improvement of the form of the message.
	b. Linkage method: it aims at opening sustainable diffusion channels to access the target recipients. (advisory commissions, involvement of leaders, hiring of communication expert for this group
2	Production-focused Strategy
	a. Flexible evaluation design through different stages fo program development
	b. Responsiveness to stakeholders worries, and increased involvement of them
	c. Feasible goals, monitoring of variables where program can be realistically effective
3	User-oriented strategy
4	Metaevaluation (synthesis analysis)
	a. Evaluation of another evaluation
	b. Summarizing and synthetizing of several evaluations
	c. Evaluation of the general evaluation function

Table 5.7: Strategies to Enhance Utilization of Evaluation Source: Vendung

be four times a year, would only be once a year for certain indicators.

However, certain pieces of information are missing. Their absence reveals a defficiency in the program. First, there is no monitoring of education tracks. A similar defficincy is that there is no tracking of the adoption of technologies by businesses, only by private individuals. Likewise, the evaluation is centered on France with very little benchmarking with other countries. We can also notice that there is no specific unique plan, but rather a will to improve the situation from all sides at once. There is no forecasted causal plan such as the one we have introduced in our evaluation process. They identify numerous factors that can impact evaluation, and the plan is to improve all of them.

Another defficiency is that each indicator is provided by a specific evaluation organization such as INSEE, ART, COB, AFIC, DiGITIP,or ANVAR... These indicators are like a summary of general problems. Each organization has information available that would interest greatly entrepreneurs, financial analysts, venture capitals, and national and foreign investors. For instance, the 18 indicators do not specify in an accurate manner which sector of IT is the most likely to grow. However, the evaluative organizations are very elaborated and powerful. They

I	**New Capitals**
	1 Funds that are taken up on the Nouveau Marché
	2 Amounts invested in venture capital
	3 Amounts invested in private equities
	4 Amounts invested in private equities by life insurance contracts in stocks
	5 Number of FCPR
II	**Entrepreneurs and Job Creation**
	6 Number of new businesses in IT sectors
	7 Number of companies listed on the Nouveau Marché
	8 Number of early-stage funds
	9 Number of specialized venture capital funds with a size over 15m Euro
	10 Growth in number of employees in IT firms
III	**New Technologies**
	11 National, European or International patents by French firms
	12 Breakdown of national patents by technological sector
	13 Revenues of IT-related sectors
IV	**New Usages**
	14 Number of Internet-users in France
	15 Number of computers hosts connected to Internet
	16 Number of subscription to mobile phones
	17 Number of Personal Computers Sales
	18 Number of households with computers

Table 5.8: Indicators of the Innovation Control Panel Program (Source French Ministry of Finances)

have the information, but they do not pass enough of it on to their customers. Most of the time, these state-owned organizations keep their investigations and predictions for state-use only. Information is available, but it is not customized for customers. It is not sent to them, they must search for it. Second, the presentation seldom meets their needs. A big improvement would be centralizing the distribution of IT information in a single agency which would be in charge of communicating with entrepreneurs, investors, ...

Additional Tracks for Assessing Innovation

There are always specific problems when evaluating innovation. The French evaluation program looks at the French firms applications for patents. Paul Gompers and Josh Lerner[40, 1998] address the different concerns with the causality and availability of measurements when looking for relating venture capital and innovation. They look not only at new patents, but also at the number of citations of patents, which is a mark of the importance of a patent. If it is disputed, it usually means it is more valuable.

They also locate issues such as bias in the evaluation criteria. For instance, there may have been a third unobserved variable representing the arrival of innovative activities which the program cannot be credited for. VC or the public program may spur an increase in patenting activity (innovation measured with the volume of patents) but there may be no relationships between them and innovation. Firms may be pushed to patent more because they seek to impress potential investors or look to become eligible for tax-reductions or financial aid.

Other interesting pieces of work to evaluate innovation: W.M Cohen through his work is one of the main initiators of innovation assessment ([10, 1995] and [57, 1989]).

5.3 Recommended Implementation

"sine ira et studio" "with neither anger no partiality"

In this maxim, Tacitus describes the expected implementation features of public policies. Two requirements appear: the French government needs to make venture capital develop on the territory while at the same time verifying that people do not avoid policies, and must make its solution acceptable to the French people and the

political institutions. In order to do this, our recommendation has to face various groups of stakeholders. The French are a very sensitive population, that can praise a program and make it a success or loathe it and make it fail, depending on the treatment of the media. Besides this, there is a tradition of little communication from the political forces. Political leaders are usually experts, highly educated bright people, rather than charismatic speakers. This is also due to the fact that charisma is usually not well accepted by French people, who usually prefer a humble profile. Consequently, communicative lobbies are very influent. For instance, in spite of a relatively low enrollment, trade-unions are very powerful and take positions on any subjects. Because of an insufficient communication from public forces about their actions, decisions may be misunderstood by the population.

French people are usually highly-prejudiced against "capitalisme sauvage" or pure capitalism without state intervention. However, if there are political issues where the welfare state is a suitable solution, France tries to make people commit and take risks in the innovation problem. There is no successful examples where State intervention did not try to base its intervention on the laws of market. This is why we need to overcome French aversion of profit opportunities for risk-taking entrepreneurs. There is still a danger of creating new social inequalities in a country where equality is the primary command.

One of the goals of the implementation design deals with the of timing the process. One of its challenges is how to prioritize actions.

We will assume that the objectives of this implementation program are an increasing volume of investments from VCs in French venture, an increasing number of French IT ventures created, and an improved assessment in the public opinion of the public policy and its actors

5.3.1 Priority One: A Better Communication

Communication to the Country

The main improvement in communication with the country is to show the French people the positive aspects of this policy. This means a clearer presentation of its goals, through a first layer nation-wide communication using various media sources, television, radio, newspaper.

On a second layer there must be a more complete interactive communication with the main stakeholders.

The best vehicle for communication would be an independent agency for communication. This agency would specialize in the communication skills, such as a marketing division in a corporation. It would make better use of the medias, but also have a customized use with respect to the target. This could be accomplished through the use of associations, specialized publications, or seminars and conferences. Web sites, meetings, and the testimony of entrepreneurship associations could be used to promote entrepreneurship. Explanations could be through cases, which individuals or organizations can identify with. The single focal point of collecting information from every minister on a specific program and making it available to the population is a major advantage.

So far communication has been held by the political powers and only ministers or the president could use it. Communication is more important and broader than debates or oral announcements. Communication involves any steps in the distribution of information, from the design of the form, to the monitoring of the impacts, and the supporting operations.

More Communication to the Outside

There is also a need for another agency whose mission would be to advertise French special incentives for foreign investments in France, and to spread the good results and goodwill of French people and authorities.

This agency should be in constant contact with the outside world. It should be responsible for benchmarking French results with the world, and informing French population as to how the world is evolving.

5.3.2 Priority Two: Building the Baseline

Educating the Population Towards Entrepreneurship

Inspire Bravery Through various programs, France needs to inspire bravery in French people. Through case studies it needs to give them a more pragmatic education which is ready to take over a business upon graduating.

Rewarding With Higher Profits There are two kinds of possible benefits for entrepreneurs in France: one is higher expected profits, and the second one is glory. By using entrepreneurs as models, the French government may be able to motivate entrepreneurial careers among the population.

Build Infrastructures to Favor the Development of IT

The two main actions consist of developing necessary infrastructures, and avoiding any hurdles to the development of technology.

Promoting Necessary Structures The development of the Internet requires an increase in computer use, especially within the academic world. To give a comparison, every American student knows how to type and to use a computer after high-school mainly because homework is required to be typed. Even if it is not the purpose in itself, it gives the clear demonstration of a higher rate of exposure to computers. It also implies that every high-school student is likely to have a computer at home. This is far from being the case in France.

Likewise, it is important that France increases the social value attributed to IT jobs, and therefore IT studies. So far the number of engineering schools, or university departments that are specialized in IT sectors is very unbalanced when compared other countries. Initiatives, besides the Telecom schools, such as the creation of the group of schools ISEN, ISEP, ISEB or the EPITA that offer strong background and advanced degrees in IT should be encouraged. The low assessment of electronic fields is of great concern if France wants to remain competitive in the technological sector of IT. Creating continuous training in IT, through classes dispensed to professionals, should be an important asset in upgrading the technological level of the country. In this area, the effort of the CNAM is to be emphasized and continued.

By developing standards and competition, the French government can promote IT in France and throughout the world.

Easier Access to Technology Various measures could increase public access to technology. The time-billing and phone cost create a hurdle for extensive use of Internet. A monthly fixed cost would allow much more freedom for Internet users. Likewise, the similar billing model used by ISP (Internet Service Provider) in France is also a deterrent for intensive use. Other

services should be further developed to reach the level of other countries. For example, on-line payment by credit card is readily available in the U.S..

Many IT businesses develop due to a higher level of available services. For instance, the availability of cheap express delivery services like FedEx, or UHL is a necessary partner for the on-line purchase of goods.

It would take time to educate businesses and the population to these new consumption behaviors, such as on-line purchasing, or the opportunity to return unsatisfactory products. In other countries, the change was not as radical as it has been in France, because these habits existed before through phone purchases and home shopping. The French government can help the country to pass these steps by monitoring the legal environment of these new transactions, and playing the role of mediator between the involved parties.

Remove Legatory Barriers It is also necessary to remove legal barriers, such as the limit for cryptology that was imposed by the Department of the Interior. This cap on the complexity of the keys prohibited the creation of numerous web-based services. Even if this difference with other countries is corrected, we cannot compare to them.

In the future, the French legatory institutions should pay more attention to the consequences French laws have on the changing business environment when compared to other countries.

5.3.3 Priority Three: A Better Monitoring of the Programs

Control of the Biased Consequences

As in any public program, in order to avoid unexpected biased consequences, there is a control function of the state. For instance, there should be control of the pension funds invested in VC through a public agency. This could be done in a similar way as life-insurance firms are controlled insuring that this risk-taking activity does not cause harm to subscribers.

There should also be checks to be sure that the firms which enjoy the tax-advantages of our status are actual venture capitals and not disguised investment firms.

Welfare State Intervention without Unfair Competition

Public organizations must know how to avoid competing with professionals. They have the role of catalyst and there must be control of them by the French Department of Concurrence.

The French government must also monitor the entire program, the very evolution of the venture capital industry, in order to be ready to reduce its actions and to withdraw.

5.3.4 The Model of the American SBA

The American Small Business Administration provides a good example of innovative implementation that has proven to have good results. In 1982, for the first year, the President of the United States addressed the Congress with a report about the Small Businesses in the US [45, 1982]. It was mainly written by the SBA. There was already huge attention paid to small businesses and an increasing awareness that they would build the US wealth. This report is a good summary of multiple proposals that made the US a top country for entrepreneurship during the two last decades.

Today, a very complete web site provides complete information on all the issues and solutions that entrepreneurs can need, explaining status and policy. In addition, they develop networks through web-based applications. For instance, ACE-Net transformed the informal angel investment community into a nationwide system for entrepreneurs and investors. PRO-NET is another electronic gateway for the procurement of information about small business. It is a way of providing small businesses tools for advertising.

It also offers numerous links on venture capital, and explains the different status. Business plans are detailed and advice on each stage of the venture is provided.

Chapter 6

Conclusion

A Positive Assessment

After weighing the pros and cons, the French situation for innovation and venture capitalist does not seem so bleak. There were indeed many smart decisions that were made and measures that were taken in order to offer a favorable environment for venture capitalists..

In parallel, there is an on-going move towards an increase in improving the current situation of venture capitalists in France. This is due to the strengthening of around the European community and the internationalization of France because of it. In addition, there is a new awareness of the French official, that makes as their primary goal the promotion of innovation and entrepreneurship. Finally, the great interaction between the French public servants and the industrial world, allows a better understanding between the professionals and the regulators.

Still Far From the Goal

In spite of many assets of the French society, including its education, France has still important hurdles that do not open the windows of opportunities that are offered to entrepreneurs of other countries such as the US. Among these hurdles we can list the burdensome French tax and legal systems, as well as the risk and profit averse behavior of the French. In addition to this, the French government suffers a lack of communication about the different advantages and disadvantages of their regulatory framework. On the other hand, other countries have experienced substantial economical growth through audacious and global public programs. Israel is a good

example.

Three Priorities

The first priority is to increase the communicative potential of the French government both domestically and internationally. The second is to build the necessary baseline for making France a better place for entrepreneurs and investors. The third priority is to monitor in a more efficient way the public program for innovation.

France will need to grow through a revolution of mentalities and prejudices if it wants to respond to the competitiveness of other countries in IT.

Bibliography

[1] Government programmes for venture capital. 1996.

[2] National venture capital association 1997 report, 1997.

[3] Venture capitalists: A really big adventure. *The Economist*, January 15th 1997.

[4] *Doing Business in France.* HLB Groupe France Audit, http://www.hlbi.com, July 1998.

[5] Priorities for private equities, 1998. www.evca.com.

[6] *Technology Forecast.* Price Waterhouse, 1998.

[7] Suchman Edward A. *Evaluative Research: Principles and Practice in Public Service and Social Action Programs.* New York: Russell Sage, 1967.

[8] Hoogerwerf Andries. *Public Evaluation and Government in the Netherlands: Metaevaluation Research as One of the Solutions.* John Mayne, Marie-Louise Bemelmans-Videc, Joe Hudson and Ross Corner, eds, 1992.

[9] Ronald J. Gilson Bernard S. Black. Venture capital and the structure of capital markets: banks versus stock markets. *Journal of Financial Economics*, (47):243–277, 1998.

[10] W.M. Cohen. Empirical studies of innovative activity. pages 182–264, 1995.

[11] Rene David and John E.C. Brierley. *Major Legal Systems in the World Today.* Mew York, New York: The Free Press, 2nd edition, 1978.

[12] Richard De Neufville. *Applied Systems Analysis, Engineering Planning and Technology Management.* Mc Graw Hill, 1990.

[13] Yehezkel Dror. *Public Policymaking Reexamined.* Scranton, Pa.: Chandler, 1968.

[14] Stephen Prowse (Federal Reserve Bank of Dallas) George W. Fenn, Nellie Liang (Board of Governors of the Federal Reserve System). The economics of the private equity market. http://www.imdr.com/venture/preqmkt.htm, December 1995.

[15] Paul Gompers and Josh Lerner. Corporate venture capital: Organizational structure , complementarities, and success. 1998.

[16] Bill Jenkins Gray, Andrew and Bob Segsworth. *Budgeting, Auditing, Evaluating: Functions and Integration in Seven Governments.* New Brunswick, N.J.: Transaction Publishers, 1992.

[17] Larry E. Greiner. *De l'Utilite des Crises dans l'Entreprise.* Harvard L'Expansion, 1977.

[18] Larry E. Greiner. *Evolution and Revolution as Organizations Grow.* Harvard Business Review, 1977.

[19] Egon G. Guba and Yvonna S. Lincoln. *Effective Evaluation: Improving the Usefulness of Evaluation Results Through Responsive and Naturalistic Approaches.* San Francisco: Jossey-Bass, 1981.

[20] Henri Guillaume. Rapport de mission sur la technologie et l'innovation. Technical report, French Government, March 1998.

[21] Hambrecht and Quist. http://www.hamquist.com, 1998.

[22] David Hemenway. *Monitoring and Compliance: the Political Economy of Inspection.* Greenwich, Conn.: JAI Press., 1985.

[23] Adam T. Miller E.H.Bowman Hurry, Dileep. Calls on hig-technology: Japanese exploration of venture capital investment in the united states. *Strategic Management Journal*, 13, 1991.

[24] Roger Kaufman and Susan Thomas. *Evaluation without Fear.* New York: New Viewpoints, 1980.

[25] Andrei Shleifer La Porta Rafael, Florencio Lopez-de-Silanes and Robert W. Vishny. Law and finance. *Journal of Finance*, 1997.

[26] Jan Erik Lane. Implementation, accountability and trust. *European Journal of Political Research*, (15):527–46, 1987.

[27] Philippe C. Wells Leslie A. Jeng. The determinants of venture capital funding: Evidence across countries. May 1998.

[28] Michael Lipsky. *Street-level Bureaucracy.* New York: Russel Sage, 1980.

[29] Lister Vickery Marc Bertoneche, Pascal Gauthier. *Le Capital Risque*, volume 2344. Presses Universitaires de France, que sais-je? edition, 1997.

[30] O'Shea Margaret. Government programs for venture capital, 1996.

[31] J. McGuire William. *Theoretical Foundations of Campaigns*, pages 45–65. Newbury Park, Calif.: Sage, public communication campaigns edition, 1989.

[32] David Nachmias. *Public Policy Evaluation: Approaches and Methods.* New York: St. Martin's Press. Textbook, 1979.

[33] Virginia L. Lewis Neil C. Churchill. *The Five Stages of Small Business Growth.* Harvard Business Review, 1983.

[34] Virginia L. Lewis Neil C. Churchill. *Les Cinq Stades de l'Evolution d'une PME.* Harvard L'Expansion, 1983.

[35] OECD. *Employment Outlook.* 1994.

[36] OECD. *Employment Outlook.* 1997.

[37] PUMA (OECD). *Improving Evaluation Practices: Best Practice Guidelines for Evaluation and Background Paper.* http://www.oecd.org/puma/, 1999.

[38] French Ministry of Finances. Tableau de bord de l'innovation. http://www.finances.gouv.fr/innovation/tabinnov/tabinnov.htm, April 1999.

[39] Arne Ohman and Bo Ohngren. *Two Faces of Swedish Psychology: 1. Frontiers in Perception and Cognition: An Evaluation of Swedish Research in Cognitive Psychology.* Uppsala: Swedish Science Press, 1991.

[40] Josh Lerner Paul Gompers. Venture capital distribution: Short-run and long-run reactions. *Journal of Finance*, (53):2161–2183, December 1998.

[41] Reid Robert. *Year One: An Intimate Look Inside Harvard Business School.* New York, New York: Avon Books, 1994.

[42] Peter H. Rossi and Howard E. Freeman. *Evaluation: A Systematic Approach.* Newbury Park, Calif.: Sage, 4th edition, 1989.

[43] William A. Sahlman. The structure and governance of venture-capital organizations. *Journal of Financial Economics*, 27, 1990.

[44] Josh Lerner Samuel Kortum. Does venture capital spur innovation? Harvard Business School Working Paper #99-078 and National Bureau of Economic Research Working Paper No. 6846, June 1998.

[45] The Small Business Administration (SBA). *The State of Small Business: A Report of the President, transmitted to the Congress.* Washington D.C.: US Government, March, 1982.

[46] Michael Scriven. *"Goal-Free Evaluation", School Evaluation: The Politics and Process.* Berkeley, Calif. McCutchan, ernest r. house edition, 1973.

[47] Michael Scriven. *Evaluation Comment 3*, chapter 1-4. 1974.

[48] Michael Scriven. *The Logic of Evaluation.* Inverness, Calif, Edgepress, 1980.

[49] Michael Scriven. *Evaluation Thesaurus.* Newbury Park, Calif. McCutchan, 4th edition, 1991.

[50] Thomas D. Cook Shadish Jr., William R. and Laura Leviton. *Foundations of Program Evaluation: Theory and Practice.* London: Sage, 1991.

[51] John D. Sterman. *Business Dynamics: Systems Thinking and Modeling for a Complex World.* Partial draft, Version 1.2, December 1998.

[52] Edward A. Suchman. *Action for What? A Critique of Evaluative Research.* Boston: Allyn and Bacon, evaluating action programs edition, 1972.

[53] Evert Vedung. *Public policy and program evaluation.* New Bruswick, N.J. : Transaction Publishers, 1997. Utvardering i politik och forvaltning. English.

[54] Joseph S. Wholey. *Evaluation and Effective Public Management.* Boston, Mass.:Little, Brown and Co, 1983.

[55] Joseph S. Wholey, Kathryn E. Newcomer, and Associates. *Improving Government Performance: Evaluation Strategies for Strengthening Public Agencies and Programs.* San Francisco: Jossey-Bass, 1989.

[56] Safran William. *The French Polity.* Longman, 5th edition, 1998.

[57] R.C. Levin W.M. Cohen. Empirical studies of innovation and market structure. II:1059–1107, 1989.

[58] George Young. *Venture Capitals in High-Tech Companies.* Frances Pinter (Publishers), London, 1985.

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6.1 Glossary

A

l'ANVAR: l'Agence Nationale pour la Valorisation de la Recherche: The French Agency for a higher value of Research. Its web site is http://www.anvar.fr

B

BEI: Banque Européenne d'Investissement. European Bank for Investment

BJTU: the Beteiligungskapital fuer Junge Technologieunternehmen or Equity Participation for Young Technology Companies. This is a German program that occurred between 1989 and 1995. It was a co-investment scheme that provides the entrepreneur with the ability to repurchase from the Ausgleich Bank the government shares.

BTU: The Beteiligungskapital fuer Kleine Technologieunternehmen or Equity Participation for Small Technology Companies. This German public program was the successor of the BJTU. Started in 1995 and planned to last till 2000, funds will be brought only in the same level as a private investor. It contains also a guarantee scheme for the private investor.

BVK: Bundesverband Deutscher Kapitalbeteiligungsgesellschaften. This is the German Venture Capital Association. Its website is http://www.BVK-eV.de

C

Le Capital Creation:

Le Capital Développement:

Le Capital d'Amorçage: see Seed Capital.

Caisse des Dépots et Consignations (CDC): French funding body for public works and housing

CGI: Code Général des Impôts, or French Tax Code.

Commission des Opérations en Bourse: (COB) this is the French equivalent of the SEC (Securities and Exchange Commission).

D

DiGITIP: Direction Générale de l'Industrie, des Technologies de l'Information et des Postes. Department of IT in the French Ministry of Industry and Finances.

E

EASDAQ: European Association for Security Dealers and Automatic quotation. Its web site is .....

L'Epargne de Proximité: Direct investment from private parties in non-public companies. It is also called "Love Money", because it often comes from relatives.

The EVCA: the European Venture Capital Association. This association gathers the main independent venture capitalists from all over Europe. Its web site is http://www.evca.com

F

Fonds d'amorçage: funds that are to invest in early stage ventures

G

GIE: Groupement d'Intérêt Economique. This is one of the principal form of business in France. In many cases it is a consortium structure, designed to pool the efforts of several firms in a specific field, for example technical research. Members have each unlimited joint and several liability.

H

I

J

K

KBG: Kapitalbeteilungsgesellschaften or Equity Stock Companies: they were in Germany, either public or private. They provided equity or near-equity to small firms that require financing for expansion purpose.

L

LFI: Loi de Finances Initiale, Initial Law of Finance. Every year the French government proposes a new Law of Finance to the French Congress. It deals with the level of taxes, the public budget and its breakdown between administrations. It is also a way of introducing new financial status or advantages for organizations.

LFR: Loi de Finances Rectificative. This is a correction to the current LFI that is issued during the year.

M

MEFI: Ministère de l'Economie, des Finances et de l'Industry. Ministry for Economy, Finance and Industry

MERT: Ministère de l'Education nationale, de la Recherche et de la Technologie. Ministry for Education, Research and Technology

N

Le Nouveau Marché: the new Market: it is the French equivalent of the American NASDAQ. Its goal is to promote the IPOs of new French ventures.

NVCA: the National Venture Capitalist Association. This is the main association for independent venture capital firms in the US. Its website is http://www.nvca.com

O

P

P.M.E: Petites et Moyennes Entreprises. Small and medium sized enterprises. Companies with between 1 and 499 employees.

Q

R

S

SBIC: Small Business Investment Corporations

SCOR: Small Corporate Offering Registration. It is a new program started by the US SEC in 1992 as a way to help small businesses get easier access to equity capital, while satisfying SEC requirements.

SDR: Sociétés de Développement Regional. Organizations for the promotion of regional development

Seed Capital:

SOFARIS:

T

TRI: Taux de Retour Moyen, this is the average return on investment

TPE: Très Petite Entreprise. Very Small Venture, they have between 1 and 10 employees.

U

UBG: the Unternehmenbeteiligungsgesellschaften or Societies for Enterprise Participation. They are the German equivalent of venture capitalist. Created in 1987 they enjoy certain tax advantages.

V

W

WFG: The Deutsche Gesellschaft fuer Wagniskapital (German Society for Venture Capital). Created in Germany in the 70s this was the first German Venture Capital.

X

Y

Z