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Case study**The impact of technology**

COMPUTER technology has changed the way that we work and led to an increased demand for skilled workers.

Mostly these changes are accompanied by flatter organisational structures, more autonomy for workers, and innovative HR practices. However, there are also examples of computerisation being associated with increased specialisation and much stricter procedures.

We examined how these and other changes in the division of labour — the way that a company assigns tasks to workers — can be explained in the context of computerisation; in particular, the two ways that computer technology can improve productivity:

- by supporting workers and enabling them to carry out their tasks faster; and
- by allowing more effective communication between workers as they co-ordinate tasks.

We found that both forms of increased productivity led to changes in the division of labour, but in different ways. In about 80 per cent of the firms examined, IT improved production efficiency by making it faster and/or cheaper. In the other 20 per cent, it mostly benefited communication, for example, through better access to and routing of shared information. In the first group, the effect on company organisation was a tendency towards generalisation. But where the gains from IT are due to a fall in communication costs, there is an increase in specialisation, while the skill level required of each worker decreases.

Our findings contrast with many of the theories around the value of innovation. These tend to argue that computerising firms can further improve productivity by emphasising teamwork and co-operation. But our approach suggests that computerisation reduces the time needed for production tasks but increases that needed for communication.

What does this mean? First, if the division of labour is kept constant, workers who gain most from computerisation will see relative demand for their work drop. Second, when certain workers gain more in terms of productivity than others, the division of labour will be adjusted to benefit from this advantage.

Adapted from The Division of Labour, Worker Organisation, and Technological Change, by Lex Borghans and Bas ter Weel, first published in The Economic Journal (Feb).

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