

## Business Report FY2018

### 1. General

During 48 years since its establishment, the Institute for Future Engineering (IFENG), a first-generation think tank in Japan, has continuously been trying to gain an insight into the developing tendency of science and technology and into socioeconomic changes, to identify issues and their solutions for a desirable future on the basis of engineering methodologies, and to propose ways how science and technology solve possible problems. The fiscal 2018 concludes the sixth year of IFENG as a public-interest corporation. Efforts to achieve a capability commensurate with the status of the institute have resulted in 71 researchers (mostly part-timers) compared with the initial 34. Synergy of the newly hired part-timers with different backgrounds with the full-time researchers who have got accustomed to the new management system has led to a variety of contracted works and has expanded the business to include independent nonprofit projects. Meanwhile, IFENG obtained for 2018 the fourth place in the GGTTI think tank ranking in the science and technology area, following the eighth in 2012 and 2013, the sixth in 2014, the fifth in 2015 and 2016, and fourth in 2017. However, the financial position of IFENG has not been sufficiently improved: the immediate priorities for the institute are expansion and stabilization of the business and, particularly, improvement and effective utilization of skills of the expanded part-time research staff.

IFENG's article of incorporations define its activities in three categories<sup>1)</sup>: investigations in the area of future engineering, interaction with the public related to future engineering (publicity, services, etc.), and international exchange related to future engineering.

The activities of a public-interest corporation are to be classified into nonprofit (N) and for-profit (F) ones. The former is intended for the general public, while the latter is for specific parties.

### 2. Business-related activities

For explanations in this section, the N and P activities are further divided into three each:

(1) contracted investigations (investigations driven by commissions or subventions by other parties), (2) independent investigations (investigations relying on its own fund), and (3) interactive research<sup>2)</sup>. Individual details are presented below. Activities related to international exchange are described in the last paragraph without differentiating N and P categories.

A total of 55 projects were implemented in FY2018, including four continued from the preceding year and four to be continued in the next year. Fifty-one were thus concluded within the fiscal year and considered in the account settlement.

The current contract-based projects include 24 for N1, 25 for P1 and 2 for P2. The project names are specified in the tables in the subsequent sections.

#### (1) Contracted investigations

Of the 49 F1 and P1 projects completed in FY2018, two were supported by the private sector (Watanabe Memorial Foundation for the Advancement of New Technology), seven were subsidized by the Grants-in-Aid for Scientific Research ("Kakenhi", Japan Society for the Promotion of Science) (including joint investigations), and one by the Ministry of Foreign Affairs; the remaining 39 were commissioned projects<sup>3)</sup>.

The commissions came from eight governmental agencies for 13 projects (compared with 11 in the preceding year, the same hereinafter), eight government-run institutions for 12 (6), two universities for 3 (4), and nine business companies for 11 (10). The commissioning government agencies included the Cabinet Office; the Ministry of Education, Culture, Sports, Science and Technology; the Agency for Cultural Affairs; the Ministry of Health, Labor and Welfare; the Ministry of Agriculture, Forestry and Fisheries; the Ministry of Economy, Trade and Industry; the Ministry of Land, Infrastructure, Transport and Tourism; and the Ministry of Defense. In addition, National Research and Development Agencies, Independent Administrative Agencies and universities, including the Japan Science Technology Agency and Kyoto University, have

commissioned research works to IFENG. The four projects to be continued to the next year consist of a subventionary project and three commissioned ones.

In terms of the business categories, 24 projects belong to nonprofit activities and 25 for-profit activities, as shown in the following table.

## (2) Independent investigations

### (i) Independent nonprofit investigations (N2)

The self-financed nonprofit independent investigations carried out in 2018 included preparatory works for supporting contracted projects (original concepts) and studies to expand researchers' knowledge.

In fiscal 2018, the two independent investigations continued from the preceding year received subvention by a foundation, which enabled conversion of the projects to subventionary investigations.

### (ii) Independent for-profit investigations (F2)

The independent for-profit investigations in 2018 included two projects (consulting) to support business companies' activities related to science and technology based on IFENG's existing knowledge.

## (3) Interaction with the public

### (i) Nonprofit interaction with the public (N3)

The activities below started in 2015 to feedback the research outcome of IFENG to wide public:

(a) In an SNS-based publicity program, IFENG's official Twitter account was established along with accounts for individual projects. It is intended to familiarize the public with the research outcome of the institute and to encourage their access to essential issues by inviting the followers of the accounts to visit the official IFENG website, particularly the "Insight" and "Forum" sections. Experiences obtained in the projects implemented in FY2015-16 were helpful. This activity has been continued in 2018.

(b) Publication of Annual Report 2018 and expansion of the English pages in IFENG's website were realized along with individual researchers' publication of their research results and presentation of their views in a number of printed media, conferences, meetings and seminars.

(ii) For-profit interaction with the public (F3)

Activities in this category included support of Aviation Forum and publishing (distribution of the MEXT Report of the 9th Science and Technology Foresight).

(4) International exchange

A total of 17 researchers visited the US, Italy, Portugal, Sweden, Singapore, Vietnam, Cuba, China, Hong Kong, Taiwan, Latvia and Estonia for their investigations.

Notes

1) Article 4.

2) These categories are hereinafter represented as N1, N2, ..., P1, P2, etc.

3) Investigations supported by subsidization from subventionary funds are called "subventionary"; those based on other financial sources are "commissioned".