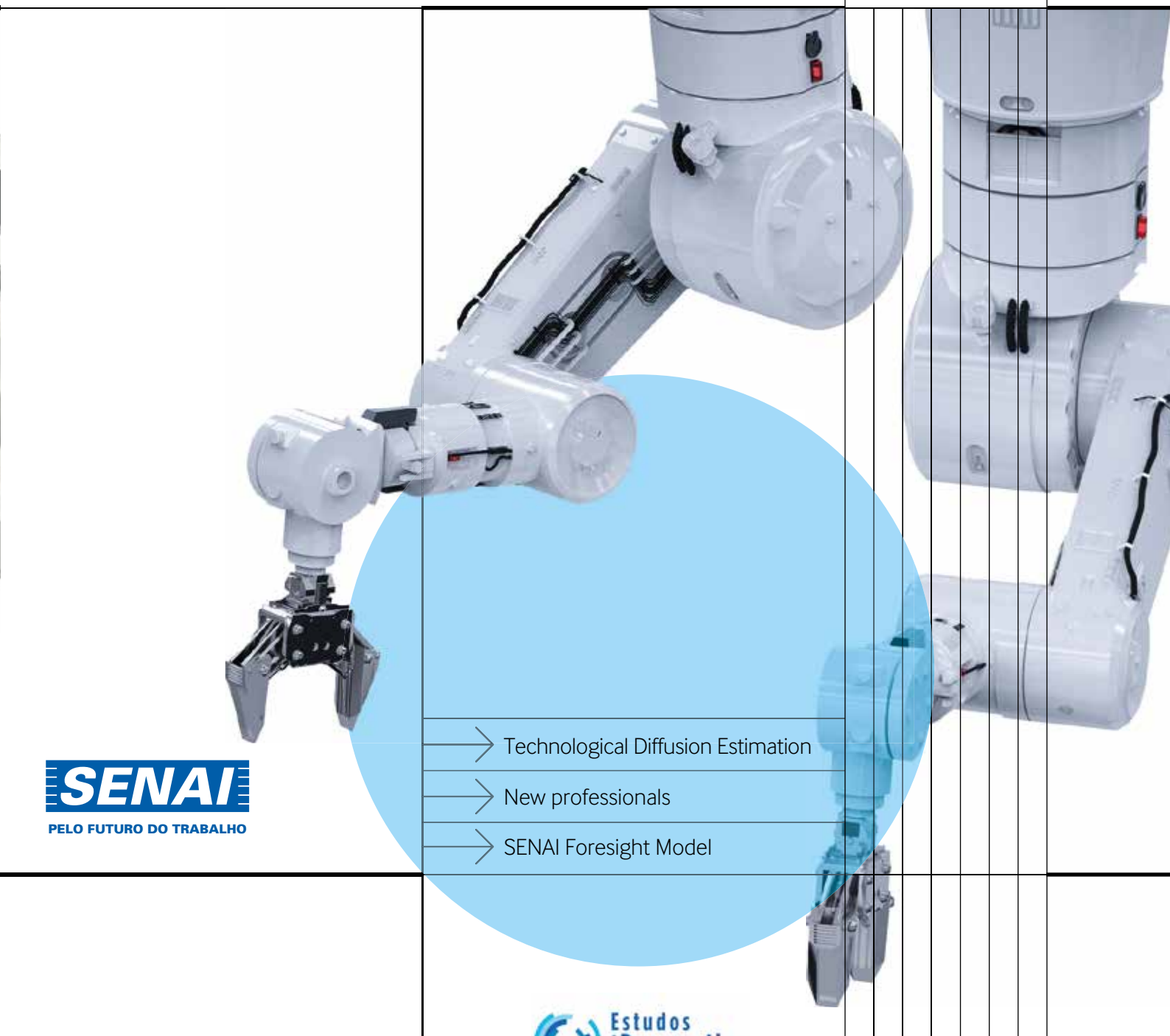
FUTURE PROFESSIONS

BRAZILIAN METALMECHANICAL SECTOR 2020 2034



- Technological Diffusion Estimation
- New professionals
- SENAI Foresight Model

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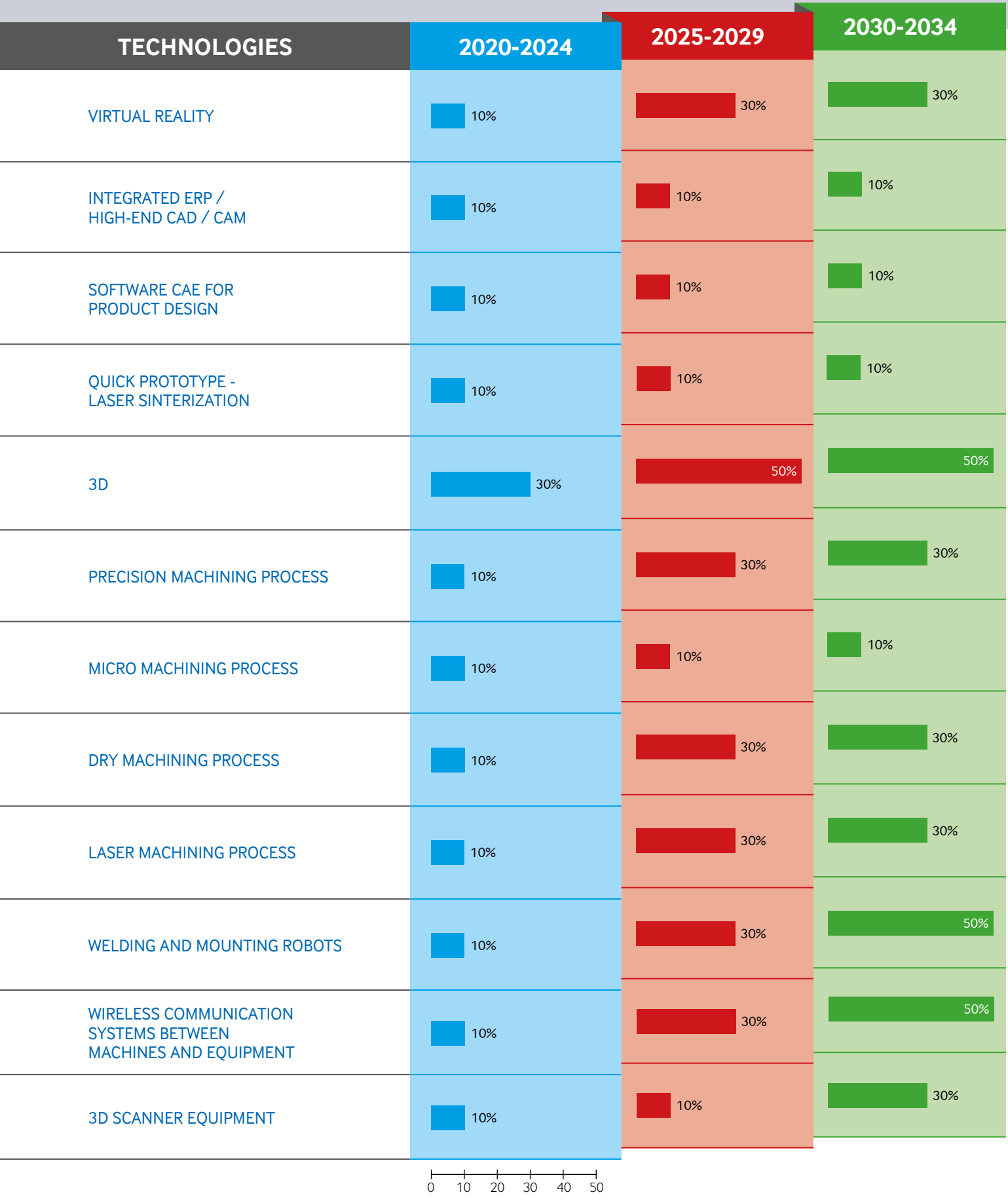
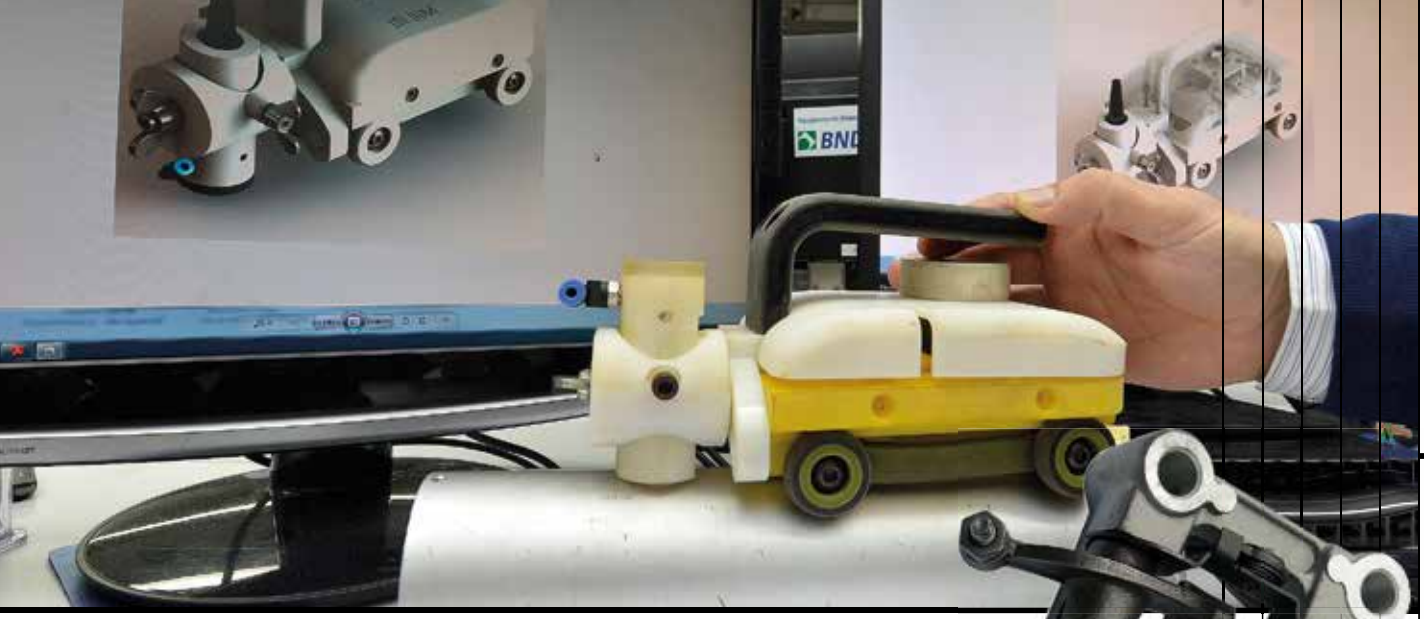
TECHNOLOGICAL DIFFUSION ESTIMATION IN THE METALMECHANIC BRAZILIAN SECTOR



FUTURE PROFESSIONS 2020-2034
BRAZILIAN METALMECHANICAL SECTOR

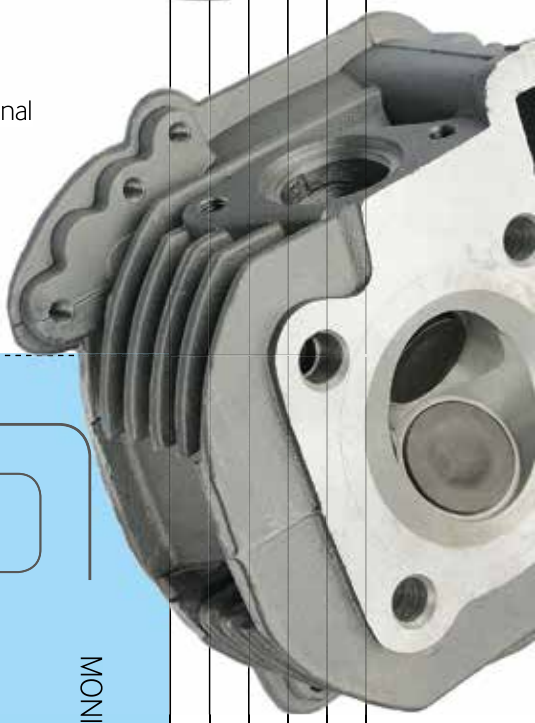
NEW PROFESSIONALS	BRIEF DESCRIPTION OF THE PROFESSIONAL'S ACTIVITIES	MAIN KNOWLEDGE	PRINCIPAIS HABILIDADES
TOOL MACHINE PROGRAMMER	Will program and execute machining processes for various parts and mechanical drawings, as well as their interpretation.	Mechanical design, CAD and CAM, manufacturing process, technical English.	Deductive reasoning, fluency of ideas, multitasking, perception of problems, creativity.
DESIGNER OF PROJECTS AND PRODUCTS	Will plan and execute parts designs for machines, equipment and tools.	Mechanical design, CAD and CAM, manufacturing process, materials mechanics, drawing techniques, visual communication, technical English.	Deductive reasoning, fluency of ideas, multitasking, perception of problems, creativity.
SPECIALIST IN INFORMATION MANAGEMENT	Will analyze and manage large amounts of data as well as ensure the integrity and security of the data.	Applied computing science; Computers and Electronics.	Digital fluency; Innovation.
ADMINISTRATOR OF CONNECTIVITY	Will ensure the speed and integrity of processing, as well as the stability and availability of the network for automated machine connectivity.	Applied computing science; Computers and Electronics; Types of networks; types of data transmission.	Digital fluency; Innovation.
OPERATOR AND ADDITIVE MANUFACTURING PROGRAMMER	Will develop, program and manufacture products by additive manufacturing 3D printing).	CAD, CAE, CAM, CAI; Reverse engineering.	Operation and control; Programming; Quality control analysis.
OPERATOR AND PROGRAMMER FOR PROTOTYPING BIOMEDICAL COMPONENTS	Will develop projects, by electronic means, of biomechanical and biomedical components and assemblies, in addition to making prototypes using Cax systems.	Biotechnology; CAD, CAE, CAM, CAI; Reverse engineering, biomedical materials fundamentals, metrology, virtual reality,	Operation and control; Programming; Quality control analysis; Selection of equipment; Technology design; Problems solution.
INDUSTRIAL PROTOTYPE	Will develop projects, by electronic means, of components and assemblies, besides making prototypes using Cax systems.	CAD / CAM / CAE / CAI, Metrology, virtual reality, material fundamentals.	Selection of equipment; Operation and control; Programming; Technology design; Problems solution.
SPECIALIST IN COMPOSITE MATERIALS AND NANOTECHNOLOGY	Will develop new materials and applications for the machining process.	Chemical and physical properties of materials.	Identify different types of materials; environmental perception.
SPECIALIST IN VIRTUAL AND AUGMENTED REALITY	Will create virtual environments with interactions with physical environments in companies of the metal-mechanical sector.	Applied computing science; Computers and Electronics.	Digital fluency; Innovation.
INTEGRATOR AND INDUSTRIAL PROGRAMMER	Will integrate engineering support systems, and will program industrial systems (CLP, CNC and robotic systems).	Industrial Networks, CLP programming, CNC, robotic and C ++ systems, fundamentals of electronics and electricity, data analysis.	Operation and control, Operations monitoring, Operations analysis, Programming, Troubleshooting.

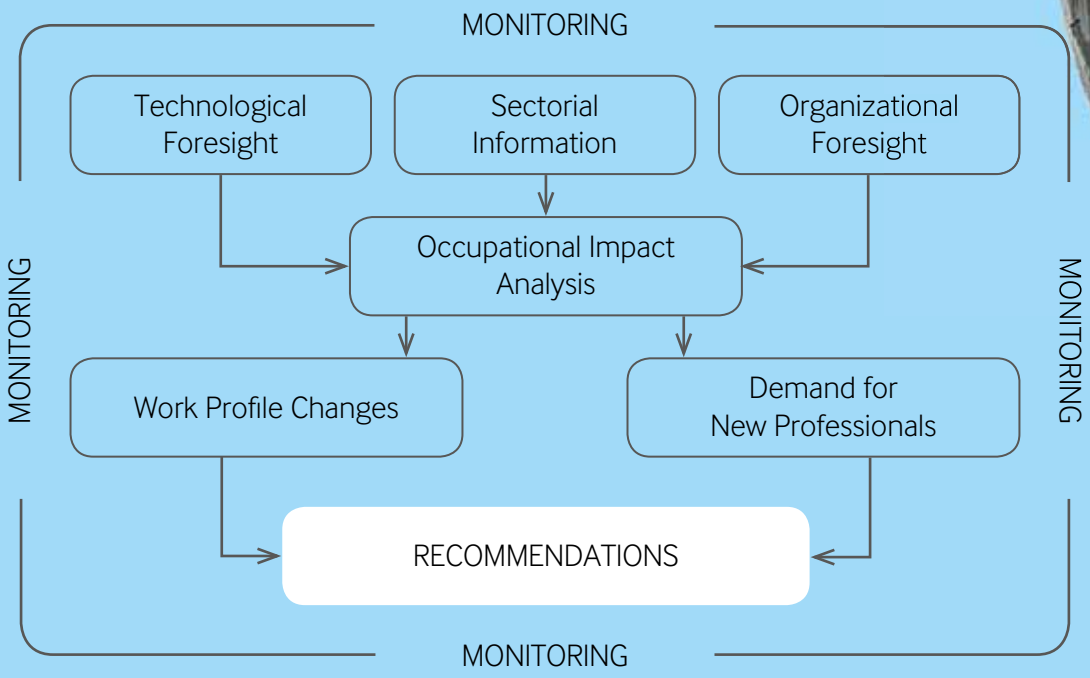


METHODOLOGICAL NOTE

The SENAI Foresight Model was developed to forecast the future needs of skilled labor in Brazilian industry. For this, it is structured in order to capture technological and organizational changes and their implications in the work market, professional profiles, and in the professional education system. The information generated by the Model is used in the discussions about updating and creating professional profiles in the National Sectorial Technical Committees of SENAI / DN.

The methodology is recognized by the OECD and ILO as one of the most important prospective tools for vocational training in emerging countries. The following is a general outline of the Model.





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