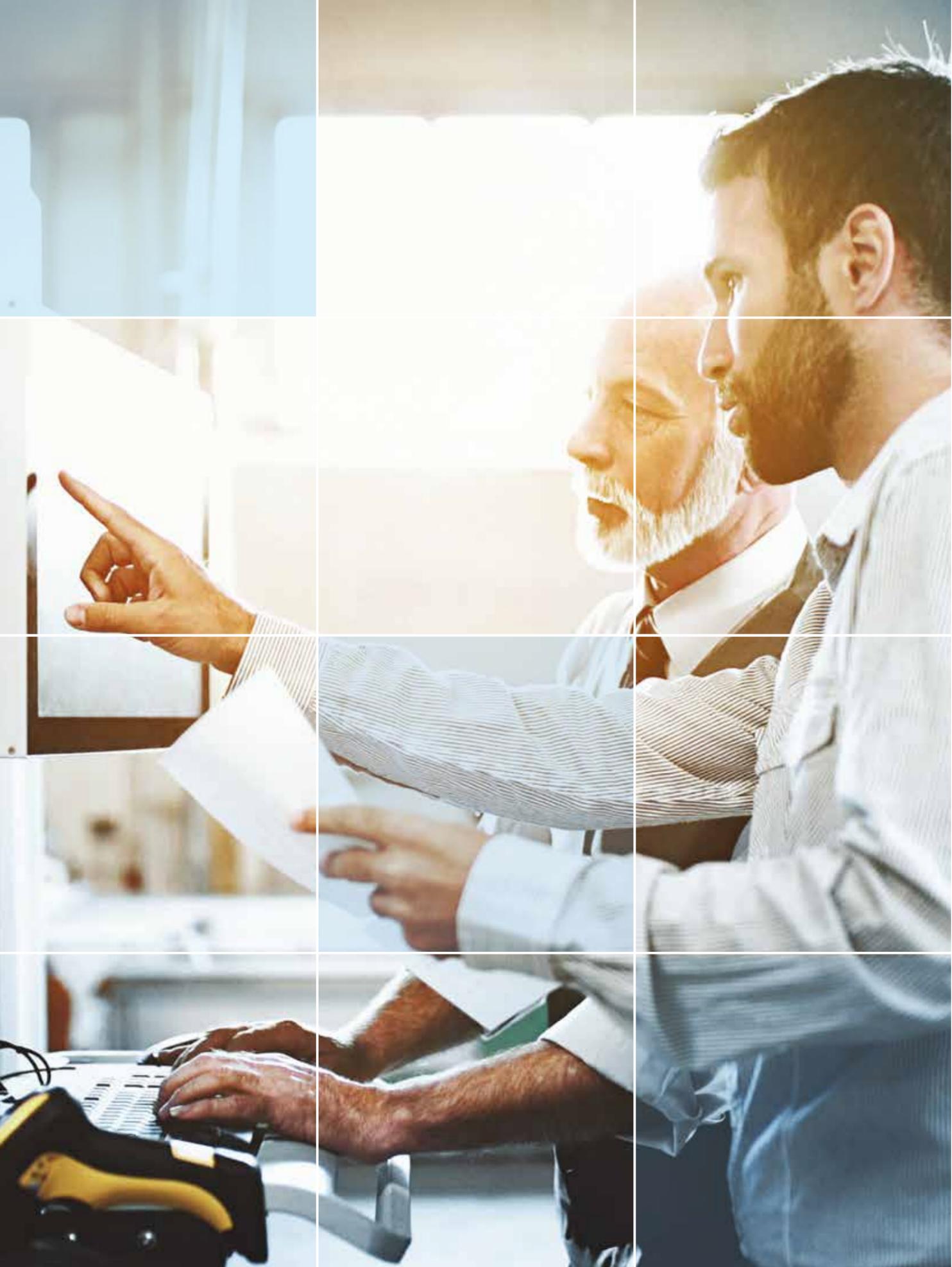**MANUFACTURING TRANSFORMATION**

CONSULTANCY AND IOT SOLUTIONS TO IMPROVE TODAY AND PREPARE FOR TOMORROW
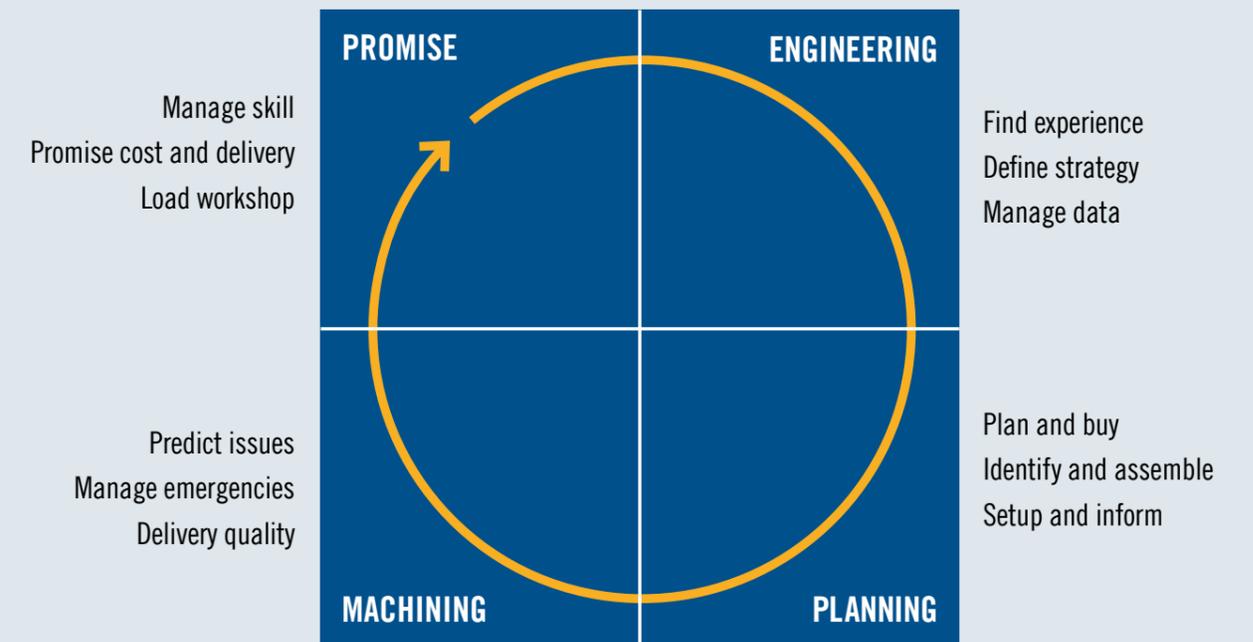
SECO

ACHIEVING YOUR POTENTIAL IS OUR NUMBER ONE PRIORITY

THE NEED TO ADAPT AND PREPARE

Changes within the manufacturing environment have created a submarket of High Mix, Low Volume (HMLV) demand, where batch sizes have become smaller, and reaction time to calculate, quote, machine and deliver has become much shorter. Consequently, any problems regarding process efficiency, machine utilization, communication and worker skill level are magnified in this fast-paced environment, creating unplanned downtime, broken customer promises and lost profitability leading to business failure.

SOLUTIONS TO ENSURE YOUR BUSINESS

Manufacturing Transformation is a suite of consultancy and IoT solutions that maximize performance in the digital age for HMLV manufacturers. Implemented by an experienced team of global metalworking professionals, our solutions are technology and information-based, utilize modern hardware and technology, and leverage our more than eight decades of experience in machining and metalcutting. To ensure that your operations are fully supported, we partner with industry tech leaders, working openly to bring solutions that work, regardless of your preferred suppliers. Through thorough evaluation and implementation, we focus on enhancing customers' manufacturing systems, personnel and machining processes to achieve next-level productivity and efficiency.

	PROMISE	ENGINEERING	
Manage skill Promise cost and delivery Load workshop			Find experience Define strategy Manage data
Predict issues Manage emergencies Delivery quality			Plan and buy Identify and assemble Setup and inform
	MACHINING	PLANNING	

MANUFACTURING EVALUATION
DISCOVER INEFFICIENCIES IN YOUR MANUFACTURING, PERSONNEL AND MACHINING

MARKET CHANGES ARE HIDING POTENTIAL PROBLEMS

If you are a small- to medium-sized machine shop within HMLV manufacturing, you recognize the challenges of keeping skilled and trained employees from the shop floor up to management. Broken customer promises about price, quality and delivery is probably keeping you up at night. Excessive lead time and missed opportunities for cost reduction can be eroding your business and setting you up for failure.

SOLUTION: MANUFACTURING EVALUATION

Manufacturing Evaluation is the most comprehensive of its kind in the industry and is an in-depth drill-down analysis of your workshop backed by our eight decades of global metal cutting expertise. By evaluating and analyzing your operations, we can deliver facts that quantify your improvement potential that add up to real savings and improved performance. Key issues addressed are to:
• Stay current and competitive with the latest tools and technology
• Keep workforce skill level high
• Increase accuracy and confidence with cost proposals and profitability
• Ensure on-time deliveries to keep customer promises
• Remove production bottlenecks
• Reduce scrap, rework and downtime

Tool Wear Analysis is a brand-neutral process, offering a clear view of how 100 tools analyzed tells a different story than just 1

TOOL WEAR ANALYSIS
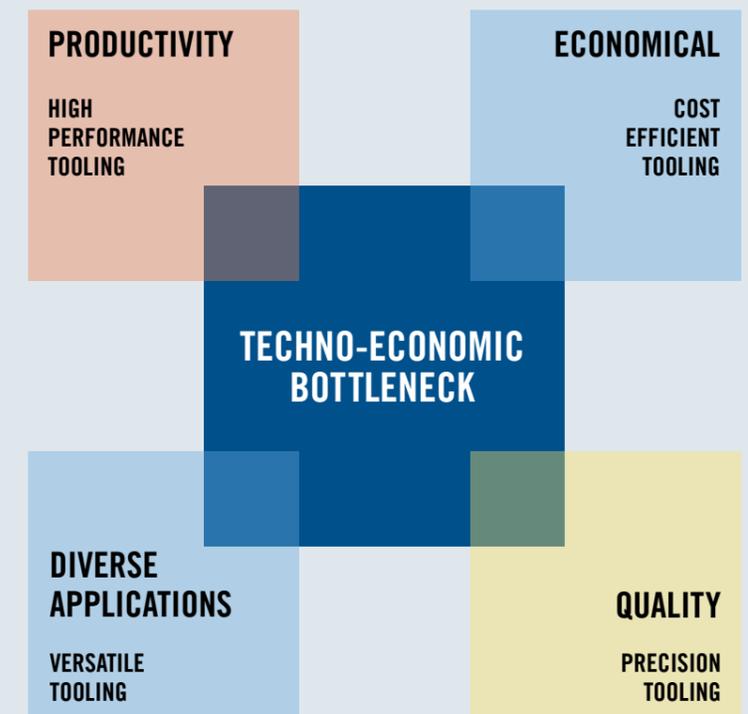# SHED LIGHT ON YOUR ENTIRE BUSINESS WITH TOOL WEAR ANALYSIS

WHY 100 TOOLS TELLS YOU A DIFFERENT STORY THAN JUST 1
Traditional methods of analyzing shop issues such as tool wear fall short when it comes to equating the affect that tool life plays on overall shop performance. The result is that you may be under-estimating and, in many cases, missing the true impact of inter-related issues such as machine utilization, quality, delivery and of course tool cost.

SOLUTION: TOOL WEAR ANALYSIS
Seco Tool Wear Analysis is a brand-neutral process, that can be done on site or remotely in just days, comparing usage to industry norms for a clear picture of potential savings in tool cost, increases in productivity, and reduction in down-time as well as scrap and re-work. Our tool wear analysis helps you understand four key issues that impact your whole operation:
• Cost of Goods Sold (COGS) totals
• Single-Minute Exchange of Die (SMED) analysis
• Value Stream Management (VSM) results
• Overall Equipment Effectiveness (OEE) percentages

PRODUCTIVITY

HIGH
PERFORMANCE
TOOLING

ECONOMICAL

COST
EFFICIENT
TOOLING

TECHNO-ECONOMIC BOTTLENECK

DIVERSE APPLICATIONS

VERSATILE
TOOLING

QUALITY

PRECISION
TOOLING

STEP EDUCATION
NEW KNOWLEDGE TO ACHIEVE OPERATIONAL AND MACHINING EXCELLENCE

WHY YOU NEED TO KEEP YOUR WORKFORCE ON THE LEADING EDGE

Whether you are an operator, engineer or manager, an employee's contribution is important. Knowledge, skill and the need to respond quickly are the most critical factors of success for your company. Constant introduction of new machining methods and tooling in the quickly-evolving manufacturing landscape has made it even more critically-important to avoid costly mistakes and lost business due to problems like excessive scrap, rework, wasted time, downtime, poor planning and overall low efficiency.

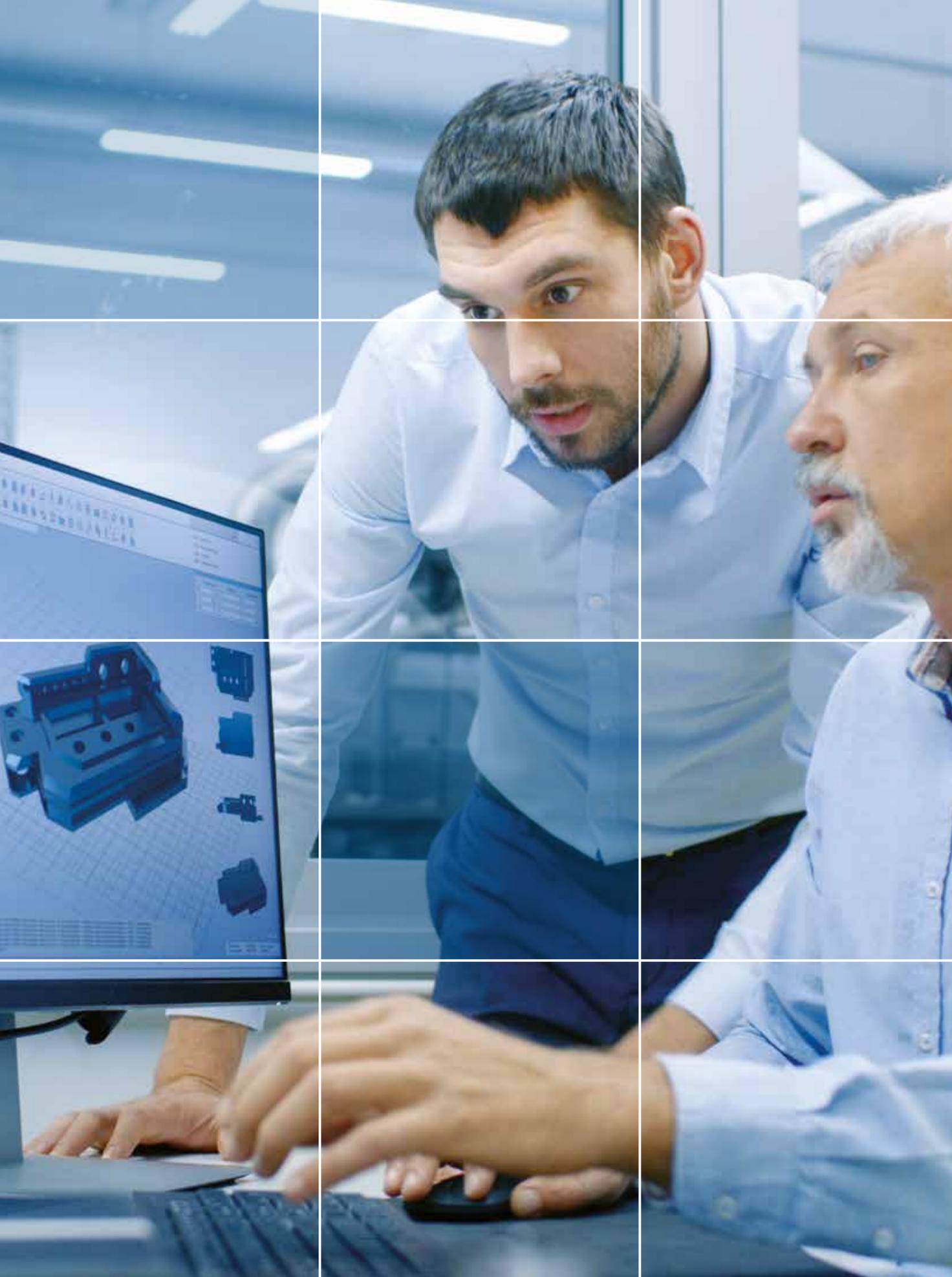### 27 UNIQUE STEP EDUCATION PROGRAMS TO ENHANCE KNOWLEDGE, SKILL AND COMPETENCY

The Seco Technical Education Program (STEP) is a unique and highly-developed set of modules that enhance competency across ALL disciplines of a production unit to meet demand for price, quality and delivery. STEP is built around a 3x3x3 matrix with choices in job function, curriculum and format:
- Operators, Engineers and Management
- Core curriculum, Advanced curriculum, Applied machining science/physics
- Presentations, Courses and classes, Master Classes

REMOVE GUESSWORK AND WASTED TIME

Trial-and-error is too slow and too expensive. Well-trained professionals across all job functions are needed to capitalize on investments in facilities and equipment and continue the good relationships established with customers.

CAM Programming with
high-technology partners to
increase efficiency, process
security and capacity

CAM PROGRAMMING
CONNECTING CAM PROGRAMMING, COMPETENCY AND CAPACITY

PROBLEMS IN MACHINING OFTEN BEGIN BEFORE THE PART AND TOOL EVER MEET

Today's fast-paced and rapidly changing technological marketplace has left some manufacturers with sub-standard CAM programming. The primary reason is that the workforce is lagging behind, in terms of competency and capacity, in the latest technology because shop managers and owners are too pressed to get work completed and delivered. Not researching or reinvesting in the most current techniques is creating an increasing divide leading to greater and greater inefficiency. The ultimate result is evident in time wasted, lower productivity and quality, machine downtime, and missing validation – an important step that confirms you have it right from the outset. Of the more common 'time wasted' problems, and often misunderstood, is machine cycle time, where reductions of 75% or more can be achieved through proper or corrected CAM Programming.

SOLUTION: INTEGRATED CAM PROGRAMMING

Our CAM Programming integrates high-technology partners to increase efficiency, process security and capacity – ultimately providing for faster time to market. In addition to CAM software – such as UG NX and Catia – we also offer validation solutions using NC Simul and Vericut. The modern economy places higher demands on manufacturers, including the planning and engineering phases before machines even begin to run. CAM has many benefits for machining operations, and excellent CAM programming reduces waste, increases productivity produces higher quality, and ensures key objectives:
• Faster production process
• Shorter cycle times
• Greater machine utilization
• More precise dimensions
• Better material consistency
• Minimal waste
• Reduced energy consumption

INVENTORY MANAGEMENT
SECURE, AUTOMATE AND CONTROL YOUR INVENTORY

PRODUCTION AND PROFITABILITY DEPEND ON DELIBERATE STRATEGIES

Your efficiency and productivity is also directly related to your tooling inventory. If it isn't in the right place, at the right time, in the right operating condition, then your shop floor is losing time and money. In total, poor inventory management of critical assets needed in the manufacturing process will lead to a number of serious problems including:

- Production stops because the correct tooling was unavailable
- Excess inventory that is uncontrolled and expensive
- Wasted operator time searching for tooling
- Inventory mismatch to production needs
- Too much time spent in order administration

SOLUTION: INVENTORY MANAGEMENT

Seco Tools offers Point-Of-Use (POU) inventory management systems that enable you to control, track and manage inventories and critical assets, when and where you need them most. With Seco Inventory Management, your organization can automate your tool procurement, remotely manage your inventory from any web-enabled device, and always ensure you have the right products on hand. You can also choose security levels for your consumable and returnable items of virtually any shape and size, providing you:

- Control and availability of inventory
- Reporting
- Links to tooling manufacturers' catalogues
- Integration to ERP system
- TDM (Tool Data Management) links

CHOICES TO SUIT YOUR BUSINESS NEEDS

We deliver to each customer a tailored hardware, software, service and support solution based on a comprehensive tool and process audit. We listen, gather information, and together with our customer, define the scope of services and targets, and then formulate a plan that will achieve tangible benefits. In total the offering includes on-line and off-line options, physical cabinets with a wide range of sizes and configurations, and even virtual storage.

- Access Control, with intuitive graphical user interface, is available in multiple configurations – including drawer and lid or singular compartment, allowing users to locate and take tools, as well as return after use. This system allows for complete flexibility, versatility and modularity.
- Dispense Control permits single item dispensing, and can store up to 840 SKUs, and is rugged enough for any manufacturing environment. Designed for a high-mix of stock items from industrial tools and supplies to a variety of other standard shop supplies, the system includes a smart technology, which can automatically scan all your configurations.
- Trust Control uses a convenient cabinet-top PC or tablet to give you control to open inventory environments for that added level of knowledge and efficiency. This virtual inventory management solutions applies the same technological advantages while providing a near-limitless opportunity for tracking and control, even for products that are not physically within reach.

AC100: Access Control

MACHINE MONITORING
LEVERAGE CONTINUOUS MACHINING DATA TO IDENTIFY BOTTLENECKS

UNDERSTANDING REASONS FOR DOWNTIME AND LOW PERFORMANCE

Knowing why your machines are not running is key to understanding downtime issues and utilization problems. Fundamentally, any unplanned stoppage – whether it's due to issues regarding materials, personnel, maintenance or an equipment breakdown – are considered downtime. Common issues facing manufacturers involve both man and machine and include incomplete information and knowledge of:
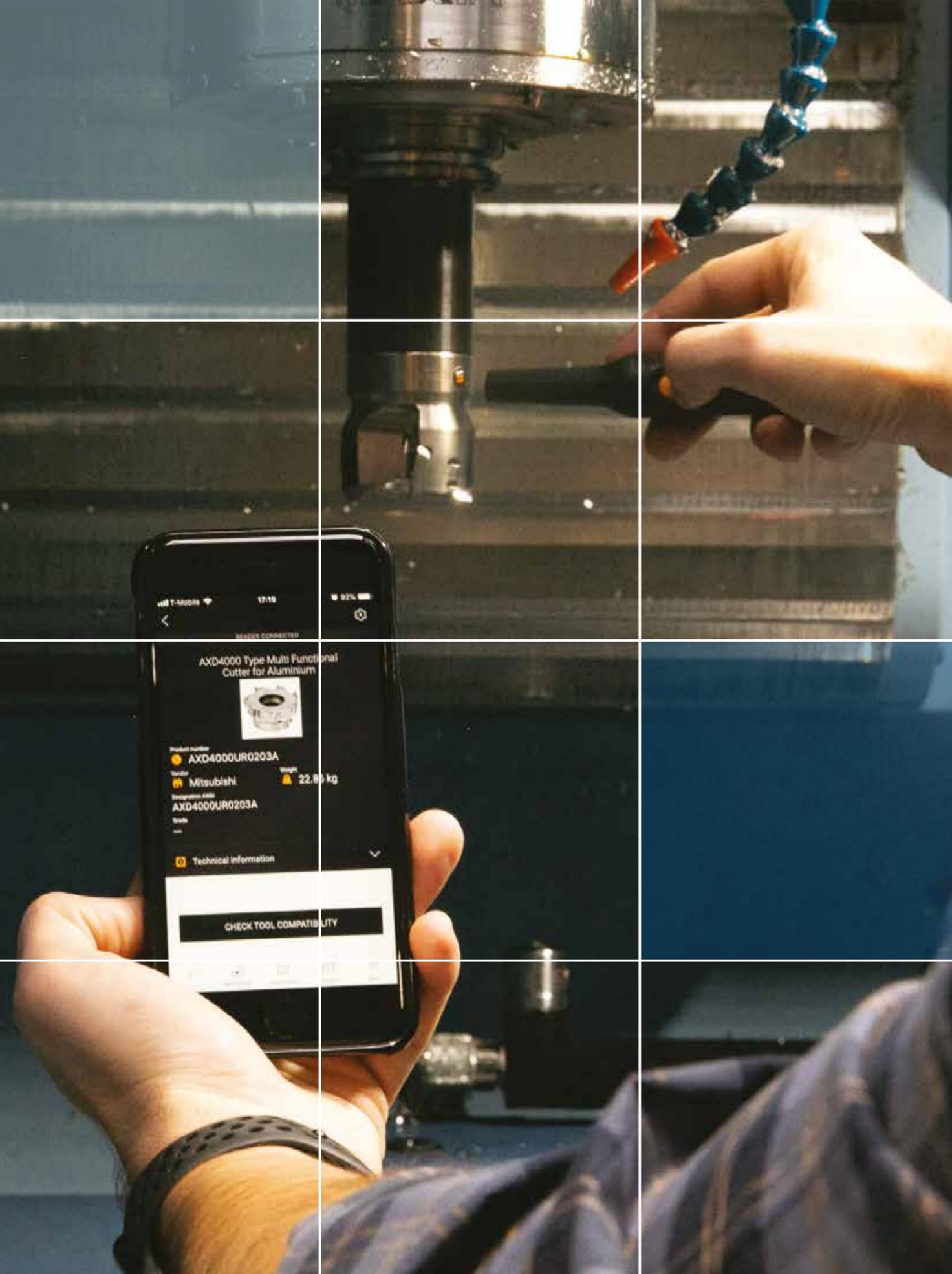
- Accurate running data from machines
- Different downtime reasons they have and to what extent
- Scrap rate of different products
- Total efficiency of their machine tools for the whole workshop or multiple workshops

- What happens at unmanned shifts
- Expertise of their machine operators
- How planned work is affecting setup times
- Follow up on production tied to a specific job/workorder
- How maintenance will impact production

SOLUTION: MACHINE MONITORING

Increase your uptime through machining data using Internet of Things (IoT) connectivity and cloud-based machine monitoring software to track machine utilization. Our Machine Monitoring uses state-of-the-art machine monitoring tools that provide 24/7 information on the cutting action of each machine on your shop floor, constantly relaying performance data to operators and managers to reduce time to react, as well as the ability to:

- Track Overall Equipment Effectiveness (OEE) and manufacturing efficiency with real-time dashboards
- Identify production bottlenecks
- Take action with real-time notifications
- Diagnose problems with deep alarm analytics and AI-driven predictive notifications
- Install and onboard easily

Common reasons such as part changeovers, tool changeovers or even breakages can be automatically categorized from machine data to more easily identify and address in the future.

TOOL IDENTIFICATION
INCREASE ACCURACY AND SPEED IN YOUR TOOL SELECTION AND SETUP

OLD WAYS OF FINDING AND SELECTING TOOLS IS COSTING YOU BOTH TIME AND MONEY

Regardless of the type of the machining operation, the steps the tool must take are relatively similar. After a production order is created and sent to the shop floor, a machine operator selects the needed tools from the shop's tool store. Then the operator assembles the tooling, configures the required geometrical tool data, and inserts the tool into the tool holder and enters the tool data into the machine's control unit. But, traditional methods of tool identification and selection are largely dependent on error-prone activities:

- Tool ID numbers may simply be written down on a piece of paper or routing slip
- The correct tool may only use a printed label or engraving to identify it
- Tool data is manually entered into the machine via the keyboard of the unit

The result of these human error problems are costly, and include:

- Wasting operator time
- Too much machine idle time/ poor utilization
- Inability to locate the correct tool
- Using the wrong tool – increasing costs and putting components at risk
- Ordering and/or inventorying too many tools

SOLUTION: IOT TOOL IDENTIFICATION

Increasing accuracy in your selection process saves time and money. Seco Tool Identification confirms the right item for the job through RFID tags and readers, connecting your company database and secure mobile devices to take the guesswork out – removing human error and increasing speed. Convenient dashboards increase tooling visibility to avoid work slow-downs and reduces costs. Durable, sensor-enabled hardware coupled

with Internet of Things (IoT) technology simplifies complex tool identification and selection for each operation, giving you instant access to product data, compatibility checks and remote support. Additionally, you can change tools faster to reduce assembly errors and optimize workflow. Other key advantages of our Tool ID include:

- Direct access to more than three dozen online supplier catalogs + user documents
- Tool history management (scan history/scan location history/who scanned the tool)
- Collaboration & group feature
- Communication between users and tools vendors
- Easy access, mobility, and the freedom to go paperless

SUPPORT HUB

RELY ON A DEDICATED TEAM OF PROFESSIONALS FOR ANSWERS AND ACTION
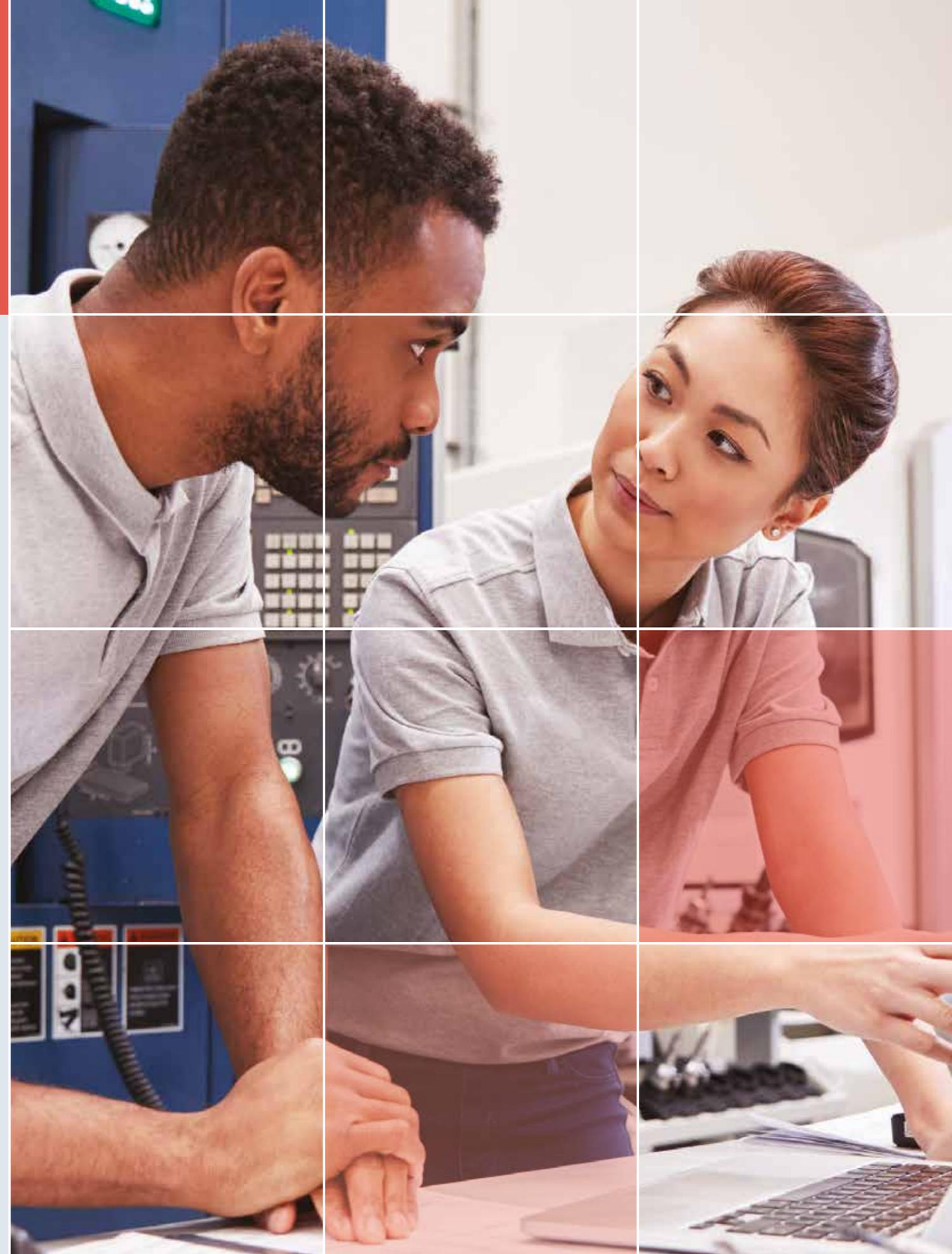
DON'T BE OVER-SOLD AND UNDER-SERVICED

Industrial customers who are embracing support from consulting firms and/or their preferred suppliers are either unsure of how to get it, or not being supported after the sale. Those who are connected with their providers may be receiving sub-standard support, or are waiting to receive follow up to their issues – all the while under-utilizing the products and services they purchased. So, after making some big decisions to alter and improve their business, many customers are left with:

• No consultant or added values support
• Lack of confidence in products and services from suppliers and consultants
• Under-utilized consultancy products and services
• Uncertainty of who to contact for support
• Poor support (confusing, incomplete, delayed)
• Time wasted waiting for replies/answers to issues

SUPPORT HUB, ACCESS FOR SUCCESS

Support Hub, with 'direct connect' to the network of technical and IoT partners, is a one-stop, total solution that can be accessed via the internet or phone to keep customers important consultancy services fully optimized. Team collaboration helps to resolve more complicated issues. Multiple languages are supported and future expansion to chats and on-line FAQ's are in progress. Professional, courteous and trained individuals are available:

• As a single point of contact to make it easy for the customer
• To help with all Seco Manufacturing Transformation solutions
• For follow up, and as proactive support
• To directly connect with a wide network of tech partners for IoT solutions
• Via phone and email for easy access

INTERESTED IN OUR SOLUTIONS?

FIND OUT MORE AT
SECOCONSULTANCY.COM

OR CONTACT US DIRECTLY:
SUPPORT@SECOCONSULTANCY.COM

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