

Toolbox for Analyzing Tacit Knowledge in Machining

How to map the tacit knowledge of a machining production unit? As the skilled workforce diminishes, tacit knowledge becomes one of the company's most valuable assets for survival and productivity improvement. The knowledge of existing experts is based on almost automatic practices learned through experience, which require transfer tools and methods for less experienced employees.

COMPETENCE MAPPING TO MAKE THE INVISIBLE VISIBLE

Competence is a complex matter where the tip of the iceberg represents visible competence, and below the surface lies invisible competence, along with the depth of understanding related to the operating environment. Competence mapping tools for machinists make these visible (in the same way that Toyota's Lean tools reveal production waste).

Using competence mapping tools, companies can identify gaps and strengths in the competence of their machining personnel. With these tools alone, results can be quickly achieved on a small scale: training needs are identified, teaching staff gains a deep understanding of the requirement, and risk factors for the company's business and continuity are recognized.

MACHINIST'S TACIT KNOWLEDGE MAPPING TOOLS

A competence map, compiled from the practical work of machinists and additional knowledge brought by top companies in the industry, provides a visual representation of the machinist's entire career path from beginner to master. The large board-like user interface that forms an overview offers a thinking-supporting tool for structuring tacit knowledge.

USE OF THE COMPETENCE MAP FOR NAVIGATING THE DEPTHS OF TACIT KNOWLEDGE

The competence map provides a platform for processing and learning expertise from real-life details that emerge during the competence mapping discussions around the map. The mapping tool, the Competence Map, is a board-like tool where competence elements are identified using four different-colored competence recognition buttons. The selected button describing the quality of competence, enriched with discussion content, is attached to the board, where there are a total of 230 of these elements.

Competence mapping should be started immediately, as competence is directly related to the company's capacity. The Competence Map can also be used as an aid in automation specification. Artificial intelligence is also emerging as a new competitive factor, where structured knowledge of real processes is needed.

OUR OFFERING AS SOLUTION FOR TRANSFERRING TACIT KNOWLEDGE

The overall offering consists of both tools and a method concept for harnessing tacit knowledge as a key success factor for the company. In this context, we focus on the data collection platform and its tools.

The competence map that governs the whole shows the machinist's working life competence steps from beginner to master.

Unfolded, it is a 140 cm wide and 110 cm high rigid board with fastening points and carrying handles, featuring a special scratch-resistant coating where you can draw and wipe off ink marks if needed.

For transportation, the board folds in half, including integrated carrying handles. Transportation dimensions: height 70 cm and length 110 cm.

Assessment of competencies is marked with four colored buttons that attach to the competence map to describe the level of competence.

Competency indicators are organized in a storage box according to their colors. The Competence Map features multiple 15mm mounting points for wall attachment and the option of a stand.

MAINTENANCE AND DEVELOPMENT OF BACKGROUND INFORMATION

MexLink maintains the currency of the material by leveraging the machining technology and training ecosystem. In the future, for instance, AI applications will assist in deep competency analysis and generate new productivity opportunities. These are already in development. Through our international network, connections to top-level manufacturing expertise are becoming available.

ADDITIONAL SERVICES

We offer support services for competency mapping and related documentation for companies, recruiters, and educational organizations. Training providers can tailor their offerings to match the needs of companies.

MexLink, in collaboration with Konepajakoulu (www.konepajakoulu.fi), is piloting the possibilities of competency mapping and developing the educational level of competence while testing software platforms that organize competencies.

Please refer to the specification: Machinist's tacit knowledge collection, structuring, and refinement method.