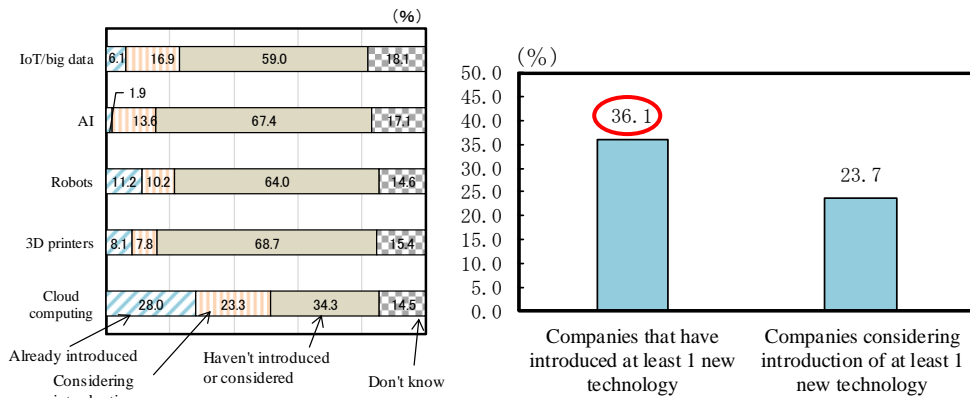


Chapter 3 Responses to Technological Innovation and its Impacts

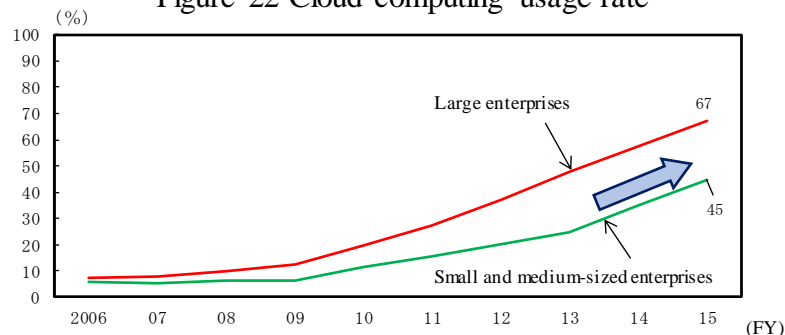
- According to the Cabinet Office's survey,
 - 36% of companies have introduced at least one of the new technologies among IoT/big data, AI, robots, 3D printers, or cloud computing.
 - 24% of companies are considering doing so.
- Cloud computing has spread rapidly in recent years.
 - It is also introduced by small and medium-sized enterprises due to its advantages such as short period required for introduction and low initial costs.
- Using new technologies has brought positive results.
 - Nearly half of companies that introduced new technologies realize that they have brought positive results in terms of “development of new products” and “acquisition of new customers.”

Figure 21 Current status of using new technologies



(Note) Based on the Survey on Companies' Attitude toward Use of New Technologies and Human Capital to Improve Productivity, the Cabinet Office.

Figure 22 Cloud computing usage rate



(Notes) 1. Based on the Actual Conditions Survey of Information Technology, the Ministry of Economy, Trade and Industry.
2. Partially includes companies considering introduction.

Figure 23 Results of using new technologies



(Note) Based on the Survey on Companies' Attitude toward Use of New Technologies and Human Capital to Improve Productivity, the Cabinet Office.

- The following effects of the introduction of new technologies on productivity are expected.
 - Technologies that less companies have introduced at present are expected to have bigger effects: AI, IoT/big data, 3D printers, robots, and cloud computing (ordered from larger to smaller effects).
- Companies that are actively using new technologies has the following characteristics.
 - (1) Company age is young
 - (2) High decentralization of authority regarding decision-making
 - (3) ICT chief is highly involved in management
 - (4) Willing to conduct open innovation with companies in other industries

Figure 24 Effects on increasing productivity by type of new technology

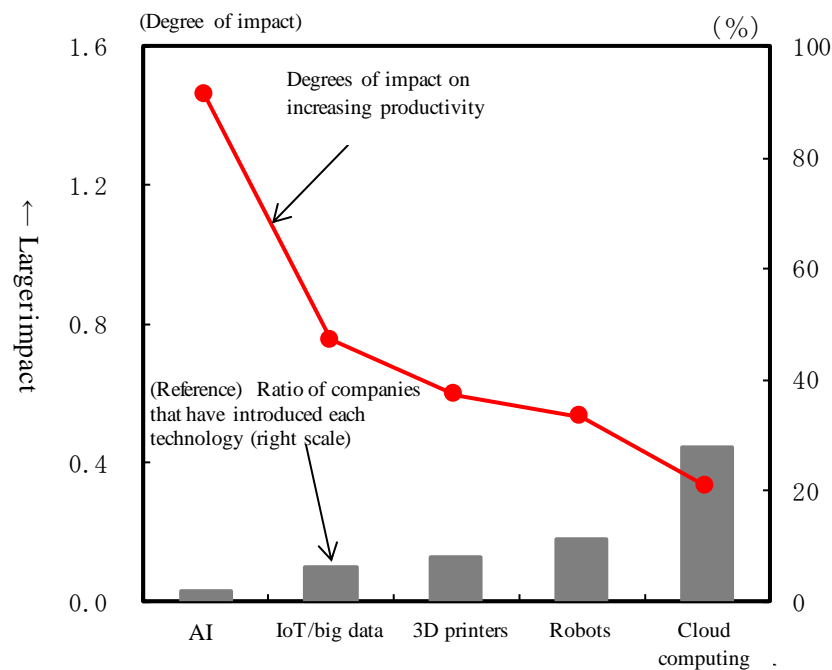
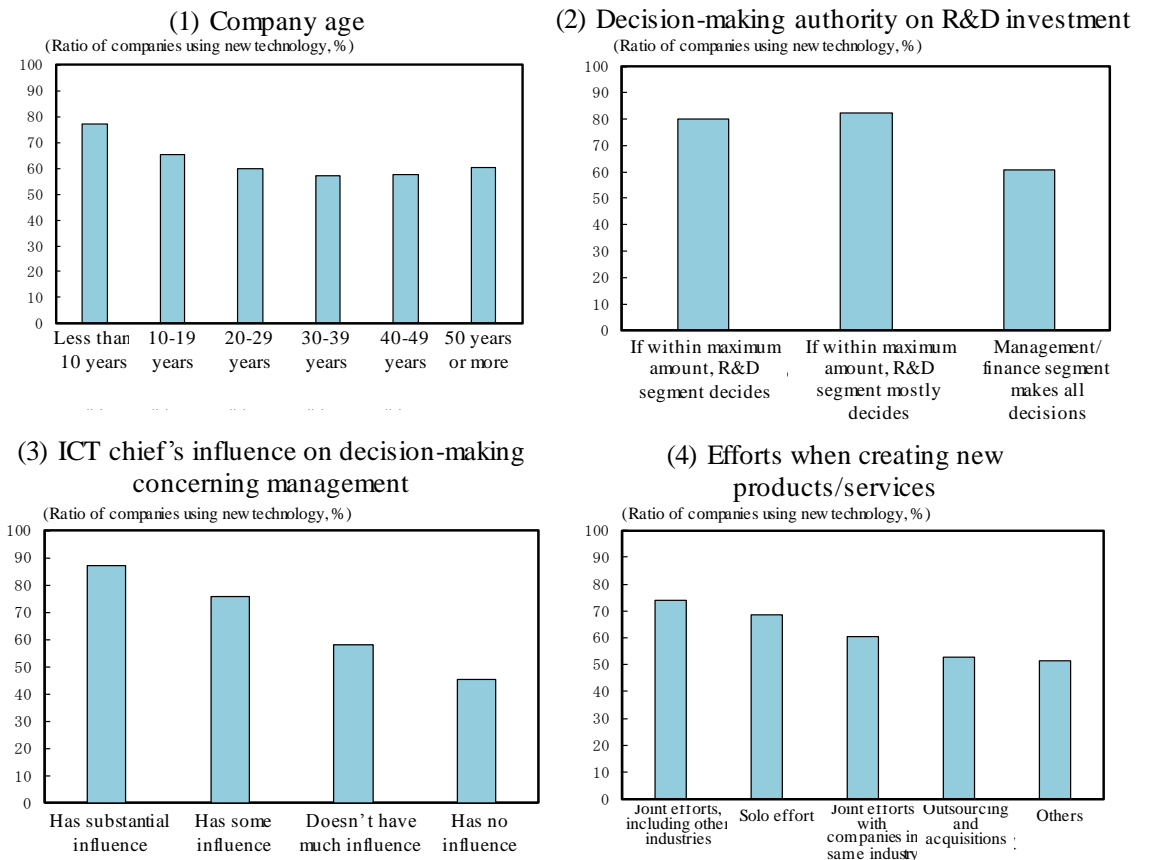


Figure 25 Characteristics of companies actively using new technologies

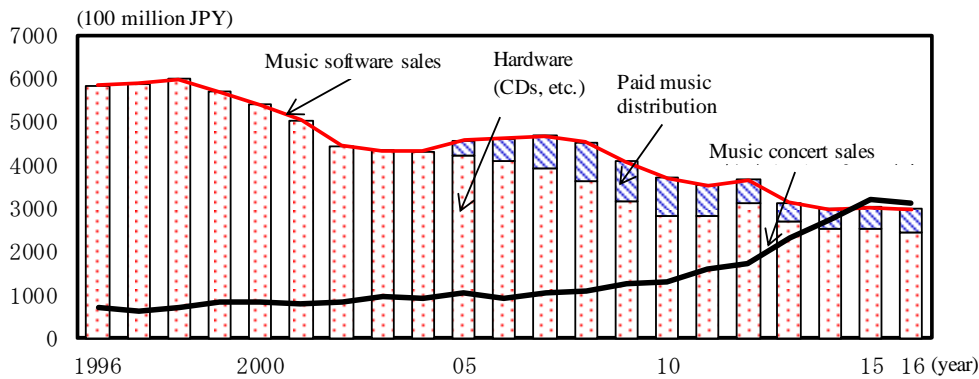


(Note) Based on the Survey on Companies' Attitude toward Use of New Technologies and Human Capital to Improve Productivity, the Cabinet Office.

(Notes) 1. Based on the Survey on Companies' Attitude toward Use of New Technologies and Human Capital to Improve Productivity, the Cabinet Office.
 2. Ratio of companies using new technology is the ratio of companies that have introduced or are considering introducing at least one new technology.

- Advances in technological innovation have the following effects on the economy and society.
 - Demand: There are some cases where existed demands are replaced by free or low-priced services due to advances in the digital economy, but at the same time, new demands are created for related services (for example, music industry).
 - Work style: Ratio of companies that have concerns and issues regarding telework is low among companies that have already introduced it, while that is high among companies that have not introduced it.
 - Employment and income: Companies actively using new technologies such as AI and IoT tend to increase employment and wages (Note that the effects may be different depending on workers' skills and occupations).

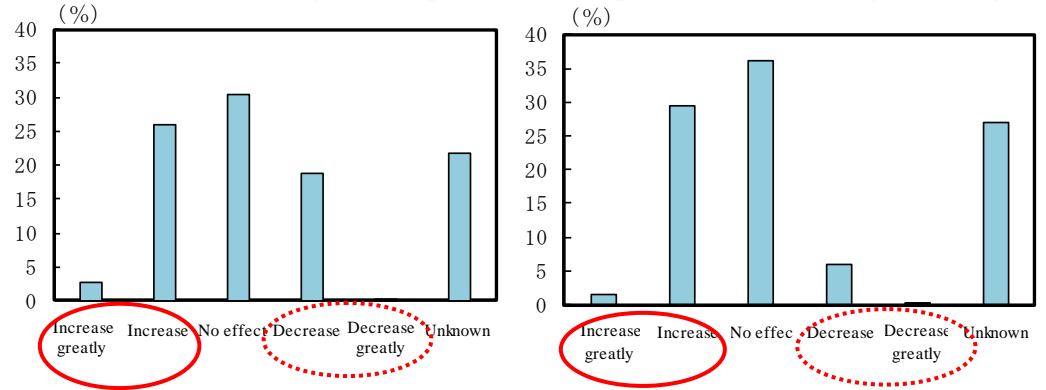
Figure 26 Change in the music-related businesses



(Note) Based on the Recording Industry Association of Japan; and the Concert and Live Entertainment Market Survey, the All Japan Concert & Live Entertainment Promoters Conference.

Figure 28 Views of companies using new technologies

(1) Impacts of new technologies on employment (2) Impacts of new technologies on wages



(3) Reasons for great increase or increase in wages

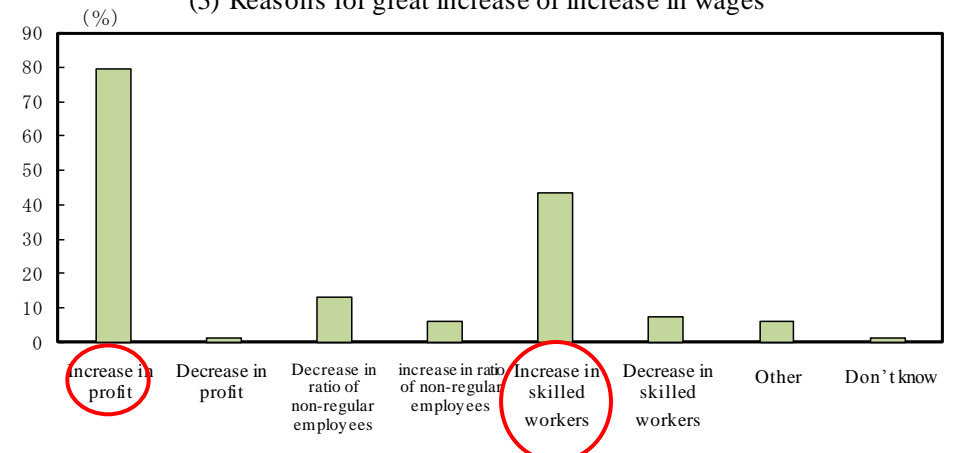
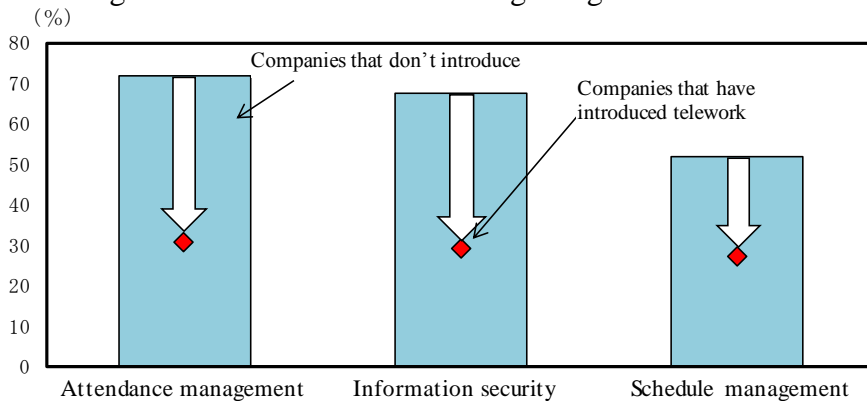


Figure 27 Concerns and issues regarding telework



(Note) Based on the Fiscal 2014 Telework Model Demonstration Project, a commissioned project of the Ministry of Health, Labour and Welfare.

(Notes) 1. Based on the Survey on Companies' Attitude toward Use of New Technologies and Human Capital to Improve Productivity, the Cabinet Office.
2. Companies using new technology are companies that have introduced or are considering introducing new technology.