

## **Business Plan FY2019**

### 1. Recent situations and new direction

The Institute for Future Engineering (IFENG) believes that, after its 48-year activities, it is now time to conceive a new step to anticipate the rapid changes of the world,

IFENG achieved a business surplus in the fiscal 2013 as a result of management reconstruction efforts following the organizational reform in the fiscal 2011, including restructuring of the activities and enhancement in the research management after its qualification as a public-interest corporation in 2013. The financial situation of the institute has since been stable, though with some fluctuations. IFENG's position in the GGTTI think tank ranking in the science and technology area has risen to the fourth place in 2017 and 2018, up from the eighth in 2012-2013, the sixth in 2014, and the fifth in 2015-16.

This enabled IFENG, from the fiscal 2015 on, to shift its target from management issues back to the mission proper to a think tank and its enhancement. Activities in the fiscal 2019 will be in line with this, along with continuation of the Independent Research programs started in the fiscal 2017 including expansion of research teams and a program for strengthening the manpower and training of the recently recruited young researchers.

IFENG's history and feature have been described as follows:

IFENG, one of the first-generation think tanks in Japan, was created in the period when the country was facing new and universal problems of environmental pollution and limits in resources and energy. "Soft science", or science of political decision making, was proposed 46 years ago as a field to study complex and interdisciplinary problems concerning social and political issues, involving interactions of humans, society, nature and technology. The activities of IFENG, a nonprofit organization, have been focused exactly on soft science, particularly on the fields of science and technology as well as research and development, which was a unique feature in Japan.

The institute has thus developed original methodologies for analysis of social trends, identification of essential issues in society, and development of comprehensive strategy to settle them, as well as conception, implementation and evaluation of relevant policies. These methodologies have proven to be effective in application to policy issues and socioeconomic problems.

IFENG has recently been extending its activities to include the "mode 3" policy studies, i.e. future technologies involving human and social factors as essential elements. Studies in these subjects, deeply rooted in the human nature, must be based on insights in epistemology and theory of knowledge. Specific subjects relevant to IFENG's independent studies include next-generation AI, brain science, genome editing, synthetic biology and behavioral psychology.

The purpose of the Institute is summarized as follows:

Our research activities start from gaining insights into the developing tendency of science and technology and into presages of socioeconomic changes in order to predict a likely future and its inherent problems. The goal is to conceive, design and propose measures for solving those problems by analyzing relevant data with "engineering" methodologies, thus contributing to advances in science and technology as well as socioeconomic development at large. Subjects addressed include desirable social systems, policy making, identification of long-term and basic tasks along with development of systems to address them, preferable product development and service systems, research and development systems, and implementation of technologies,

More specifically, our research tasks and ancillary works are divided into the following units: Research Center for Policy Analysis, Research Center for Information and Telecommunication, Research Center for Social Issues, and Programs Related to the Great East Japan Earthquake. Studies are performed by platforms formed by internal

researchers, which are networked with external experts. Results are released in forms sharable with the general public as far as possible, for example through social media or on websites, in addition to conferences, lectures and publications. The external networks include Japan Society for Future Research, Japan Society for Research Policy and Innovation Management, and Society for Integrative Medicine Japan, which are closely related to our activities, as well as a number of domestic and overseas specialist groups that have been formed in the course of our technology forecast and other activities.

Specific activities are classified into three categories: Commissioned Investigations, Independent Investigations, and Interactive Research. Within each category, balance is controlled between Nonprofit Activities for the general public and For-Profit Activities for specific parties.

Based on our history and general guidelines for activities described above, IFENG will continue and promote the goals for FY2019. Particularly, the Interactive Research, relatively inactive so far, will be enhanced in order to "create wisdom for society". Furthermore, nonprofit Independent Investigations will further be expanded in FY2019. We are well aware that the definition of what is "for" society depends on the view on social justice. We are starting from building the fundament for developing wisdom based on IFENG's mission and the social responsibility of our research staff. For this purpose, we intend to build up a competent body with a variety of expertise and thoroughgoing thought, thus consolidating our knowledge base and diversify our activities, particularly through fostering recently recruited personnel.

## 2. Business plans for individual categories

### (1) Nonprofit Commissioned Investigations (N1)

IFENG performs investigations commissioned by governmental agencies, local authorities, foundations and other organizations. The results are to be shared with the general public including the originators.

"Commission" in this category, usually obtained through open application, may mean either contract or funding. While a contracted investigation is carried out in accordance with the specifications by the commissioning party defining the general framework of the project as well as expected results, a funded investigation allows more discretion of the applicant.

Investigation projects are financed either by the commissioning parties or foundations: contracted investigations are compensated for principally by government agencies, local authorities, research institutions, or incorporated foundations, while funded investigations rely on foundations for research promotion.

Activities in think tanks require a great variety of detailed leading-edge knowledge in different disciplines. No single organization could cover this entirely with its internal manpower even for a project fit for its background. We adopt, therefore, a platform-network system where our staff works on the platform for the core activities in a project while peripheral knowledge is provided by networked teams of external specialists. Even non-skilled works such as questionnaire counting may be outsourced to specialized contractors on economic ground.

## (2) Nonprofit Independent Investigations (N2)

IFENG also performs self-financed Independent Investigations on subjects attracting much public attention. The results are open to public. The Special Earthquake-Related Project started in FY2011 belongs to this category. Here the process of emergence and recognition of the social impacts of the quake was compared with that of social response in terms of time series, in order to explore appropriate social systems requisite for short- and mid-term response measures.

This category has been enhanced from FY2016 on: in addition to original works by our staff, a program for training young researchers started in that year, along with efforts to secure financial resources for the program. Two seminars were opened in FY2017: "Thinking Methodology" for enhancement of the basic techniques for think tank activities,

and "Concept of Next-Generation Artificial Intelligence" as an embodiment of "creation of wisdom for society". Similar activities will be continued or expanded in FY2018.

### (3) Nonprofit Interactive Research (N3)

Interactive Research aims at sharing the results with society and, for new problems suggested by the results, collaborating with the general public for deepening insights into them or finding solutions through iterative dialogues.

Activities in this category are thus characterized by involvement of the general public in the process towards better understanding of problems by sharing research results and tasks suggested by them, along with continued dialogues, on open platforms such as digital space, public meetings or printed publications. The "Forum" and "Insight" sections in our website typically provide such opportunities for dialogue. While the Forum is intended for discussion with the public, the Insight is the channel for presenting IFENG's research results as questions to society and inviting discussions by registered external specialists. The progress of discussions is made accessible to the public by timely disclosure on the website. The "Publication" section of the site provides IFENG's publications in the past as the basis for discussion, complemented by public lectures and printed publications.

Following the enhancement plan started in FY2015, this category will further be expanded to a more substantial part of the institute this year, for example by combination with other Nonprofit Investigation projects, along with securing financial resources and establishing appropriate organizational measures.

### (4) For-Profit Commissioned Investigations (F1)

This category consists of investigations performed for a specific party, mostly business companies and other organizations that order the investigations. Projects assigned through open application may also be categorized here if the outcome is unlikely to be shared publicly.

(5) For-Profit Independent Investigations (F2)

An example of Independent Investigations performed for specific parties is consulting service based on IFENG's knowledge and findings obtained in the past think tank activities.

(6) For-Profit Interactive Research (F3)

This category includes lectures, training courses and publications based on our research results for specific target groups.