



English summary
of Fafo-rapport 2021:30

Skilled workers' contribution to innovation in Norwegian industry

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The goal of this report is to obtain more knowledge on the ways in which skilled workers contribute to innovation. The project objective has not been to measure whether skilled workers contribute to this end often or rarely, but to investigate *the ways in which* they do so. To investigate this we have undertaken a review of the research literature and case studies in eight Norwegian enterprises. In our case studies we most frequently see examples of how skilled workers participate in experience-based innovation, in other words incremental innovation processes that are based on existing technology and working methods. However, we can also see examples of how skilled workers help ease the implementation of innovations that are based on R&D. In the case studies, skilled workers contribute to innovation in various ways: they initiate innovation by offering proposals for changes to work processes; they participate in development and adaptation of new technological solutions; and they participate in workgroups that prepare for the introduction of new working methods. In some cases, they have most likely helped the enterprise introduce forms of production where the skilled worker holds considerable independent responsibility.

The selected enterprises are Borregaard, the Flatøy division of Framo, Gumpen Auto, Kongsberg Defence & Aerospace, Moelven Limtre, OneCo Technologies, Scandic Hotel Gardermoen and the Veidekke project at Ulven in Oslo.

We can find certain commonalities between the enterprises that succeed in involving skilled workers and apprentices in innovation activities. The enterprises are characterised by openness and dialogue between employees in different positions and with different training. Many of our case enterprises are large, such as Borregaard and Framo, with clear vocationally based organisational structures, without this serving as an obstacle to contact between different categories of employees. In other enterprises, such as OneCo Technologies, skilled workers, graduates from technical colleges and engineers work together, without any positions being reserved for employees with particular types of education and training. Irrespective of their formal structure, both types of enterprises have an informal culture that permits workers on the shop floor to approach the management for a chat. Good collaboration between skilled workers and personnel with higher education is key to innovation in the case enterprises where both these groups are present. Persons who have both a craft certificate and higher education can make a particular contribution to this.

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Some of the enterprises have a structure for working with improvements, which makes it easier to move from concept to implementation in the enterprise. This represents an innovation capacity that the enterprise can apply to achieve various types of improvements.

Formal social partnership plays a role for the improvement efforts in the cases associated with the manufacturing industry, but less so in the other cases. In the latter, social partnership is mostly associated with bargaining and physical working conditions, while in the manufacturing enterprises, social partnership provides an arena for discussing improvements.