The BeFund project – outline of a business plan

by Krzysztof Wasniewski

1 Executive summary

The BeFund project aims at creating a hybrid entity for the development of technologies proper to smart cities: a centre of experimental behavioural research coupled with an investment fund for startups.

The socio-economic environment of the urban structures we call "smart cities" displays somehow unique characteristics. Technologies that make a smart city, very largely marketed by startups, age quickly, and their relatively short lifecycle unfolds in a context of an already high and still growing density of population, accompanied by growing prices in real estate. At an even more fundamental level, smart cities host a type of technological change essential for our civilisation: transition towards new sources of energy mixes with the development of technologies, which, for the first time in our history, have the capacity to invent their own new patterns through the observation of human beings.

There is relatively little experimental research regarding the interaction between humans and smart technologies. The latter come frequently as prototypes developed by startups, and can benefit greatly, in their functionalities for end-users, from experimental behavioural research. This type of research has the potential to shorten the cycle of innovation and to minimize the risk of rejection by the market, whilst the team of the scientists involved would have privileged knowledge as for risks and opportunities in the process of marketing the technologies in question. Thus, it is logical to associate a research centre with an investment fund for startups.

The business logic of the BeFund project can productively combine with fundamental, behavioural research of general interest, and thus it can attract public funding. We still know very little on the essential patterns of human settlement. How do we react to changes in the density of population? How do we build social structures around the sources of energy and food? How do we form local hierarchies and local markets? On the other hand, the very methods of experimental behavioural research are turning into digital technologies. This path of scientific development seems to be just opening now, and the BeFund project can significantly contribute to that opening.

The capital necessary for initiating the BeFund project seems to be around €9,6 million with a prospect to grow the book value of the investment fund up to some €182 million.

The behavioural laboratory will have a mixed activity, joining the rental of lab space on an hourly basis with the organisation of conferences, as well as with the acquisition of public funding for research. The latter, in an amount of some €300 000 a year, seems to be the necessary condition for achieving profitable operations of the lab.

The investment fund is likely to need 3 – 4 years in order to break even, yet once this done, the net cash flow on the first 5 years of operations will be positive at the bottom line.

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The BeFund project is at its early stage of formalisation. The document you are reading presents the outline of a business plan, which, in the same time, is an invitation to discuss and exchange ideas.

2 The fundamental context of the BeFund project: the socio-economic environment of smart cities

The emergence of smart cities, as an urban concept as well as a business environment, seems to be based on three distinct, and mutually complementary fields of technological change: energy systems, the rearranging of infrastructure, and digital technologies.

Local projects of smart cities seem to develop with a strong dose of experimentation and networking. Acquiring and sharing the peculiar know-how attached to those projects plays a key role (see 'The State of European Cities'[3], 'Smart Cities in Europe'[4] , Projet Lyon Confluence[5] et 'Organicity'[6]).

This type of urban project seems to coincide with a characteristic combination of socio-economic factors, namely: the size, growth and density of local populations, as well as the prices of real estate.

In demographic terms, projects of smart cities seem to gather speed in urban communities of at least 1,5 million people, growing at a long-term rate around 3% a year.

The threshold of 3000 people per km^2 is the floor value prerequisite for profitable investment in urban infrastructure, whilst the observation of real-life projects of smart cities indicates 4200 people per km^2 as some sort of trigger, critical mass for starting.

Dispersed projects of smart cities (e.g. Vienna, Munich, Berlin, Copenhagen etc.) differ from the compact ones, which consist the reconstruction of whole districts, as Projet Lyon Confluence does. The density of population that seems prerequisite for the latter type is at least 8000 people per km^2.

[1] *https://orcid.org/0000-0003-0076-4804*

[2] *https://discoversocialsciences.com*

[3] *Source: http://ec.europa.eu/regional_policy/sources/policy/themes/cities-report/state_eu_cities2016_en.pdf last access March 20th 2018*

[4] *Source : 3rd Central European Conference in Regional Science - CERS, 2009 ; https://inta-aivn.org/images/cc/Urbanism/background%20documents/01_03_Nijkamp.pdf last access March 20th 2018*

[5] *Source : http://www.lyon-confluence.fr/fr/projet-urbain/ last access March 20th 2018*

[6] *Source : https://organicity.eu/what-is-organicity/ last access March 20th 2018*

As regards the prices of real estate, the interval between €3000 and €5000 per m^2 seems to make the triggering threshold, once again. Local projects of smart cities correlated with just as local a growth in the prices of habitable space per square metre.

Technologies that make a smart city are advanced ones, and, logically, they have a short lifecycle. The more of those advanced technologies is there in the urban infrastructure, the faster is the cycle of moral obsolescence in said infrastructure and more capital is required for financing the resulting amortization. Abundant amortization generates just as abundant an operational cash flow, and thus either a self-accelerating cycle of further technological change or substantial monetary balances. Projects of smart cities are likely to attract liquid capital at the expense of other projects, and yet, especially with the opportunities created by FinTech tools, cryptocurrencies included, these projects can become the generators of monetary mass.

The socio-economic traits of smart cities are close to those of the so-called StartUp Hubs, i.e. developed, urban clusters of startups (see, for example, http://www.startuphubs.eu). The match of those two local phenomena is noticeable, whilst remaining imperfect. A project of smart city seems to be logically associated with a cluster of local, technological startups. It is just as logical to expect the local startups to be focused on the development of those specific technologies, digital ones included, which make a smart city. The environment of smart cities favours abundant supply of prototyped technologies, in the early stage of development, marketed by startups, and, in the presence of quick technological change, the marketing of those technologies takes place under a significant pressure of time.

In such an environment, the local startups, besides the obvious need for financing the new projects, need solutions to shorten the phase of early launching in those new technologies, through methods of accelerated development. One such concept, already known and widely used, is that of Tech Hubs. **The BeFund project, outlined in this business plan, goes one step further. BeFund integrates, in one entity, a lab for behavioural, experimental research, for optimizing the functionalities of new, smart-city-specific-technologies for their end-users, together with an investment fund in startups. The essential idea is to push the concept of a Tech Hub as far as possible, regarding the currently available scientific knowledge, and to nest it in the environment of a smart city.**

BeFund has two aspects: the strictly scientific, and the business one. Scientifically, BeFund has the ambition to study the fundamental patterns of urban structures, whilst developing the very methods of experimental, behavioural research. At the business level, the project aims at developing something like a behavioural factory, able to provide unique competitiveness to the technologies tested.

3 Behavioural research as a tool for reducing risk and the cost of launching in new technologies

The economic logic accompanying the BeFund project assumes that the users' market has a certain finite capacity for absorbing new technologies, whilst the financial markets have a certain finite capacity to provide capital for such new ventures. Economic equilibrium in the process is that between two capacities: absorption on the part of the users, and financing on the part of investors.

Innovation is turbulent. Any new technology is exposed to the risk of failure, and to a cost of adjustment to the market. Both originate from the imperfect mutual adaptation between technology and human behaviour.

The risk of failure, in a new technology, can be apprehended as a cost, too. This is the cost to spend in order to replace the failed technology, or its component parts, with something that works for the end-users and for investors.

The total cost of innovation is the sum total of two distinct components: research and development on the one hand, and the cost of adjustment to the market, included the financial equivalent of risk, on the other hand. If we make the phase of research and development more efficient, the cost of adjustment to the market can decrease.

In a technological environment as swarming as that of smart cities, the total cost of adjustment to the market can become substantial enough to become a barrier, preventing from entry some technologies with good potential of growth, and hampering development in the local clusters of startups.

We can reduce the cost of adjustment to the market, in new technologies, by testing their prototypes in an experimental environment, which allows behavioural studying of the end-users, in their decisions and in their essential pieces of behaviour (e.g. by eye-tracking).

There are two differences between a scientific experiment and simple observation. Firstly, an experiment can be more efficient than observation by providing information faster and/or and at lower a cost. Secondly, an experiment can allow imposing to the experimental object more extreme a set of conditions than the real-life ones.

4 The specific experimental environment of BeFund

The review of literature regarding experimental, behavioural research shows quite conservative methods, accompanied by quickly developing experimental technologies.

The typical experimental environment in the academic world, outside the labs run by big corporations, stays in the framework of a classroom, more or less equipped with electronics. The behavioural interaction occurs, most frequently, as the person sits at a desk, in front of a computer. There are very few behavioural labs in Europe, even that limited in their research methods, accessible to the creators of technological startups.

The experimental technologies develop just as quickly as all digital technologies. Behavioural labs are standardizing around typical baskets of technologies regarding observation and analysis.

The sectors of video games, and online marketing have both developed impressive a range of techniques for behavioural observation, which, for unclear reasons, remain largely sulked by the academic world.

The BeFund project consists, among others, in creating as technologically advanced an experimental environment for behavioural research as possible, and make it accessible to the creators of technological startups. This is about creating an environment that allows prolonged stay, and thus able to simulate a habitat, whilst allowing as large a range of possible behaviour as in real life: decision making in real time, conversation, transport, movement, sleep and rest etc.

The second distinctive trait in the experimental environment of BeFund is the triangular architecture "users <> technology <> engineers involved". The idea consists in adding a meta-level of experimentation, namely that of studying the interaction between the customers and the engineers, so as to know more about the process of innovation in itself.

Such an experiment emulates an accelerated version of a market. Interaction between the users and the engineers, which, in a real market of digital products can unfold over years, is being accelerated and takes weeks, for example. The practical difference between the experimental environment, and the real world, consists in the plasticity of barriers to communication, usually present in real markets. Users impose to engineers a constant effort of innovation, by making choices in sequences. Each such choice is a piece of information for each of the engineers involved. An individual engineers reacts to the flow of information by delivering a flow of work, which results in a new choice presented to the users. Their subsequent choices sum up into a new flow of information for the engineers etc.

We can, for example, add an intermediary in the communication between users and engineers, and test the corresponding impact on the process of innovation. That intermediary does not even have to be human: it can be a piece of software able to filter information in a biased manner.

The fundamental question, underlying this type of experimentation, is "*How much time do we really need in order to devise new solutions and how can this time be modified by the presence of distortions, or the absence thereof*?".

5 Fundamental research with BeFund

One of the central ideas in the BeFund project is to start with own experimental research, i.e. research initiated and theoretically built at BeFund. This research will have a double role. On the one hand, it will serve to attract public funding, in order to set up and launch the experimental lab. On the other hand, it will make a marketing tool for attracting startups, keen on acquiring financial support from the BeFund's investment fund.

The lines of research proposed in this chapter for the initial research with BeFund are those, which I, Krzysztof Wasniewski, the author of this business plan, have somehow developed during the last 3 years. In my book, entitled Capitalism and political power[7], I attached significant importance to the density of population as a fundamental factor of any social change and this is **the first line of research** that I propose to start with BeFund. How do our technological habits change as we experience various densities of population? The big unknown here, and the biggest scientific challenge, consists in discovering how do we form our personal experience as for the density of population.

I have worked extensively on the correlation between social structures and social change, on the one hand, and the food and energy base we have, on the other hand. This research has found, so far, its formal expression in two articles: Technological change as intelligent, energy maximizing adaptation and Settlement by energy: can renewable energies sustain our civilisation? .

In **this particular direction of research, two ideas** stick out distinctly. **Firstly**, human beings adapt their whole activity to the food and energy base they have access to in a given place and time. Experimental research in this respect will consist in placing a test population in a controlled, experimental environment and the participants will have to adapt their technological habits to the existing food and energy base.

Secondly, it seems that the slightly starving populations, with a food deficit between 70 and 90 kilocalories per capita per day, are the most innovative ones. As the food deficit disappears, innovation remains substantial, yet less intense. On the other hand, deeper a food deficit leads to a deep slump in innovation.

The real, actual populations in the category of food deficit between 70 and 90 kilocalories per capita per day seem to display that deficit as the result of sharp inequalities in the distribution of food, rather than a generalised alimentary deficit. The occurrence of this particular type of food deficit seems to coincide with sharp and rather brutal social hierarchies.

The corresponding concept of behavioural research consists in creating an experimental environment where the participants will be observed in their technological habits, and, in the same time, they will be placed in a social structure conducive to inequalities in the distribution of food. Acknowledging the relevant ethical concerns, such research can bring fundamental discoveries regarding the way our social structures work, in connection with technological change.

[7] *You can check the detailed bibliographical references at my ORCID profile: https://orcid.org/0000-0003-0076-4804*

Finally, the last line of own research proposed for BeFund is the study of financial decisions made in the presence of technological change, and it is connected to a twofold observation. On the one hand, there is a significant correlation between the pace of moral obsolescence in technologies and the accumulation of monetary balances. I gave a formal expression of that correlation in two articles: Financial equilibrium in the presence of technological change as well as Technological change as a monetary phenomenon. On the other hand, urban environments in general as well as that of smart cities in particular give rise to rapid development in FinTech products. Behavioural research useful for the FinTech sector seems to be promising for attracting startups to the BeFund project.

6 Why coupling an investment fund with an experimental lab for behavioural research?

Behavioural research, such as it has been outlined before, gives deep insights into the interaction between human beings and the technologies of a smart city. This type of understanding is powerful in the marketing of these technologies, too. The team of experimenters involved can acquire, with time, unique know-how in that respect.

As BeFund project is oriented on startups, its prospective business partners are likely to have rather low a financial liquidity at the moment of working with the lab, still with a strong potential for future liquidity. Although it is possible, and recommended, to sell the scientific services of the lab on an hourly basis, as in the existing academic facilities, the greatest profits are to expect in connection with taking participation in the startups, whose technologies will be subject to experimentation with BeFund. The scientific collaboration with startups, at the lab, should be followed up in the form of an investment fund.

Investment funds remain quite cryptic as for their financial results, still it is possible to find some of them with financial statements publicly disclosed. In this business plan, the case of Foresight Group VCT[8] has been used as an illustrative example. The case suggests that an investment fund can structure its portfolio of participations so as to find reliable balance between the maximisation of value in the portfolio, on the one hand, and the current cash flow from the affiliated companies. The latter allows covering operational costs. An interesting regularity, in the case of Foresight Group, is that the current cash flow originates from infrastructural businesses, whilst the maximisation of value is being achieved in smaller, high-tech companies. This exactly the cocktail of participations that an investment fund can create when specializing in smart cities.

[8] *http://www.foresightgroup.eu last accessed March 22nd 2018*

7 The strategy for launching the BeFund project

The localisation of the BeFund project (mostly that of the experimental lab) can follow two alternative, and possibly complementary logics. On the one hand, the project should follow important clusters of startups, which points at locations such as: London, Paris, Berlin, Vienna, Munich etc. Yet, the ongoing projects of smart cities can be considered as the main attractor. Vienna, Munich and Lyon (France) seem to be interesting from this particular perspective.

The BeFund project will need to build competitive advantage in two markets: that of scientific services, and that of investment funds. The core idea of the strategy proposed is to build both advantages on the base of scientific excellence. The BeFund's own research, articulated into distinct projects, will make the basis for the early strategy.

The BeFund project covers 7 strategic phases, partly overlapping. Here below you can find their brief introduction:

1. ***Preparation of the initial research project; preparation of applications for the acquisition of public funding*** *>> the acquisition of public funding seems crucial for breaking even at the behavioural lab. The project includes, thus, a preparatory phase, when the operational goal is to put together the initial research team and to prepare a basket of public grants to apply for.*

2. ***The setting up of the behavioural lab (premises + equipment) >>*** *this phase will be functionally subordinate to the preparation and conduct of the initial research project at BeFund, thus it can be flexibly stretched over time, according to the current research needs, and the public funding effectively acquired.*

3. ***Marketing oriented on attracting the first startups willing to participate in the initial research project >>*** *it is important to create, as soon as possible, functional connections with the startup community; the ideal would be to have some startups participating, from the very beginning, and with their respective technologies, in the initial research project of the BeFund. Fundamental scientific research in the BeFund's own project would be conjoint with final development in those technologies, on the grounds of behavioural experimentation.*

4. ***The conduct of initial research project >>*** *for the moment, this phase is assumed to take around 18 months*

5. ***Publication of the results obtained in the initial research project; marketing targeted at the startup community in general*** *>> this the phase of scientific marketing; the results of the initial research project will be used to build a solid reputation, and to attract significant attention from the part of technological startups.*

6. ***The build-up of the first portfolio at the BeFund's investment fund*** *>> in this phase, the operational goal is to build a first portfolio of participations in startups, with a focus on strong potential for growth, in order to increase the capitalisation of BeFund itself.*

7. ***Quantitative stabilisation of the investment fund*** *>> the case study of Foresight Group VCT[9] suggests that a stable financial structure can be achieved, in the investment fund, with some 73% of capital invested in participations oriented on strong growth in value, and the remaining 27% placed in those able to bring substantial current cash flow. The latter should cover the operational expenses of the fund, and assure a margin of net profit equivalent to some 2% of the assets. Around 4% is supposed to be in current reallocation.*

The table below presents **the approximate timing of the seven strategic phases**:

Phase	**Month 1 - 6**	**Month 7 - 12**	**Month 13 - 18**	**Month 19 - 24**	**Month 25 - 30**	**Month 31 - 36**
Preparation of the initial research project; preparation of applications for the acquisition of public funding						
The setting up of the behavioural lab (premises + equipment)						
Marketing oriented on attracting the first startups willing to participate in the initial research project						
The conduct of initial research project						
Publication of the results obtained in the initial research project; marketing targeted at the startup community in general						
The build-up of the first portfolio at the BeFund's investment fund						
Quantitative stabilisation of the investment fund						

[9] http://www.foresightgroup.eu *dernier accès 22 Mars 2018*

8 The financial plan

The BeFund project aims at creating a hybrid entity, i.e. a behavioural, experimental laboratory combined with an investment fund for startups. The lab is supposed to be a profitable, highly competitive unit of fundamental behavioural research, specialized in the final development of technologies characteristic for smart cities. The investment fund will have the ambition to reach a medium-size class, as for European standards, i.e. between €130 mln and €200 mln, with a portfolio of participations allocated mostly into businesses with a strong potential of growth, whilst holding some participations that will assure a substantial current cash flow.

This business plan follows the logic of portfolio: the lab and the investment fund are seen as two distinct business units inside one hybrid entity, and each of them is supposes to develop a sustainable business model in its specific market.

8.1 The lab

The behavioural lab will have revenues from 4 main sources:

a) Public funding for fundamental research
b) Rental of the facilities to external entities
c) Organisation of conferences and forums
d) Resale of the morally obsolete equipment in the secondary market

The organisation of conferences and forums is probably the easiest to estimate in terms of revenues. The author of this business plan assumes the organisation of 4 big conferences a year, with an average attendance of 200 participants in each, and a gross margin of €50 per participant. The resulting flow of gross margin is equal to 4*200*50 = €40 000 a year.

The **resale of morally obsolete equipment** is nearly as predictable. Its estimation starts with the initial investment, which is being cautiously gauged between €200 000 and €500 000. The main benchmark is the behavioural lab at London School of Economics. Equipment (hardware + software) similar to that available at LSE is worth closer to €200 000. A behavioural lab equipped in the lines of this business plan, thus more elaborate, able to host participants in a simulated habitat, possibly for a prolonged stay, is more likely to cost closer to €500 000.

These numbers are estimations. According to the author's best knowledge, the equipment of behavioural labs is supplied by specialized companies, on the grounds of individualized tenders and offers. **In the calculations that follow, the cost of initial equipment is assumed at €500 000**.

Equipment of the behavioural lab is supposed to be the cutting edge of technology, and thus to have a short cycle of moral obsolescence: 2 years. Starting from the 3rd year of operations, the lab will start reselling, in the secondary market, the half of book value in its equipment, and said secondary market is supposed to force a 50% discount in price. With these assumptions, the revenue from reselling morally obsolete equipment is estimated at **€500 000 * 50% * 50% = €125 000 a year.**

Estimating the **revenues from the rental of the lab to external clients** requires some assumptions as for the operational model. The important point is the virtual absence of the so-

called working hours. The lab can work at any time of day and night, just like a recording studio, with maybe a short technical pause of 1 – 2 hours on 24.

The here-developed operational model refers to the so-called Rogers' paradigm. The full capacity of the lab, in terms of workable hours, i.e. 8760 hours a year, is an innovation, progressively absorbed by the market. The average customer (a typical startup) will need 5 years, or 60 months, to absorb that innovation, i.e. to end up by renting at least 1 hour of lab access. In equilibrium, each workable hour at the lab, out of the total 8760, has 50% of chances to be consumed over the period of 5 years since the day of opening.

The optimistic scenario of absorption by the market, without significant distortions, is based on the normal progression (normal distribution of events over time). The pessimistic one refers to the Poisson progression. Between the two, a middle scenario is defined as their mean, local value. Table 1, below, presents the estimation of the annual amount of rental, in hours.

Table 1: Simulation of rental hours at the behavioural lab

Year	Optimistic scenario (hours)	Pessimistic scenario (hours)	Middle scenario (hours)
Y1	1 075	0	538
Y2	1 411	0	705
Y3	2 620	0	1 310
Y4	2 220	112	1 166
Y5	2 670	1 625	2 147

Remark: 'Year 1' in the financial forecasts introduced in this chapter is assumed to begin from the 7th month of the strategic plan presented in the previous chapter.

Studying the case of behavioural lab at the London School of Economics suggests that the rental fee acceptable for the market could be around €250 an hour, which allows formulating **alternative scenarios of revenues from lab rental + gross margin from conferences + resale of obsolete equipment** (Table 2, below).

Table 2 : Simulation of alternative scenarios of revenues from lab rental + gross margin from conferences + resale of obsolete equipment

Year	Optimistic scenario of rental (€)	Pessimistic scenario of rental (€)	Middle scenario of rental (€)
Y1	€ 308 821	€ 40 000	€ 174 410
Y2	€ 392 703	€ 40 000	€ 216 351
Y3	€ 820 104	€ 165 000	€ 492 552
Y4	€ 720 055	€ 193 053	€ 456 554
Y5	€ 832 500	€ 571 210	€ 701 855

Estimating the last component of revenues in the behavioural lab, namely **public funding for research**, requires a few details about operational costs. Staying with the hourly base of operationalizing the lab's activity, it is useful to distinguish between the strictly spoken costs of maintenance, when the lab remains essentially idle, on the one hand, and the lab working at

the full swing of its scientific capacity, on the other hand. The former can be cautiously estimated at some €300 000 a year, whilst the latter seems to be around €170 an hour. With these assumptions, it is possible to formulate **alternative scenarios of the operational result before the acquisition of public funding for research (Table 3, below)**.

Table 3: Simulation of alternative scenarios of the operational result before the acquisition of public funding for research (brackets mean negative values)

Year	Optimistic scenario of rental (€)	Pessimistic scenario of rental (€)	Middle scenario of rental (€)
Y1	€ (219 677)	€ (260 000)	€ (239 838)
Y2	€ (207 095)	€ (260 000)	€ (233 547)
Y3	€ (36 734)	€ (135 000)	€ (85 867)
Y4	€ (51 742)	€ (130 792)	€ (91 267)
Y5	€ (34 875)	€ (74 069)	€ (54 472)

The above-presented analysis suggests that acquiring public funding for research is necessary for achieving profitable operations of the behavioural lab. The funding in question should cover the deficits specified in Table 3, above, and it is reasonable to expect a 20% operational margin over the costs, before amortization. Table 4, below, shows an estimation of the public funding required, according to alternative scenarios of rental.

Table 4: Simulation of alternative scenarios of the required public funding for the behavioural lab, in order to achieve 20% of operational margin

Year	Optimistic scenario of rental (€)	Pessimistic scenario of rental (€)	Middle scenario of rental (€)
Y1	€ 325 376	€ 320 000	€ 322 688
Y2	€ 327 054	€ 320 000	€ 323 527
Y3	€ 208 102	€ 195 000	€ 201 551
Y4	€ 206 101	€ 195 561	€ 200 831
Y5	€ 208 350	€ 203 124	€ 205 737

The last part of financial analysis, regarding the behavioural lab, is the estimation of the **capital required for its launching and development**. As specified before, the book value of fixed assets is being estimated at €500 000. Operational receivables are assumed to have a real payment term of 60 days, and the lab is supposed to have cash reserves sufficient for covering the operational loss before the acquisition of public funding.

Table 5: Simulation of alternative scenarios regarding the capital required for the launching and development of the behavioural lab at BeFund

Year	Optimistic scenario of rental (€)	Pessimistic scenario of rental (€)	Middle scenario of rental (€)
Y1	€ 770 442	€ 766 575	€ 768 509
Y2	€ 771 648	€ 766 575	€ 769 112
Y3	€ 671 546	€ 662 123	€ 666 835
Y4	€ 670 107	€ 662 527	€ 666 317
Y5	€ 671 724	€ 667 966	€ 669 845

The need for capital seems pretty even across the different scenarios of commercial rental at the lab. Starting from the 3rd year of operations, i.e. once the resale of obsolete equipment starts, the balance sheet of the lab can liberate some €100 000.

8.2 The investment fund for startups

Financial planning for the BeFund investment fund focuses on the path to follow in order to achieve both current profitability, and an attractive growth rate in the market value of assets.

The financial simulation starts with assuming that the investment fund will incur fixed costs typical for this type of organisation. Case studies made for the needs of this business plan suggest an amount between €1 200 000 and €2 300 000 a year. The mean value of this interval is €1 752 800 a year and this is the value taken as reference in the calculations presented further.

The report entitled "Global Startup Ecosystem Report 2017" by Startup Genome indicates a mean, initial value of one single participation around €600 000 per company, with the target value of mature participation reaching some €2 000 000 per company. For the needs of this business plan, three types of participations have been defined:

a) **Initial participations**, with a mean value of €600 000, able to generate a current cash flow at 1% of its book value, thus €6000 a year
b) **Transitional participations,** past the initial stage, but not mature yet for extracting the full expected cash flow from them; their mean book value is assumed to be €1 300 000, and they can generate a current cash flow at 2% of that value, thus €26 000 a year
c) **Mature participations**, in the sense that both their profitable resale and their full exploitation in terms of current cash flow is possible; their mean value is pegged at €2 000 000 per company, able to generate a 3% return in terms of current cash flow, thus €60 000 a year; the prime to collect on their possible resale is assumed to be 20% over their book value

Table, below, presents the financials on a possible path of development in the BeFund investment fund. The first three years of operations are likely to be run at an operational loss, still the operational profit possible to get starting from the 4th year makes it possible to close the first five years with a positive NPV. Table 6, further below, introduces a provisional calculation of the capital required. An amount around €150 million, in the balance sheet of the BeFund's investment fund seems to assure some kind of financial equilibrium.

Table 5: Simulation of the development path for the BeFund investment fund

Year 1						
	Number of participations	**Book value**	**Current cash flow to BeFund**	**Fixed costs of the fund**	**EBIT**	**Prime possible on the resale of participations**
Initial participations	12	€ 7 200 000	€ 72 000	#	#	
Transitional participations	0	€ -	€ -	#	#	
Mature participations	0	€ -	€ -	#	#	€ -
Total	**12**	**€ 7 200 000**	**€ 72 000**	**€ 1 752 800**	**€ (1 680 800)**	**€ -**
Year 2						
	Number of participations	**Book value**	**Current cash flow to BeFund**	**Fixed costs of the fund**	**EBIT**	**Prime possible on the resale of participations**
Initial participations	12	€ 7 200 000	€ 72 000	#	#	
Transitional participations	12	€ 15 600 000	€ 312 000	#	#	
Mature participations	0	€ -	€ -	#	#	€ -
Total	**24**	**€ 22 800 000**	**€ 384 000**	**€ 1 752 800**	**€ (1 368 800)**	**€ -**

Year 3						
	Number of participations	**Book value**	**Current cash flow to BeFund**	**Fixed costs of the fund**	**EBIT**	**Prime possible on the resale of participations**
Initial participations	12	€ 7 200 000	€ 72 000	#	#	
Transitional participations	22	€ 28 600 000	€ 572 000	#	#	
Mature participations	12	€ 24 000 000	€ 720 000	#	#	€ 4 800 000
Total	**46**	**€ 59 800 000**	**€ 1 364 000**	**€ 1 752 800**	**€ (388 800)**	**€ 4 800 000**
Year 4						
	Number of participations	**Book value**	**Current cash flow to BeFund**	**Fixed costs of the fund**	**EBIT**	**Prime possible on the resale of participations**
Initial participations	15	€ 9 000 000	€ 90 000	#	#	
Transitional participations	36	€ 46 800 000	€ 936 000	#	#	
Mature participations	34	€ 68 000 000	€ 2 040 000	#	#	€ 13 600 000
Total	**85**	**€ 123 800 000**	**€ 3 066 000**	**€ 1 752 800**	**€ 1 313 200**	**€ 13 600 000**

Year 5						
	Number of participations	**Book value**	**Current cash flow to BeFund**	**Fixed costs of the fund**	**EBIT**	**Prime possible on the resale of participations**
Initial participations	10	€ 6 000 000	€ 60 000	#	#	
Transitional participations	36	€ 46 800 000	€ 936 000	#	#	
Mature participations	50	€ 100 000 000	€ 3 000 000	#	#	€ 20 000 000
Total	**96**	**€ 152 800 000**	**€ 3 996 000**	**€ 1 752 800**	**€ 2 243 200**	**€ 20 000 000**

Table 6: Simulation of balance sheet in the BeFund investment fund

Year	Cash held for the immediate acquisitions in the following year	Cash held for covering the operational loss	Book value of participations	Total value of assets in the BeFund investment fund
Jour 0 - ouverture	€ 7 200 000,00	€ 1 680 800,00	€ -	€ 8 880 800,00
Fin de l'année 1	€ 15 600 000,00	€ 1 368 800,00	€ 7 200 000,00	€ 24 168 800,00
Fin de l'année 2	€ 37 000 000,00	€ 388 800,00	€ 22 800 000,00	€ 60 188 800,00
Fin de l'année 3	€ 64 000 000,00	€ -	€ 59 800 000,00	€ 123 800 000,00
Fin de l'année 4	€ 29 000 000,00	€ -	€ 123 800 000,00	€ 152 800 000,00
Fin de l'année 5	€ 29 000 000,00	€ -	€ 152 800 000,00	€ 181 800 000,00