

Nouvelles Visions

Toward a world of knowledge.

A report by the
FONDATION CONCORDE

ECOSYSTEM FOR INNOVATORS, *a new way to boost innovation*

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With the help of academics, elected officials
and business men and women

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(see previous publications on page 43)

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SYNOPSIS

SYNOPSIS.....	3
FOREWARD.....	5
INTRODUCTION.....	7
PART I :	9
FROM RESEARCH STRATEGY TO ECOSYSTEM FOR INNOVATOR	9
I. – The French strategy for research & innovation :.....	9
II. Change your point of view	10
III. Ecosystem for innovator is the key concept for innovation policy	12
IV – Key concepts of the reform :	13
1 - Innovation.....	13
2 - Innovator :.....	14
3 – Innovative Small Business Corporation (I-SBC) :	14
4 - Ecosystem of innovator	15
PART II :	16
9 WAYS TO CREATE AN INNOVATORS’ ECOSYSTEM	16
1 - A new status for Innovative SBC (I-SBC) with transparent criteria.....	16
a – Innovative SBC (I-SBC) :	16
b - Create a “single window” for transparent support :.....	17
c – Simplifying the regulatory environment of I-SBC :	17
d – Putting I-SBC out of unfair competition or abuse of dominant position :.....	18
e – Turn state administration into partner of I-SBC :	18
f – Accounting standards :.....	19
g – Encourage I-SBC to have a long term policy for R & D :	19
2 - Tenfold increase funding for innovative companies	20
a – A new French venture cap for funding I-SBC :	20
b - Fiscal transparency of the new companies :	20
c - The ISF and other tax measures :	21
d – Business Angels (BA) : the virtuous circle of success	21
e – A popular saving for innovation	22
3 - Create a “local Executive” for innovation” in the “performance territories”	23
a – The function of the local Executive for innovation :	23

b – Territories and worldwide networks of Innovators	24
c – Performance territories	24
4 – Create a status for innovators with transparent criteria	25
a – Definition of an innovator	25
b – Continuing social benefits of innovators	26
5 – Welcoming the foreign innovators	27
a – Create immigration rights for innovators	27
b – Create a favorable tax status for innovators and innovation	27
6 – Update Patent Law for Innovators and I-SBC	29
a – Update Intellectual Property	29
b – Establish a partnership between researcher and innovator	30
7 – Create innovation training in each high school	31
a – Innovators training	31
b – Educating future partners of innovators by preparing them to welcome innovation	32
c – Understand innovation	32
8 – Lower the cost of research and enhance technology transfer to I-SBC33	
a – Research costs : turn the CIR into CII (Crédit d’Impôt Innovation – Tax credit for innovation)	33
b – Technology transfer costs – toward a French « Bayh-Dole act » for I-SBC34	
c – Develop cooperative research	34
9 – Launch one major program for each presidency	35
a – Ongoing programs (Ariane, Airbus, TGV...)	35
b – One new major program per presidency	36
c – Themes for the future : Knowledge, Nanotechnologies, Biotechnologies, Ecology, and Ocean	36
Create a Secretary of State for Innovation under the Prime Minister to set up structures to support the innovators	37
CONCLUSION	38
Short bibliography on innovation	40

FOREWARD

Innovation, a great issue for our country !

General de Gaulle and Georges Pompidou initiated the French innovation policy in the years 60-70. This policy was initially based on major projects such as Diamant, then Europa and Ariane (space rockets), the High Speed Train, the civil nuclear industry and Airbus. In the 80s, as there were no more major new projects, innovation policy has evolved into an amalgam of programs such as "electronic industry" or Eureka. Since this policy has gradually turned into a general policy of encouraging innovation in all sectors : creation of FCPR (capital development fund), OSEO (national bank for innovation), ANR (National Agency for Research), clusters and innovative start-up status. Since the last presidential election, this organization has been extended by the generalization of the CIR (Tax credit for research), TEPA funding (economic development law of 2007) and by the implementation of the National Strategy for Research and Innovation (Stratégie Nationale de Recherche et d’Innovation - SNRI) coordinated by the Ministry of Research, which is mainly a research strategy organization.

Despite all these efforts, the global French economy performance is unsatisfactory, especially for innovation. Our country has not yet found the right way to enable it to improve its economic achievements. Among rankings dealing with “innovation”, France is usually put behind Germany and Great Britain.

Yet, the past excellence of France in innovation suggests that some of our "economic and cultural fundamentals" are relevant : automotive and aviation in the early XX^e, hypermarkets, nuclear energy, space exploration, high speed train during the second half of the XX^e, are all proof of our core capabilities. In other words, we believe that, in a more helpful

environment, French people would be likely to become the leading innovators they were in the past.

This communication suggests to base the French innovation policy on both topics, the function of “innovator” and its environment or ecosystem ; which will bring to the French creativity, a context (=ecosystem) in which can be developed world’s future innovation.

INTRODUCTION

Social and economic effect of a new innovation policy

Innovation will be the motor of our future development, as it has been the engine of our past wealth.

Growth needs innovation

All economists agree on the fact that innovation is what was once called “the unknown growth factor” , that is to say half of the French economic growth since 1945. Indeed, as innovation is often a factor of decline in the nominal price, some believe that over three quarters of economic growth is due to innovation.

Innovation needs help at all stages, from the tiny innovations (the Japanese « Kaizen »), which allow significant improvements in productivity by collection, to breakthrough innovation opening new markets.

The winners of tomorrow will be revealed by their ability to develop these innovations, to open up new ways of development and to design new technical and economic models.

Better usage of innovator’s capacity

However, research efforts are not sufficient to boost innovation if we don’t capitalize on research results. Let’s see how the innovator can be considered as the best agent for transferring ideas into economic objects.

An innovator can work as an independent entrepreneur or within a company. He is the accelerator, the catalyst between researchers, companies and governments. Therefore, we strive to define and facilitate new relationships with his environment that we will call the innovator’s ecosystem. Examples :

- The administration has to become a partner in the innovation and therefore to the innovator; it must find ways to support the conquest of new economic territories and not to brake.

- We need a strong partnership between researcher and innovator, in order to involve all of them in success achievement.

- In the same way, "growth leaders" (innovators inside a company) have to be acknowledged and be associated with the results of their ideas.

- We also need for corporations to systematically develop partnerships with innovative SBC (Small Business Corporations).

- On the other hand, innovators have to match countries' expectations and that's why we must organize and promote training for innovation.

Thus, this communication will build a national project to modernize innovation's basic mechanisms.

Example : Do we need a national program for electric vehicles ?

Why not launch a major electric vehicle program, considering we already have a strong background ? Open tendering announcement, our powerful automotive industry, leading labs developing high tech batteries and fuel cells.

However, others highlight that the exploitation of the ocean, fusion energy or solar deserve such support.

The Government has to make a choice in association with industry.

Part I :

From research strategy to ecosystem for innovator

Most of the innovation strategies, beginning with the recommendations of the OECD (1997) and Lisbon (2000), are now based on the beliefs of the need to increase research quantity, so the innovation volume can be enhanced.

Our analysis reveals that innovation is not a direct result of research. It is a complex, random, economic and social phenomenon; sometimes scientific, rarely rational, which doesn't respond to a single pulse of "inputs". Moreover, the European Community and the OECD are reviewing their analysis and have initiated studies to reformulate their policies. The OECD published new recommendations in June 2010 granting a little more room for the entrepreneur.

I. – The French strategy for research & innovation :

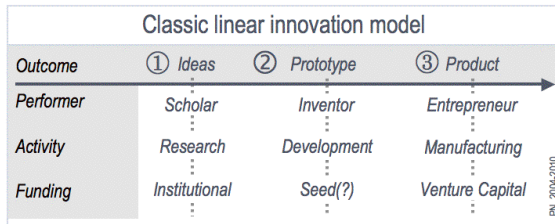
Following the guidelines of the European Lisbon Agenda (2000), the French policy of innovation is still mainly a research policy. Characteristically, the National Strategy for Research and Innovation (SNRI) is defined under the leadership of the Ministry of Research and, therefore, mainly concerned with issues of research organization and promotion. Thus the five guidelines defined by the official report "National Strategy for Research and Innovation 2009" are structured by the research function and based implicitly on the fact that innovation is the automatic result of this research effort. These guidelines are :

- 1 - Basic research is a political choice
- 2 - Research has to be linked to society and economy
- 3 - Improved consideration for risks and the need for security
- 4 - The importance of social sciences in all fields
- 5 - The core element of modern research is multidisciplinary

This theoretical vision ignores keywords such as market, business, startups, marketing or innovation.

II. Change your point of view

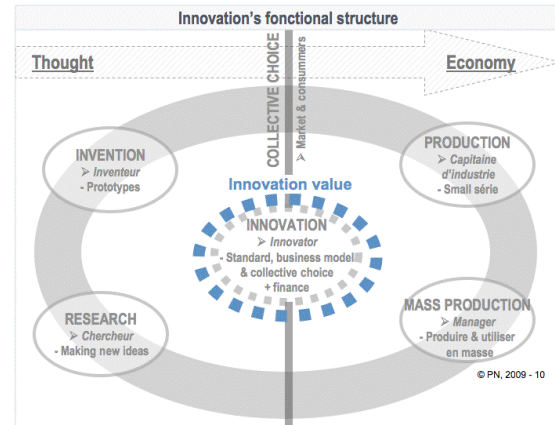
The previous policies are implicitly based on a linear and mechanical process of innovation :



Our analysis is based on a new study : innovation is considered as a complex phenomenon that must be constantly stimulated and whose goal should be to change ideas to the economic object. This transfer is mainly carried out under the leadership of the innovator who achieves this change.

In fact, **the innovator** is the person who cuts the Gordian knot of innovation: defining the technical standard and the economic model, then making the first sales. In practice, this activity usually includes the filing of a patent, the effective management of an innovative company or an innovative project within a large structure.

Several types of players achieve the “innovator” function. Most often, it is the inventor, the entrepreneur or even the researcher. In settled business, this may be the President when it comes to reinvent the business model of the company (e.g. Renault launching the low cost acquisition of Dacia). According to the terminology and the circumstances, an innovator can be qualified as a “catalyst”, an “intrapreneur”, a “growth leader”, an “entrepreneur” or an “innovator”. This polymorphism explains that it is difficult to characterize an innovator by the State administration.

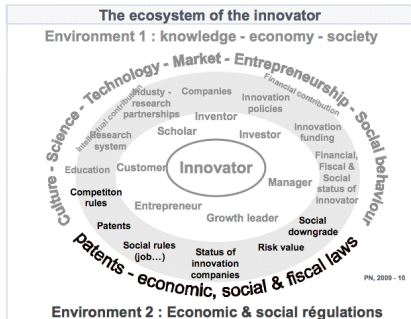


III. Ecosystem for innovator is the key concept for innovation policy

If the basic structure of the innovation process is generally known, its process remains human and sketchy. This alchemy is still mysterious. The "heart" of the process is the innovator and the ecosystem has to boost his efficiency.

The ecosystem for innovator (and not for innovation) is the central concept of our way of thinking. This ecosystem includes all the innovator's economic life structures and conditions, including funding, fiscal and social regulations, and all other rules regulating its entrepreneur life. It is in fact, the environment, in the broadest meaning, of all stakeholders of the innovation process. It is part of the entrepreneurial atmosphere described in our previous publications.

The development of this ecosystem will make France a leading innovator, constantly generating innovation, becoming a "sponge" for ideas that will be changed into innovations.



The specific objectives of planning a policy for this ecosystem are to stimulate innovative capabilities. These mainly are :

- Create and organize a national political momentum, with tools (the possibilities of major programs - which of course did not exclude small companies) and support (administration or specialized facilities);
- Create a status for innovative companies bringing an effective framework to entrepreneurs;
- Implement effective funding for quality projects;
- Strengthen social protection and establish a tax status for innovators;
- Support innovator so he can devote to innovation, not research grant or administration;
- Define and implement relationships with the economic environment;
- Train and advise to improve the quality of innovators;
- Define and implement a new relationship between researchers and innovators to accelerate the transfer of ideas;

IV – Key concepts of the reform :

To implement the recommendations outlined in part two, we suggest some definitions.

1 - Innovation

Concept: bringing to the society as a whole, sustainable economic efficiency improvement.

Proposed legal definition: An innovation is the implementation at the macro-economy level of a new technique, a new tool or a new

organization in the broadest sense of those terms, which improves sustainably and substantially the economic efficiency of the society as a whole.

2 - Innovator :

Concept : The innovator is the person defining the business model, the technical standard and achieving the first sales (beginning of collective choice).

Proposed legal definition :

- Any managing director, member of the board of an ISBC (Innovative Small Business Corporation) with statutory function ;
- Anybody whose name is on the patent or in charge of commercial development of a new patented product (project manager) of an I-SBC;
- Anyone who has filed a patent, with incomes from this patent (directly or indirectly) greater than 50% of his total income, or an amount of more than 50,000 Euros per year.
- Anyone who, although not within the above categories, may be linked because of the description of its activity by OSEO or certified organizations and be treated as an innovator according to jurisprudence to be developed.

3 – Innovative Small Business Corporation (I-SBC) :

Concept : An I-SBC is a SBC which conducts an innovation.

Proposed legal definition : SBC (European definition : corporation with less than 250 people employed and a turnover under 50 M€ or with a balance sheet under 40 M€) independent (private shareholders – no relationship with large corporations) dedicated to innovation according to one of the following criteria : company spending more than 10% of its turnover on R&D (depending on business specificities), or a company

dedicated to the exploitation of patents or new processes (statutory purpose + more than 50% of the turnover if it is over 1 M€ / year), or the decision of an adhoc committee.

4 - Ecosystem of innovator¹

Concept : The innovator's ecosystem is made up with all economic and social rules allowing the innovator to achieve its "job", i.e. to transform ideas into social products under the constraint of efficiency.

Proposed legal definition : All legal or regulatory texts, all behavior and social uses, all public or private institutions, especially businesses in touch with innovative companies or innovators.

¹ We deliberately use the term innovator and not innovation. When associated with the term ecosystem, innovation becomes a kind of animism. It is the living being who has an ecosystem, not a concept, even sociological.

Part II :

9 ways to create an innovators' ecosystem

To turn France into a country of innovation, we introduce 9 major emergency ways able to create an ecosystem for French innovators and securing our position in economic competition, in a medium-term program.

1 - A new status for Innovative SBC (I-SBC) with transparent criteria

Simplify the environment and enhance relationships with partners

In the U.S., the SBC¹ is the instrument of innovation policy. They represent a major share of R&D (25% of scholars) and technology transfer (50%). France has to find a way to move from its current poor number of SBC to a standard similar to U.S..

The SBC is also a tool for the innovator and one of the main components of its ecosystem. Therefore, we have to develop an Innovative SBC status (I-SBC), which will accommodate with the initiatives of the innovator.

a – Innovative SBC (I-SBC) :

The idea is to create a single and simple concept, with specific and transparent rules.

- It has to be an European SBC²;

¹ Company with fewer than 500 employees, according to the criteria used in the U.S. (SBA)

² We'll have to envisage the possibility of increasing the number to 500 as in the U.S. instead of 250 in Europe, which is very low.

- It's qualified as innovative because 10% of its turnover (figure to modulate according to the activity) is dedicated to R&D, or because it's dedicated¹ to the operation of one or more patents, or because it's classified as innovative by a national commission.

This status of I-SBC is a key in creating an ecosystem for innovators that may itself be defined as a leader of an innovative company.

b - Create a "single window" for transparent support :

The French assistance system is too complex, spread out and unpredictable. The evolution of French research tax credit shows that we can transform an complex and inefficient system to a simple and efficient system. We suggest to simplify the assistance organization and to conduct to a "single window" similar to the "businesses creation" and to simplify the allocation rules to make them transparent.

- **Implementation of a "single window"**
 - Creating a "single window" for administrative assistance and the administrative procedures of the I-SBC.
 - - Linking the "single window" with the Secretary of State.
- **systematic increase the transparency of grant**
 - Set up a commission to clarify regulations.
 - Any grant has to be "Automatic" and transparent with a possible regulation by a review committee. At least 70% of grants should be automatically granted and the Commission's opinion must remain "marginal".

c – Simplifying the regulatory environment of I-SBC :

The over-regulation often leads to stem the development of innovation.

¹ The simple definition of its purpose in the statutes, if the CA is less than € 1 million or a CA composed primarily of activities related to patents

- **Review of prudential regulation**

Establish a legislative committee to re-evaluate all types of certification, assessing that preventive measures and costs are adjusted to the issues; assessing also that the regulation does not block innovation. Where appropriate, establish a special regulatory limit for innovation. The concept of responsibility must prevail over that of caution.

- **Simplification of the regulatory environment of the I-SBC**

Develop a simple flat-rate system, similar to that of auto-entrepreneur, with an output of 3 years when they lose the characteristic of I-SBC.

d – Putting I-SBC out of unfair competition or abuse of dominant position :

The aim of the measures proposed here is to improve the effectiveness of innovative systems by discouraging attitudes that prove destructive.

- **Strengthening the suppression of behaviours of unfair competition and abusive dominant position when the victim is an I-SBC**

- Increase the suppression of unfair competition acts, patent infringement, abuse of dominance or cartel in order to give it a deterrent effect, especially where criminal intent is serious. These include existing penal provisions for timely payment of subcontractors, provisions for patent infringements etc..
- Give legal power to the European directives in the absence of implementation. These guidelines ought to be taken then to the courts in France from the deadline for implementation set out in the Directive.

e – Turn state administration into partner of I-SBC :

- **Limit competition between public and private**

In some cases, it is possible to organize the marketing of public products by private companies, incorporating service in a more complex product. Application areas : education / training and transports.

- **Open public commands to I-SBC :**

Furthermore, the French government and public or quasi-public buying power has to serve the I-SBC. It involves setting up a quota of public sector procurement from I-SBC and / or gives a "bonus" I-SBC when they meet a public tender.

- Any administrative purchase service must reserve a quota of 5% to I-SBC.
- Provide a premium of 5 to 10% for I-SBC, when they respond to a call for tenders.
- Establish a specific insurance to prevent possible failures of I-SBC.
- Require all public agencies to show a record of "innovative" orders in relation to all other contracts signed by the agency.

f – Accounting standards :

France has no opportunity to decide alone accounting standards applicable in international markets, but may adopt internal measures or advocate for such changes internationally. The French accounting standards have to take into account the costs of all investments according to a rule relating to the evolution and duration of the phenomena, especially in information technology and communication (ICT) where intangible investments are not sufficiently taken into account.

- **Change the accounting rules for intangible assets**

Reviving a study on intangible assets with the aim of better taking into account book.

g – Encourage I-SBC to have a long term policy for R & D :

- **Establish a Human Resources organization and structure that supports the research effort and innovation**

Building a career organization for researchers who want to take distance with research, etc.

2 - Tenfold increase funding for innovative companies

French venture capital

By now, there is a density ratio of 1 to 10 between the volume of venture capital in France and in the USA. The raw figures unadjusted to population are therefore 1-50. This difference is due to the weakness of Business Angels in France and the low profitability of this activity which is not as fiscally supported like in it is in the US¹.

a – A new French venture cap for funding I-SBC :

In the U.S., President Roosevelt launched an action for small businesses (fewer than 500 employees) in the 1930s. In the 1950s, these measures have been enhanced with the establishment of the SBA (Small Business Administration), the SBIC (Small Business Investment Corporation), the tax transparency for the new companies, then in 1980, the Bayh-Dole act, the SBIR and the STTR's.

The American model, whose successes are evident, must be adapted to France. For example, we could create a matching loan with low interest rates for twice the amount of capital for any investment fund specializing in I-SBC.

- **A special status for *real* venture capital**

Create an autonomous status of venture capital for I-SBC, with a special tax status, financial contributions and specific social rules.

b - Fiscal transparency of the new companies :

The tax-transparent company was founded in the United States in 1958 under the SBA (Small Business Act). Since then, all the studies conducted by the American Parliament to assess this device led to a positive evaluation and extension.

¹ This issue will shortly be published by the Foundation Concorde.

In 2007, under the TEPA¹ Act, a comparable device was adopted by Parliament, but the implementing regulations didn't emerged.

- **Publish the orders concerning fiscal transparency Act (TEPA)** (or announce that the law applies as is, because orders are not necessary)

c – The ISF² and other tax measures :

- **Investment in I-SBC should get the same tax status than works of art**
- Exempting ISF for actions (bonds, various stable advances) of I-SBC. Remaining valid for 10 years after the end of I-SBC status, for shareholders retaining their shares.
- Exemption from taxes on capital gains for individuals who are committed to reinvesting in I-SBC, 75% of any capital gain within 5 years. In the meantime, this money will be credited on a "saving innovation" account.

d – Business Angels (BA) : the virtuous circle of success

Business angels (BA) are a quite specific class apart because they combine operational experience and investment capacity. France did not have enough BA for innovation because new entrepreneurs have been inadequate in the recent past.

- **Create a social and fiscal status "understandable" for Business Angels (BA)**
- Reduce the size of the tax order for SCR³ at less than 20 pages so the BA can use it easily (including single shareholder company and investment in their own business as for TEPA act). Overall, this

¹ French economic development law passed just after the election of President Sarkozy.

² French wealth tax

³ French status for SBIC

would lead to the remove the limit of 30% interest for small SCR ender 15 M €.

e – A popular saving for innovation

To enhance the funding of innovation, you must drain a large mass saving towards innovation.

- **creation of a savings dedicated to innovation**

It is natural that these savings have a "boost" similar to investors in venture capital funds¹. Among the current savings bank, we could select three products: a savings plan for Innovation, a savings account for Innovation and a life insurance contract for innovation.

¹ French FCPR

3 - Create a "local Executive" for innovation" in the "performance territories"

The local dimension of innovation

The objective is to give a local dimension to national policy to stimulate innovation. If the rules are nationally set, it is the local level that should open doors, resolve conflicts and anchor the innovator, without losing sight of the need for a global visibility. If part of clusters may seem attractive, the economic reality is in the so-called "performing territories" or "cluster of performance"¹ that could give a concrete framework to local delegate for innovation.

a – The function of the local Executive for innovation :

The local Executive for innovation is in charge of leading the innovation process and facilitating the function of innovators in its ecosystem. He has a dual function as a catalyst and facilitator. He could assume functions performed today as part of existing clusters or territorial governments.

- **Create a local Delegate for innovation**

Each Delegate, assisted by a small team, must become the facilitator of the local ecosystem. All local Executives shall monitor local policy and implement assessment systems;

The appointment of these local Executives - coordinators and mediators must combine central² and local agreement, by means of a selection of three candidates locally by the "performance territories", before decision of the Secretary of state. The term of office is three years.

¹ See our previous report concerning " performing territories"

² governmental

b – Territories and worldwide networks of Innovators

Rooted in an area where they were "welcomed" (Microsoft is still located in Seattle, residence of the young Bill Gates. The Michelin company is still very much present in Clermont-Ferrand, Peugeot around Sochaux, etc.), innovators must remain connected to the world. This is a key to their creativity and their ability to innovate. The immediate environment is naturally important, being careful not to neglect the contact with other areas related activities.

- **Assist the innovative weaving of a "worldwide network"**

Example: supporting the systematic organization of seminars and forums on the subjects of the "performance territory".

c – Performance territories

The local Delegate to local innovation will have to launch events, such as groups of entrepreneurs (SHERPA method) for the development of innovation.

The Delegate for Innovation will move into what we call the "center of global competences" for coordinating strategies and programs to stimulate economic fabric of the entrepreneurs.

4 – Create a status for innovators with transparent criteria

Welcome and foster innovators in the society

In the French society, fear of decommissioning and risk aversion are sources of social conservatism, if not a real deadlock. The status of "innovator" is a way to create a buffer on risk perception. We suggest to develop some social and psychological shocks such as the preservation of social rights (health insurance, mutual insurance, unemployment insurance, pension rights) so as not to discourage the innovators who are experienced even in large companies.

This whole system is quite similar to the "portability of rights"¹ currently negotiated by the social partners.

a – Definition of an innovator

The prerequisite is a clear definition of an "innovator" in order to define his status :

- **Provide an administrative definition of the innovator**
We propose to consider as an innovator :
- Any managing director, member of the board of an I-SBC (Innovative small business corporation) with statutory function ;
- Anybody whose name is on the patent or in charge of commercial development of a new patented product (project manager) developed by an I-SBC;

¹ The "portability of rights" is a tool of social flexibility: it allows to keep a pension cover for employees changing business and social insurance system.

- Anyone who has filed a patent, with incomes from this patent (directly or indirectly) greater than 50% of its total income, or an amount of more than 50,000 Euros per year.
- Anyone not matching to the above categories, but being linked because of the description of its activity by OSEO or certified organizations and be treated as an innovator according to jurisprudence to be developed.

b – Continuing social benefits of innovators

The objective is to reduce the risk perception so the innovator will not be discouraged by a possible pressure due to his social environment.

- **Continuing the social coverage of innovators to its previous level.**
- Right to maintain coverage for 10 years after the departure of a private or public company to create an I-SBC or participate. (Portability)
- Right to continue in the former mutual aid society with preferential rates over a period of 10 years. (Portability)

- **Continuing unemployment insurance for innovators at its previous level.**

Uphold for a period of 10 years of ASSEDIC¹ insurance at the prior level.

- **Create a retirement system for innovators**

Uphold for 10 years the rate of acquisition points to the level prior status as an innovator.

- **Develop the “holiday to start business” system**

Extension of the period to 3 years (full time) and 5 years (part time).

¹ French unemployment insurance

5 – Welcoming foreign innovators

Attracting innovators

France is (or was) able to welcome the greatest artistic talents (in the nineteenth and twentieth centuries), it should now be able to attract the most entrepreneurial and creative minds who will get rich and enrich the country (like what the United States since two centuries, and today, for example, “visa-entrepreneur”).

France has to focus on building a policy in this regard.

a – Create an immigration rights for innovators

- **Immigration right for innovators**

This possibility should be given to innovators (patent holders or holders of a European project) with French secured funding up to € 250,000 (€ 100,000 by a professional as SCR).

- **Development of scholarships (CIFRE¹, for example) and extended to foreign people**

Extension of research grants and possibility to give it to foreign researchers selected for their work quality.

b - Create a favorable tax status for innovators and innovation

There are two types of measures : measures of protection and measures of taxes reduction through tax status specific to innovators with the aim to make France more attractive.

- **Create a special tax window**

In each territory, a specific window (ie a special adviser) will deal with all taxation of every innovator, to protect him against excessive regulation

¹ French grants for scholars working in private companies

and discouraging tax. It will be under the joint authority of the Tax department and of the Secretary of State for Innovation.

- **Create tax exemptions to attract innovators who are already successful.**
- Remove the upper limit for tax exemption for income (direct or indirect) from patents by individual French residents.
- Exemption of tax on capital gains for reinvestment within five years, for French innovators. (With the opportunity to retain 25%)

6 – Update Patent Law for Innovators and I-SBC

Innovators and research

We know that innovation is not only high-tech and there are many counter-examples to the "R & D" model. However, we can't think that an innovation policy is possible without a very good level of research and a strong relationship between researchers and innovators. We have to define the basis of a true partnership between these two social entities. Successful innovators should be grateful to researchers since their actions are complementary. Patent law has to move in this direction.

a – Update Intellectual Property

Today, for an individual, the "actual" validity of a patent is 10 years since after the 11th year, the fee payable is increasing very rapidly and cancels the possibility of continuing to defend its rights.

We suggest to extend broadly the "actual" term of patents in order to discourage the practice of timing and waiting to cause fatigue and discouragement, then abandonment of the patent by innovators. It is a way to restore equality of opportunity between companies with financial resources and entrepreneurs without financial means.

- **Strengthening the protection of intellectual property for I-SBC (and innovators)**
- Lengthening the patent term up to 30 years
- Adjustment of annual maintenance costs at the current average cost of the 10 first years.
- **Extend the patentability to software, processes, etc.. (as is done in other countries outside the EU) to better protect our I-SBC.**

Extending patentability to the most favorable level for inventors, as in the USA, is very important in helping the innovators to fight against unfair competition.

- **Create special holding for patents**

Create special holding for patents and brands with special tax exemption based on Luxembourg model.

b - Establish a partnership between researcher and innovator

The heart of the partnership between the innovator and the inventor is the patent that allows them to share some of innovation benefits. Therefore the partnership between inventors and innovators (including those employees within a company) is grounded on the patent.

- **Researchers & inventors should get royalties from patents**

- In a company, inventors should be paid on the exploitation of their patents.
- Innovators Associates (project managers, etc..) Must also be able to collect royalties.
- In a big company, all royalties paid to individuals should be around 10% of total royalties.
- - For public research : researchers must have automatic right on patents from their work and if no patent is filed within six months to a year, they have to do it themselves, possibly in cooperation with entrepreneurs or companies¹.
- - If the patents are not used within 6 months to 1 year, they will go to the "market" and other agencies have access to them (one of the main settings of Bayh-Dole Act)

- **Innovative companies must pay widely for patents.**

Pay-out ratio for individuals above 10% could be increased to 25% or even 50% in I-SBC. (Percentage of the fee paid to the patent inventors)

¹ Italy will adopt quickly this measure..

7 – Create innovation training in each high school

Thinking and training

A better understanding of innovation, its processes, its mechanisms, its issues, is the base of any innovation policy. This knowledge must also be spread as soon as possible: understanding and operational training are the foundations of this policy.

a – Innovators training

- **create a "pilot" for research and training**

Assigning this mission to a school such as CNAM¹ or a network of schools like Ecole Centrale², Telecom Institutes³ or ENSI⁴.

It is about creating a center of excellence in research and teaching innovation, similar to the Kauffman Foundation in the United States, in order to feed the entire French teaching in theory and practical training in innovation

- **Develop "innovator" training in higher education**

Create "innovative" (or entrepreneur) trainings in institutions of higher education, starting with technical and business schools, but leaving the door open to more academic courses such as math or physics.

¹ Conservation National des Arts & Métiers, the largest technical training center in France.

² The oldest private engineering school in France. It has been the model for building the MIT at the end of the XIX^e. By now, it is a large network of nearly 10 schools and more than 1.000 engineers graduated / year.

³ Group of French engineering schools

⁴ Group of French engineering schools

The objective is to educate in innovation about 1% of students and to lead to early careers as entrepreneurs without dismissing those who are destined to be "intrapreneur" / growth leaders.

b - Educating future partners of innovators by teaching them to welcome innovation

We have to create a minimal cultural training for innovation, mainly historical and economic, for almost all graduates of higher education or even for secondary school. The objective is to prepare managers of the country to welcome and stimulate innovation.

- **An « innovation » requirements for all graduates**
- Create professorships in history, economics, and sociology of innovation.
- Modify Education diploma requirements accordingly.
- Create an education for scholars and students..

- **"Introduction to innovation » in schools**

An introduction to innovation in geography or economics of secondary schools for a period of 15 hours would bring the entire society, a culture conducive to innovation.

c – Understand innovation

This is to encourage research and works on the history, sociology and economics of innovation, well beyond what is done today.

- **Develop historical, economic and sociological research on innovation**
- Create professorships to teach the nature, process and value of innovation.
- Encourage the establishment of laboratories in universities and colleges and create a doctoral degree and innovation.

8 – Lower the cost of research and enhance technology transfer to I-SBC

Increase R&D

The quality of research is one of the main assets of Europe and especially France, but it is only one ingredient of innovation.

Lowering the cost of R & D is a safe way of development of I-SBC. The French state has a long history of lowering cost sector, unfortunately only applied to sectors in difficulty. We propose that this experience would be used for innovation.

a - Research costs : turn the CIR into CII (Crédit d'Impôt Innovation – Tax credit for innovation)

Since January 1, 2008, the research tax credit is a tax credit of 30% of R & D up to 100 million euros and 5% beyond that amount.

Companies entering for the first time in the device receive a rate of 50% the first year and 40% the second year. This is an excellent mechanism, which can be further improved.

- **Extend the CIR, simplify for I-SBC and cap for large firms**

The IRC must be extended and made easier for I-SBC, particularly for development expenditures, or marketing. In any case, it should be reserved for companies for their French R & D.

The CIR should also be increased for I-SBC up to 50% of the annual research expenditure, the amount is inherently limited by size.

Funding for this measure from the current level of cost will be easy by adopting the cap for large businesses..

b – Technology transfer costs – toward a French « Bayh-Dole act » for I-SBC

The PPP (public private partnership) in the field of innovation must be developed beyond what is considered today. We must follow the model of the Bayh-Dole of the United States and the findings of their 30 years of experience :

- **Encourage the development of technology transfer and partnerships**

Make an Act similar to the Bayh-Dole Act to encourage, if not force, the practical use of knowledge.

For example: implementation of legislation encouraging research centers to commercialize their patents because otherwise the patent may be used by other laboratories or companies (while remaining the property of the state), the principle of the compulsory license, which may possibly be extended to the full sale of compulsory patent.

- **Continue efforts of national organization of research in the context of the SNRI**

Systematically open to manufacturers and active presence of the Secretary of State for Innovation in the development of this strategy.

c – Develop cooperative research

- **Support cooperative research centers, such as industrial technology centers (CTI)¹ in areas where it exists, by doubling the funding for cooperative research**

¹ as the Instituts Carnot, French partnership for industrial research.

9 – Launch one major program for each presidency

A State-leader

A state-leader does not simply make rules, he or she also shows the example, both inside and outside. Large programs are necessary, especially in some areas where the immediate profitability prevents the private sector to move towards them. It was so with the space race for example. The President of the Republic has to initiate such program. The set can be organized in the framework of a Government Organization Act.

a – Ongoing programs (Ariane, Airbus, TGV...)

Most of the French innovation policy has long been made of these major programs. Not one of them has been abandoned, regardless of political majorities. There is a remarkable continuity. Today, these projects are usually organized jointly with European partners. These are:

- Air transport (Airbus)
- Conquest of space (Ariane)
- Defense (A400M - Tanks, missiles – hunters / in this area with some hesitation)
- High-speed transport (HST)
- Civil nuclear industry with a problem of coordination between manufacturers and operators.
- In addition to these successes, and to be objective, we must not forget the failures of some plan's "computers" or "machine tools" that show that choices must be weighed at length.

- **Organize the monitoring and coordination of major programs**

The mission of monitoring, coordination and evaluation of national innovation programs, and monitoring of European programs will be entrusted to the Secretariat of State for Innovation.

b – One new major program by presidency

In the past, some French presidents have tried to find a successor to these great programs. Without any substantial success. In coming years it will define one or more major programs by combining three elements: technical progress, a growing market with a clearly identified target.

- **One new program by presidency**

This new major program will be developed within an institutional framework, possibly with a vote by Parliament.

c – Themes for the future : Knowledge, Nanotechnologies, Biotechnologies, Ecology, and Ocean.

We don't need to define the major programs of tomorrow, but simply to sweep all the new opportunities that may be considered.

The choice of a major program will involve major organizations responsible for developing and implementing it, and will be informed by full analysis, as was the case in the 70s at the launch of the TGV, the Airbus or Ariane rocket..

- **Establish a procedure for prospective and ongoing assessment of major programs for the decision of the President of the Republic**

In the Government Organization Act, we have to establish procedures for investigation of the decision of the major program.

Create a Secretary of State for Innovation beside the Prime Minister to set up structures to support the innovators

Create a Secretary of State for Innovation to set up the policies and assess the results

By appointing a Secretary of State beside the Prime Minister, the Government will give a strong signal to the French society, administrations, businesses, and the world. This symbolic and structuring act could enhance the attractiveness of our country for the great innovators.

Its mission is to define, promote and implement French policy for innovation in order to turn France into an innovation leader.

Tasks and ability to act :

- administrative operational services to coordinate local delegate, « single window » and follow the correspondents in administrations and boards of the agencies, as well as ongoing assessment of the measures taken and the SNRI.
- mission services for the organization and facilitation of public debate, the implementation of major programs, the drafting of regulations and the preparation of draft legislation.

CONCLUSION

Responding to the crisis by building a society of the twenty-first century

Facing a new world characterized by increasing competition with emerging countries, France must regain momentum for accelerated innovation. It must first respond. This is the first "sense" of this report. But it should not stop at this step. We must constantly reinvent the future of this policy and return permanently to the heart of social debate. We must build a new society around the concept of innovation. This will be one of the missions of the Secretary of State for Innovation. While putting in place coordination with Europe, we must organize and broaden the national debate on innovation in partnership with institutions such as academies, universities and engineering schools, local authorities and national professional organizations, their technical centers and unions, employers, the Parliament, in France but also abroad.

Open prospects by sustaining a social debate to build an innovative society

This first operational approach is the creation of an ecosystem. It must be accompanied by a political reflection on the innovative nation / society, its qualities, constraints and rules. Innovators must immediately find their place in French society, but what should be their place in the long term?

The examples of Sweden and the USA show that we can make social room differently for the innovator. France must develop its own solution and make it evolve internally, taking into account its history, its sociology and political ambition.

This move towards an innovation society also needs to remain at the forefront of this thinking in the world because it is a perpetual competition. That is why France should both strengthen its international

image, becoming one of the reference areas in the world and being the center of international debate on the subject. Its "objective" should be to be more efficient than Massachusetts.

Because it is basically a long-term task which we trace the broad outlines.

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