Digital Workstyle Innovation to Improve Quality of Work

To make progress on work style reform requires changes to corporate culture and customs as well as to working practices. This makes it essential to uncover the actual situation and identify the challenges where digital technology proves highly effective. Among the methods that are coming to be recognized as useful for this purpose are eye glasses or name tags that serve as wearable sensors collecting data on working practices, and smart speakers or chatbots for making working practices more efficient. The true value of using digital technology lies not just in the quantitative transformation of working practices but also in the qualitative changes they bring. Such qualitative changes are believed to play a major part in providing many business people with a high level of satisfaction in their work and a shared sense of wellbeing with those around them. This article describes how digital technologies can contribute to working practices that improve quality.

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1. Introduction

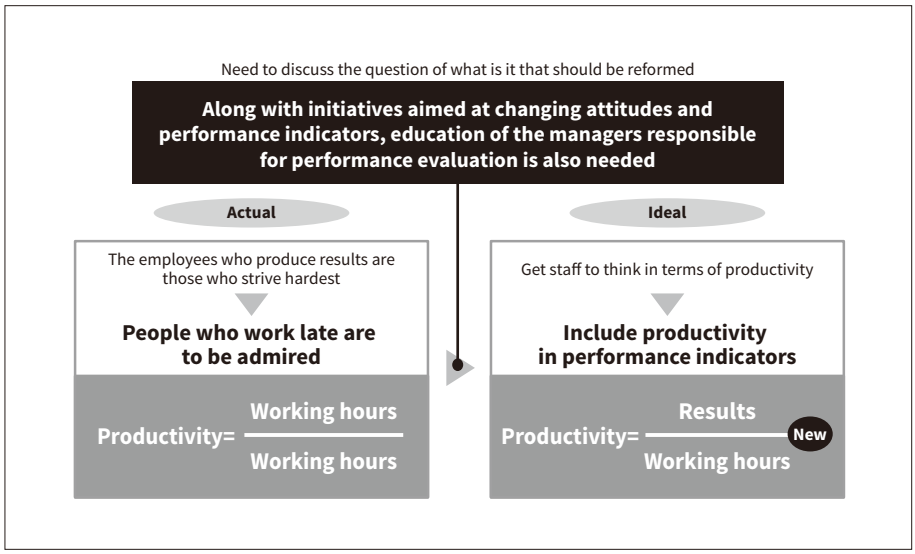
The use of digital technology makes possible sophisticated analyses and optimizations of a sort that were not possible in the past. Combined with other new technologies such as robotic process automation (RPA), they can also be used to automate tasks that previously relied on particular individuals. Companies are using this digitalization as an opportunity to proceed with work style reforms. However, progress cannot be achieved on work style reform merely by adopting IT tools. Rather, reform needs to start with changes in corporate culture and customs and in staff attitudes. The deciding factor in whether companies can make a success of digital workstyle innovation lies in their ability to abandon outdated practices and adopt new ways of doing business.

2. Work Style Reform Starts with Changing How Things are Done

While the term "work style reform" typically refers to measures for limiting long working hours and raising productivity, what does this term "productivity" actually mean? Japanese companies still have an ingrained culture of placing a high value on staff who work late into the night. This means that, when techniques such as RPA are adopted to get work done faster and more efficiently, the time freed up by these efficiencies will likely be used to get started on other work. The main reason for this is that, at most Japanese companies, wages are paid based on time spent at work. To change how work is done, it is first necessary to change this practice. Along with changing performance indicators to take account of productivity, namely the results produced in the time worked, it is also important to

Figure 1—What Work Style Reform Should be Reforming

The adoption of performance indicators that take account of productivity and education of those responsible for performance evaluation have an important part to play in turning around the tendency to place a high value on working long hours.



make employees more aware of productivity and to educate the managers responsible for performance evaluation (see **Figure 1**).

Moreover, changing practices also requires changing the assumptions that led to those practices being adopted in the first place. For example, many companies want to increase their proportion of female employees as a way to deal with a falling working age population or to help foster diversity. Unfortunately, when the default working practices take it for granted that staff stationed at customer offices will work with them from morning to night in accordance with what the customer wants, it is difficult to also accommodate time off for school activities or to drop children off at day care. Even if doubling the number of women in management is set as a key performance indicator (KPI), the reality is that few women will put themselves forward if it is built into the organization that staff recognition is dependent on their working well into the night. Those responsible for work style reform need to bear in mind that it is not a question of simply increasing the proportion of women or people working short hours, and that what is needed first of all is to transform a corporate culture in which such working practices are firmly embedded.

The first step in work style reform is the adoption of digital methods for in-house activities that were done using paper in the past. Being bound up in paperwork limits time and space, preventing the adoption of new working practices. If companies are to make the most of a switch to digital methods, it is meaningless simply to replace paper with digital data. Rather, what is needed is to get rid of old practices and instead work in ways that suit digitalization. For example, whereas wide-frame formats have long been the default in television and movies, the millennial generation with its fondness for Snapchat* and other social media are increasingly recording and viewing video on mobile phones in portrait format (where the image is higher than it is wide). The formatting of manga for viewing on mobile phones has also been changing recently so that, rather than replicating the paper medium in digital form, it instead uses formats that suit the device on which it is displayed, such as making less use of text and using color frames that scroll vertically. The same applies to reports formatted for printing out on A3 paper. Rather than simply converting these to PDF and displaying on a tablet, the reports risk being ignored due to being too cumbersome to use unless they are re-designed to suit the devices on which they are to be displayed.

2. 1
Visualization Requirements for Work Style Reform

Visualization and measurement are essential if digital technologies are to be used to transform working practices. The only way to measure benefits is to first expose the current situation (visualization) in order to define what is to be changed and how to go about it, and then to perform measurements

* Snapchat is a trademark or registered trademark of Snap, Inc.

before and after reform implementation. Wearable devices are one of the typical methods used for this purpose. Hitachi Consulting Co., Ltd. has used a variety of different wearable devices, including wristbands, nametags, and eye glasses to measure the extent to which staff concentrate on their work. As more data is collected, it becomes possible to analyze the reasons why concentration is higher or lower at different times. Among the products developed by Hitachi are tools for measuring health from things like tone of voice and electrocardiograms and ways of measuring activity levels. Advances in technology mean that it is now comparatively easy to collect biometric data from individuals that would have been difficult to obtain even a few years ago. When combined with activity data on what work the person has engaged in during the course of a day, this biometric data can potentially shed light on working practices.

Furthermore, it is understood that different people work in different ways, finding it easier to work at different times of the day, and with some preferring to work intensively on their own whereas others prefer to get things done while communicating with others. If things like this can be exposed to view and analyzed, it should be possible to devise measures whereby people can lift their productivity in their own ways, and also to assess how well these work. Different ways of configuring offices can be considered, such as whether tiredness is reduced by having shared work areas well-stocked with plants to give them a café feel or whether interaction is fostered to achieve a more vibrant workplace by alternating desks in the office instead of lining them up in orderly fashion like a checkerboard grid, for example, and the benefits of each can be assessed. In this way, work style reform should be able to progress step by step through an iterative process of visualization and measurement.

A particularly difficult challenge is how to sustain motivation, a parameter that is difficult to represent. The performance review is one factor with a significant influence on motivation. Hitachi Consulting conducts biannual performance reviews in the early and latter halves of the business year as well as reviews of projects after completion. However, it is questionable whether the frequency and timing of feedback from assessments conducted a few times a year are appropriate for the millennial generation accustomed to social networking services (SNSs) given how receiving "likes" serves as motivation for this group. It is possible that motivation would be better sustained by appropriate feedback that relates to recent activities or consulting them about their health, such as offering praise for a recent project or commenting on their looking tired and asking if they are feeling well.

2. 2
Technologies for Improving Quality of Work

Other useful technologies include automation tools such as RPA. While the scope of automation is currently limited to routine tasks, as shown in **Figure 2**,

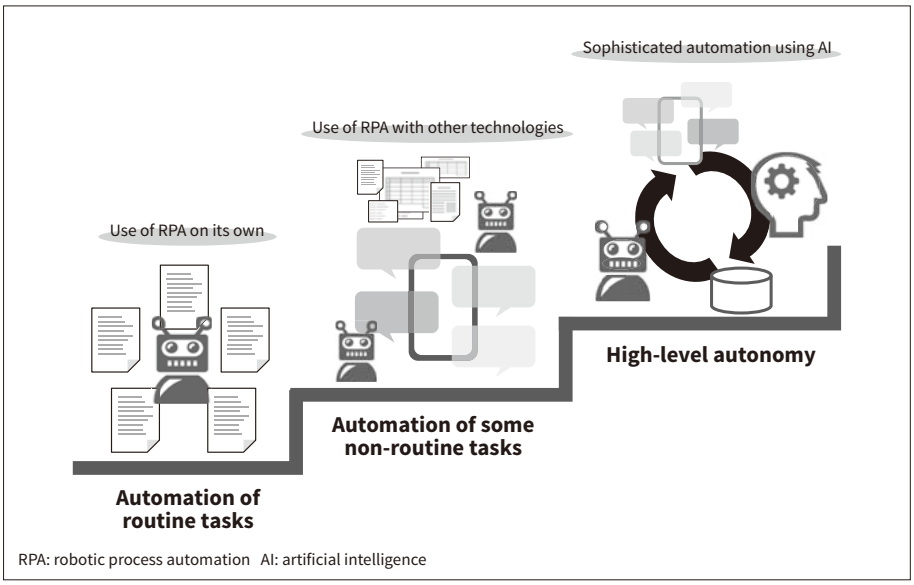


Figure 2 — Technological Approaches to Work Style Reform Using Automation

The automation of work can be split into three stages: automation of routine tasks, automation of some non-routine tasks, and high-level autonomy.

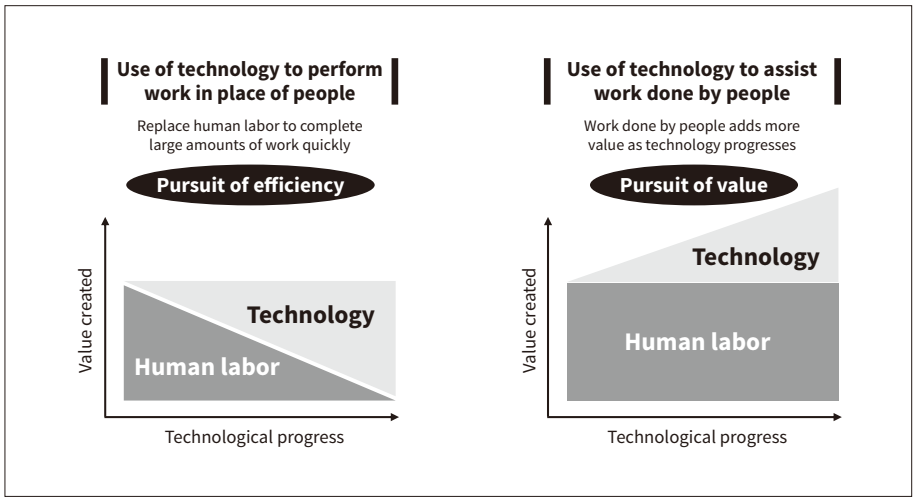


Figure 3 — Use of Technology for Productivity Improvement
Rather than replacing people with AI or robots, this involves having technology assist people to improve the quality of the work they do.

tools only need to get a little bit smarter to enable the automation of some non-routine tasks. Equipping tools with artificial intelligence (AI) expands this scope further to the stage of high-level autonomy, enabling the automation of tasks that require human judgment. In the case of recruitment, for example, it is possible to automate the collection job information from competing companies, management of the interview process, and reporting. Another example is searching personnel databases for people who fit the desired profile. By analyzing data for people who were accepted or rejected in the past, it becomes possible to learn about the sort of people who do well at the company by showing the characteristics of applicants and, as a result, what sort of people are being hired. The question that then arises when the scope of automation is expanded in this way is what to do about the people who used to do this work, and where should they go? While it may resolve the problem of labor shortages, will the increasing intelligence of AI and robots cut back on and eliminate work done by people? This is something that public rumor suspects is already underway, with the use of call center chatbots being an example of just this happening. It may be that people are replaced by chatbots in the near future enabling opening hours to be expanded to 24 hours a day.

On the other hand, there is also the potential for using technology to assist people, such that the technology increases the value added by human work (see **Figure 3**). One such way of using technology might be to display on-site work instructions to maintenance staff through sensors worn as eye glasses, or the use of augmented reality to show them where repairs are needed. Such technology could process large amounts of information for the user and input it on the spot. Another possibility would be to install smart speakers at product showrooms to profile or otherwise assess customers while communicating with them, using this as a way to offer immediate product recommendations and improve customer satisfaction. If technology can be used in ways that enhance quality rather than reducing the volume of work done by people, it will leave everyone better off, including both workers and those around them.

2. 3
World Transformed by Digitalization of Input

User interfaces are undergoing a major transformation away from the traditional means of digital input using keyboard and mouse. Examples include smart speakers like those referred to above or the smart displays touted as their successors (smart speakers that also incorporate a screen). Conventional keyboard entry is an analog process for digital input in which the fingers type in information composed in the brain. If instead digital processes are extended to encompass input mechanisms, it becomes possible to exchange information using speech or to combine chatbots with RPA to perform all sorts of different data entry work without a keyboard.

As part of recent work, Hitachi Consulting has been trialing its attendance chatbot. Past practice required staff to open up their personal computers

(PCs) and enter attendance details, but because consultants often spend whole days away from the office, the result was staff having to get out their PCs while riding on the Shinkansen or in some cases to come back into work just to punch the clock. In place of this, the attendance chatbot provides an easy and interactive way for staff to provide attendance details using their smartphones. Saying "good morning" causes the chatbot to reply with the time of starting work and punch in on the attendance system of the user's behalf. Likewise telling the chatbot that they are ready to go home at the end of the day returns a message that confirms the time of clocking off. As users can also make corrections by telling the chatbot it has made a mistake, the app has proved very popular among consultants who are frequently on the road. It seems likely that tools like this will rapidly become commonplace in the near future.

3. Conclusions

Rather than a poorly focused desire to change how work is done, what is important when undertaking work style reforms is to expose the current situation so that the challenges can be identified, to develop and then implement policies, and to measure the outcomes. Efficiency gains and automation do not usurp work done by people but improve the quality of that work. In the future, Hitachi intends to continue contributing to work style reforms that enhance work quality through consulting services that help companies revise their culture and working practices.

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Services & Digital Consulting Division, Hitachi Consulting Co., Ltd. *Current work and research:* Digital consulting services supporting the digital transformation of companies through IT technology and innovation.