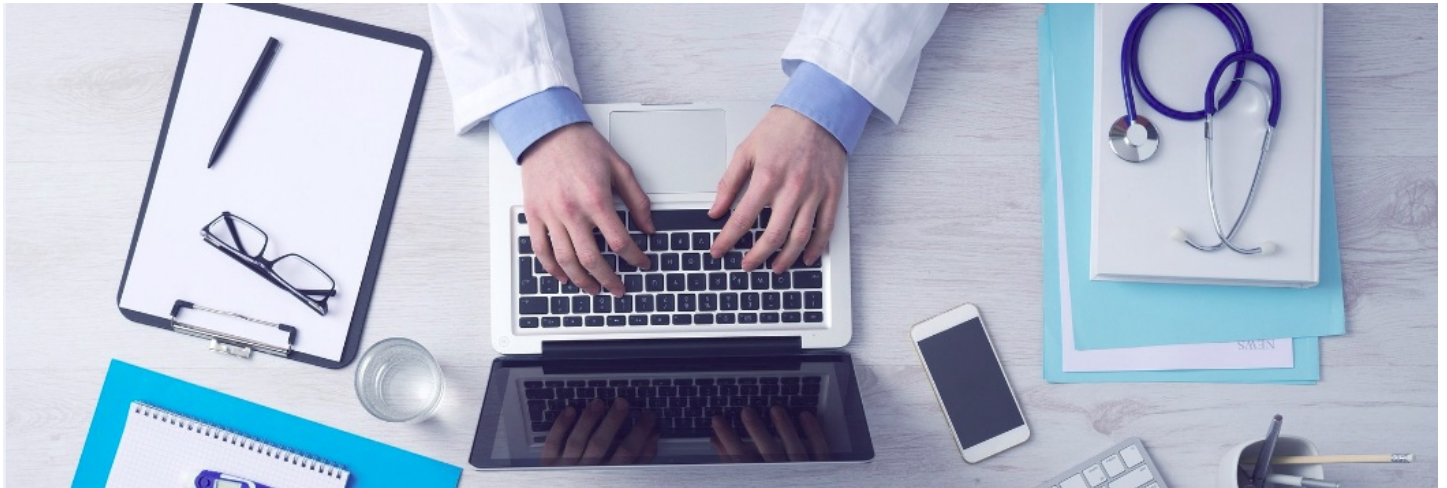


Impact of Government Organizational Reform to Scientific Research Legal System and Response Thereto (1) – For Example, The Finnish Innovation Fund (“SITRA”)



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I. Foreword

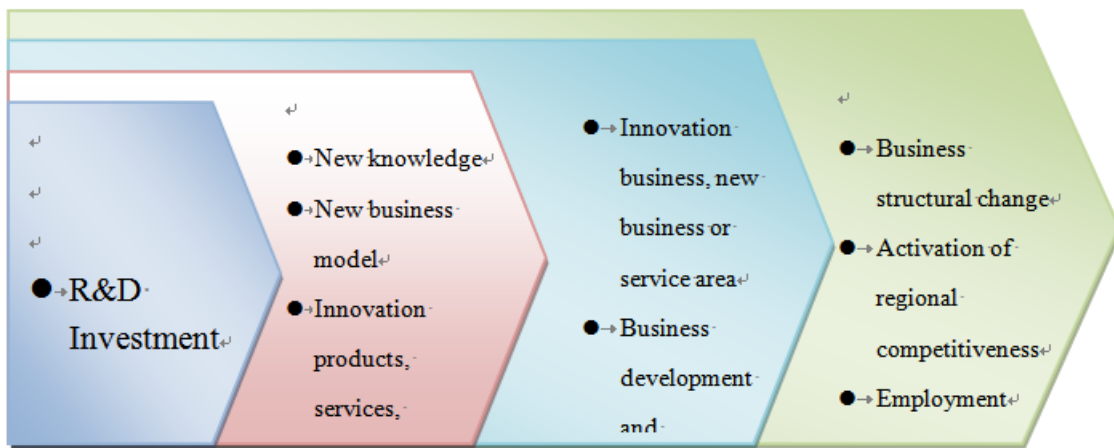
We hereby aim to analyze and research the role played by The Finnish Innovation Fund (“Sitra”) in boosting the national innovation ability and propose the characteristics of its organization and operation which may afford to facilitate the deliberation on Taiwan’s legal system. Sitra is an independent organization which is used to reporting to the Finnish Parliament directly, dedicated to funding activities to boost sustainable development as its ultimate goal and oriented toward the needs for social change. As of 2004, it promoted the fixed-term program. Until 2012, it, in turn, primarily engaged in 3-year program for ecological sustainable development and enhancement of society in 2012. The former aimed at the sustainable use of natural resources to develop new structures and business models and to boost the development of a bioeconomy and low-carbon society, while the latter aimed to create a more well-being-oriented public administrative environment to upgrade various public sectors’ leadership and decision-making ability to introduce nationals’ opinion to policies and the potential of building new business models and venture capital businesses[1].

II. Standing and Operating Instrument of Sitra

1. Sitra Standing in Boosting of Finnish Innovation Policies

(1) Positive Impact from Support of Innovation R&D Activities by Public Sector

Utilization of public sector’s resources to facilitate and boost industrial innovation R&D ability is commonly applied in various countries in the world. Notwithstanding, the impact of the public sector’s investment of resources produced to the technical R&D and the entire society remains explorable[2]. Most studies still indicate positive impact, primarily as a result of the market failure. Some studies indicate that the impact of the public sector’s investment of resources may be observable at least from several points of view, including: 1. The direct output of the investment per se and the corresponding R&D investment potentially derived from investees; 2. R&D of outputs derived from the R&D investment, e.g., products, services and production methods, etc.; 3. direct impact derived from the R&D scope, e.g., development of a new business, or new business and service models, etc.; 4. impact to national and social economies, e.g., change of industrial structures and improvement of employment environment, etc. Most studies indicate that from the various points of view, the investment by public sector all produced positive impacts and, therefore, such investment is needed definitely[3]. The public sector may invest in R&D in diversified manners. Sitra invests in the “market” as an investor of corporate venture investment market, which plays a role different from the Finnish Funding Agency for Technology and Innovation (“Tekes”), which is more like a governmental subsidizer. Nevertheless, Finland’s characteristics reside in the combination of multiple funding and promotion models. Above all, due to the different behavior model, the role played by the former is also held different from those played by the general public sectors. This is why we choose the former as the subject to be studied herein.



Investment → Investment projects → Direct impact → Impact to national and social economies

Data source: Jari Hyvärinen & Anna-Maija Rautiainen, Measuring additionality and systemic impacts of public research and development funding – the case of TEKES, FINLAND, RESEARCH EVALUATION, 16(3), 205, 206 (2007).

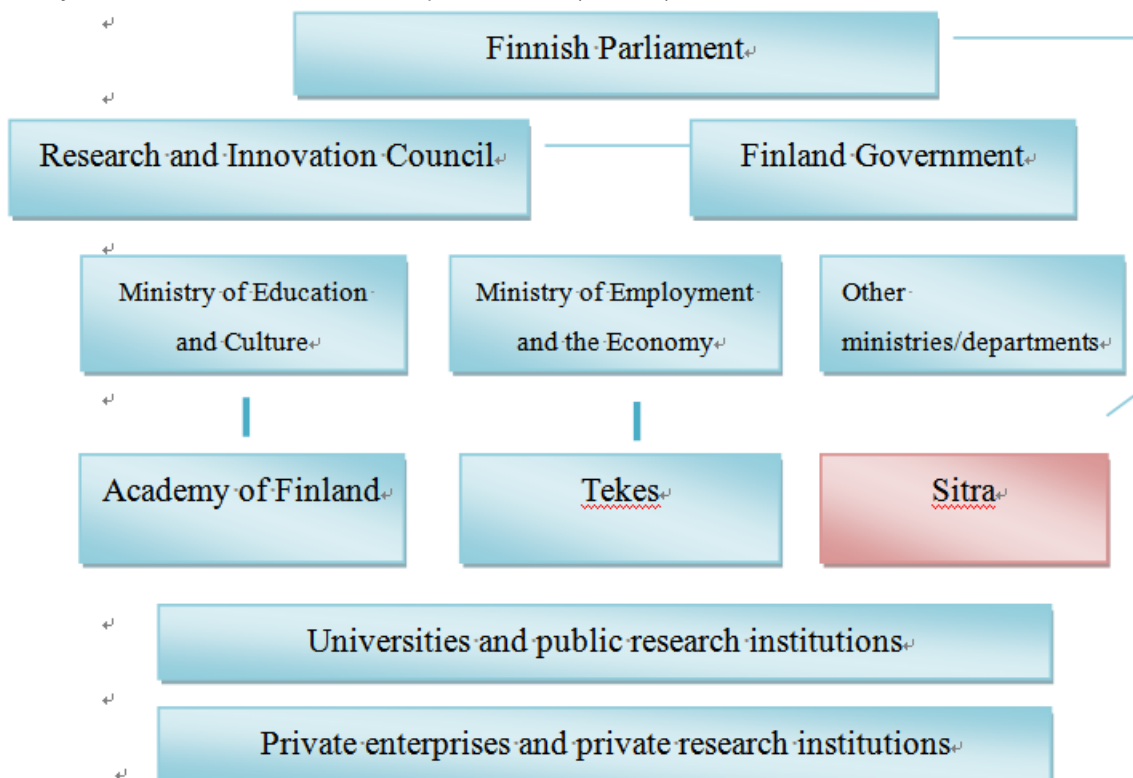
Fig. 1 Phased Efforts of Resources Invested in R&D by Public Sector

(2) Two Sided Role Played by Sitra in Boosting of Finnish Innovation Policies

Sitra has a very special position in Finland’s national innovation policies, as it not only helps successful implementation of the innovation policies but also acts an intermediary among the relevant entities. Sitra was founded in 1967 under supervision of the Bank of Finland before 1991, but was transformed into an independent foundation under the direction of the Finnish Parliament[4].

Though Sitra is a public foundation, its operation will not be intervened or restricted by the government. Sitra may initiate any innovation activities for its new organization or system, playing a role dedicated to funding technical R&D or promoting venture capital business. Meanwhile, Sitra also assumes some special function dedicated to decision-makers’ training and organizing decision-maker network to boost structural change. Therefore, Sitra may be identified as a special organization which may act flexibly and possess resources at the same time and, therefore, may initiate various innovation activities rapidly[5].

Sitra is authorized to boost the development of innovation activities in said flexible and characteristic manner in accordance with the Finland Innovation Fund Act (Laki Suomen itsenäisyyden juhlarahastosta). According to the Act, Finland established Sitra in 1967 and Sitra was under supervision of Bank of Finland (Article 1). Sitra was established in order to boost the stable growth of Finland’s economy via the national instrument’s support of R&D and education or other development instruments (Article 2). The policies which Sitra may adopt include loaning or funding, guarantee, marketable securities, participation in cooperative programs, partnership or equity investment (Article 3). If necessary, Sitra may collect the title of real estate or corporate shares (Article 7).



Data source: Finnish innovation system, Research.fi, <http://www.research.fi/en/innovationsystem.html> (last visited Mar. 15, 2013).

Fig. 2 Finnish Scientific Research Organization Chart

Sitra's innovation role has been evolved through two changes. Specifically, Sitra was primarily dedicated to funding technical R&D among the public sectors in Finland, and the funding model applied by Sitra prior to the changes initiated the technical R&D promotion by Tekes, which was established in 1983. The first change of Sitra took place in 1987. After that, Sitra turned to focus on the business development and venture capital invested in technology business and led the venture capital investment. Meanwhile, it became a partner of private investment funds and thereby boosted the growth of venture capital investments in Finland in 1990. In 2000, the second change of Sitra took place and Sitra's organization orientation was changed again. It achieved the new goal for structural change step by step by boosting the experimental social innovation activities. Sitra believed that it should play the role contributing to procedural change and reducing systematic obstacles, e.g., various organizational or institutional deadlocks[6].

Among the innovation policies boosted by the Finnish Government, the support of Start-Ups via governmental power has always been the most important one. Therefore, the Finnish Government is used to playing a positive role in the process of developing the venture capital investment market. In 1967, the Government established a venture capital company named Sponsor Oy with the support from Bank of Finland, and Sponsor Oy was privatized after 1983. Finland Government also established Kera Innovation Fund (now known as Finnvera[7]) in 1971, which was dedicated to boosting the booming of Start-Ups in Finland jointly with Finnish Industry Investment Ltd. ("FII") established by the Government in 1994, and Sitra, so as to make the "innovation" become the main development force of the country[8].

Sitra plays a very important role in the foundation and development of venture capital market in Finland and is critical to the Finnish Venture Capital Association established in 1990. After Bank of Finland was under supervision of Finnish Parliament in 1991, Sitra became on the most important venture capital investors. Now, a large portion of private venture capital funds are provided by Sitra[9]. Since Sitra launched the new strategic program in 2004, it has turned to apply smaller sized strategic programs when investing young innovation companies, some of which involved venture capital investment. The mapping of young innovation entrepreneurs and angel investors started as of 1996[10].

In addition to being an important innovation R&D promoter in Finland, Sitra is also an excellent organization which is financially self-sufficient and tends to gain profit no less than that to be generated by a private enterprise. As an organization subordinated to the Finnish Parliament immediately, all of Sitra's decisions are directly reported to the Parliament (public opinion). Chairman of Board, Board of Directors and supervisors of Sitra are all appointed by the Parliament directly[11]. Its working funds are generated from interest accruing from the Fund and investment income from the Fund, not tax revenue or budget prepared by the Government any longer. The total fund initially founded by Bank of Finland amounted to DEM100,000,000 (approximately EUR17,000,000), and was accumulated to DEM500,000,000 (approximately EUR84,000,000) from 1972 to 1992. After that, following the increase in market value, its nominal capital amounted to DEM1,400,000,000 (approximately EUR235,000,000) from 1993 to 2001. Obviously, Sitra generated high investment income. Until 2010, it has generated the investment income amounting to EUR697,000,000.

In fact, Sitra's concern about venture capital investment is identified as one of the important changes in Finland's national technical R&D polices after 1990[13]. Sitra is used to funding businesses in three manners, i.e., direct investment in domestic stock, investment in Finnish venture capital funds, and investment in international venture capital funds, primarily in four industries, technology, life science, regional cooperation and small-sized & medium-sized starts-up. Meanwhile, it also invests in venture capital funds for high-tech industries actively. In addition to innovation technology companies, technical service providers are also its invested subjects[14].

2. "Investment" Instrument Applied by Sitra to Boost Innovation Business

The Starts-Up funding activity conducted by Sitra is named PreSeed Program, including INTRO investors' mapping platform dedicated to mapping 450 angel investment funds and entrepreneurs, LIKSA engaged in working with Tekes to funding new companies no more than EUR40,000 for purchase of consultation services (a half thereof funded by Tekes, and the other half funded by Sitra in the form of loan convertible to shares), DILLI service[15] dedicated to providing entrepreneurs with professional sale consultation resources to integrate the innovation activity (product thereof) and the market to remedy the deficit in the new company's ability to sell[16].

The investment subjects are stated as following. Sitra has three investment subjects, namely, corporate investments, fund investments and project funding.

(1) Corporate investment

Sitra will not "fund" enterprises directly or provide the enterprises with services without consideration (small-sized and medium-sized enterprises are aided by other competent authorities), but invest in the businesses which are held able to develop positive effects to the society, e.g., health promotion, social problem solutions, utilization of energy and effective utilization of natural resources. Notwithstanding, in order to seek fair rate of return, Sitra is dedicated to making the investment (in various enterprises) by its professional management and technology, products or competitiveness of services, and ranging from EUR300,000 to EUR1,000,000 to acquire 10-30% of the ownership of the enterprises, namely equity investment or convertible funding. Sitra requires its investees to value corporate social responsibility and actively participate in social activities. It usually holds the shares from 4 years to 10 years, during which period it will participate the corporate operation actively (e.g., appointment of directors)[17].

(2) Fund investments

For fund investments[18], Sitra invests in more than 50 venture capital funds[19]. It invests in domestic venture capital fund market to promote the development of the market and help starts-up seek funding and create new business models, such as public-private partnerships. It invests in international venture capital funds to enhance the networking and solicit international funding, which may help Finnish enterprises access international trend information and adapt to the international market.

(3) Project funding

For project funding, Sitra provides the on-site information survey (supply of information and view critical to the program), analysis of

business activities (analysis of future challenges and opportunities) and research & drafting of strategies (collection and integration of professional information and talents to help decision making), and commissioning of the program (to test new operating model by commissioning to deal with the challenge from social changes). Notwithstanding, please note that Sitra does not invest in academic study programs, research papers or business R&D programs[20].

(4) DILLI Investment Model Integrated With Investment Absorption

A Start-Up usually will not lack technologies (usually, it starts business by virtue of some advanced technology) or foresighted philosophy when it is founded initially, while it often lacks the key to success, the marketing ability. Sitra DILLI is dedicated to providing the professional international marketing service to help start-ups gain profit successfully. Owing to the fact that start-ups are usually founded by R&D personnel or research-oriented technicians, who are not specialized in marketing and usually retains no sufficient fund to employ marketing professionals, DILLI is engaged in providing dedicated marketing talents. Now, it employs about 85 marketing professionals and seeks to become a start-up partner by investing technical services.

Notwithstanding, in light of the characteristics of Sitra's operation and profitability, some people indicate that it is more similar to a developer of an innovation system, rather than a neutral operator. Therefore, it is not unlikely to hinder some work development which might be less profitable (e.g., establishment of platform). Further, Sitra is used to developing some new investment projects or areas and then founding spin-off companies after developing the projects successfully. The way in which it operates seems to be non-compatible with the development of some industries which require permanent support from the public sector. The other issues, such as INTRO lacking transparency and Sitra's control over investment objectives likely to result in adverse choice, all arise from Sitra's consideration to its own investment opportunities and profit at the same time of mapping. Therefore, some people consider that it should be necessary to move forward toward a more transparent structure or a non-income-oriented funding structure[21]. Given this, the influence of Sitra's own income over upgrading of the national innovation ability when Sitra boosts start-ups to engage in innovation activities is always a concern remaining disputable in the Finnish innovation system.

3. Boosting of Balance in Regional Development and R&D Activities

In order to fulfill the objectives under Lisbon Treaty and to enable EU to become the most competitive region in the world, European Commission claims technical R&D as one of its main policies. Among other things, under the circumstance that the entire R&D competitiveness upgrading policy is always progressing sluggishly, Finland, a country with a population of 5,300,000, accounting for 1.1% of the population of 27 EU member states, was identified as the country with the No. 1 innovation R&D ability in the world by World Economic Forum in 2005. Therefore, the way in which it promotes innovation R&D policies catches the public eyes. Some studies also found that the close relationship between R&D and regional development policies of Finland resulted in the integration of regional policies and innovation policies, which were separated from each other initially, after 1990[22]. Finland has clearly defined the plan to exploit the domestic natural resources and human resources in a balanced and effective manner after World War II. At the very beginning, it expanded the balance of human resources to low-developed regions, in consideration of the geographical politics, but in turn, it achieved national balanced development by meeting the needs for a welfare society and mitigation of the rural-urban divide as time went by. The Finnish innovation policies which may resort to technical policies retroactively initially drove the R&D in the manners including upgrading of education degree, founding of Science and Technology Policy Council and Sitra, establishment of Academy of Finland (1970) and establishment of the technical policy scheme, et al.. Among other things, people saw the role played by Sitra in Finland's knowledge-intensive society policy again. From 1991 to 1995, the Finnish Government officially included the regional competitiveness into the important policies. The National Industrial Policy for Finland in 1993 adopted the strategy focusing on the development based on competitive strength in the regional industrial communities[23].

Also, some studies indicated that in consideration of Finland's poor financial and natural resources, its national innovation system should concentrate the resources on the R&D objectives which meet the requirements about scale and essence. Therefore, the "Social Innovation, Social and Economic Energy Re-building Learning Society" program boosted by Sitra as the primary promoter in 2002 defined the social innovation as "the reform and action plan to enhance the regulations of social functions (law and administration), politics and organizational structure", namely reform of the mentality and cultural ability via social structural changes that results in social economic changes ultimately. Notwithstanding, the productivity innovation activity still relies on the interaction between the enterprises and society. Irrelevant with the Finnish Government's powerful direction in technical R&D activities, in fact, more than two-thirds (69.1%) of the R&D investment was launched by private enterprises and even one-third launched by a single enterprise (i.e., Nokia) in Finland. At the very beginning of 2000, due to the impact of globalization to Finland's innovation and regional policies, a lot of R&D activities were emigrated to the territories outside Finland[24]. Multiple disadvantageous factors initiated the launch of national resources to R&D again. The most successful example about the integration of regional and innovation policies in Finland is the Centres of Expertise Programme (CEP) boosted by it as of 1990. Until 1994, there have been 22 centres of expertise distributed throughout Finland. The centres were dedicated to integrating local universities, research institutions and enterprise for co-growth. The program to be implemented from 2007 to 2013 planned 21 centres of expertise (13 groups), aiming to promote the corporate sectors' cooperation and innovation activities. CEP integrated local, regional and national resources and then focused on the businesses designated to be developed[25].

[1] Sitra, <http://www.sitra.fi/en> (last visited Mar. 10, 2013).

[2] Jari Hyvärinen & Anna-Maija Rautiainen, *Measuring additionality and systemic impacts of public research and development funding – the case of TEKES*, FINLAND, RESEARCH EVALUATION, 16(3), 205, 208 (2007).

[3] *id.* at 206-214.

[4] Charles Edquist, Tterttu Luukkonen & Markku Sotarauta, *Broad-Based Innovation Policy*, in EVALUATION OF THE FINNISH NATIONAL INNOVATION SYSTEM – FULL REPORT 11, 25 (Reinhilde Veugelers et al. eds., 2009).

- [5] *id.*
- [6] *id.*
- [7] Finnvera is a company specialized in funding Start-Ups, and its business lines include loaning, guarantee, venture capital investment and export credit guarantee, etc. It is a state-run enterprise and Export Credit Agency (ECA) in Finland. Finnvera, <http://annualreport2012.finnvera.fi/en/about-finnvera/finnvera-in-brief/> (last visited Mar. 10, 2013).
- [8] Markku Maula, Gordon Murray & Mikko Jääskeläinen, MINISTRY OF TRADE AND INDUSTRY, *Public Financing of Young Innovation Companies in Finland* 32 (2006).
- [9] *id.* at 33.
- [10] *id.* at 41.
- [11] Sitra, <http://www.sitra.fi/en> (last visited Mar. 10, 2013).
- [12] Sitra, <http://www.sitra.fi/en> (last visited Mar. 10, 2013).
- [13] The other two were engaged in boosting the regional R&D center and industrial-academy cooperative center programs. Please see Gabriela von Blankenfeld-Enkvist, Malin Brännback, Riitta Söderlund & Marin Petrov, ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT [OECD], *OECD Case Study on Innovation: The Finnish Biotechnology Innovation System* 15 (2004).
- [14] *id.* at 20.
- [15] DIILI service provides sales expertise for SMEs, Sitra, <http://www.sitra.fi/en/articles/2005/diili-service-provides-sales-expertise-smes-0> (last visited Mar. 10, 2013).
- [16] Maula, Murray & Jääskeläinen, *supra* note 8 at 41-42.
- [17] Corporate investments, Sitra, <http://www.sitra.fi/en/corporate-investments> (last visited Mar. 10, 2013).
- [18] Fund investments, Sitra, <http://www.sitra.fi/en/fund-investments> (last visited Mar. 10, 2013).
- [19] The venture capital funds referred to herein mean the pooled investment made by the owners of venture capital, while whether it exists in the form of fund or others is not discussed herein.
- [20] Project funding, Sitra, <http://www.sitra.fi/en/project-funding> (last visited Mar. 10, 2013).
- [21] Maula, Murray & Jääskeläinen, *supra* note 8 at 42.
- [22] Jussi S. Jauhiainen, *Regional and Innovation Policies in Finland – Towards Convergence and/or Mismatch?* REGIONAL STUDIES, 42(7), 1031, 1032-1033 (2008).
- [23] *id.* at 1036.
- [24] *id.* at 1038.
- [25] *id.* at 1038-1039.

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