

TruConnect

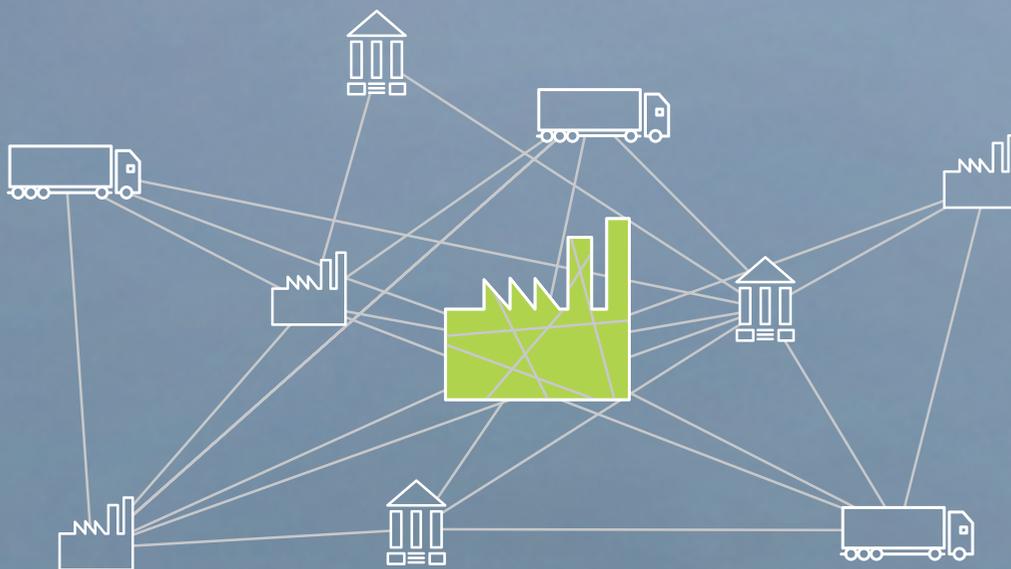
Your Smart Factory



The working world is changing

Whether mobile phone case, car or residential interior design, the trend towards individualized products does not stop for any industry. Every day sees the appearance of new networking solutions that offer tremendous potential for optimization. Together, these megatrends permanently change not just our lives and our working world, but sheet metal processing as well.

The complexity of your production system is increasing



Customization

In a society that grants us more and more individual freedoms, values are changing. This is also reflected in consumer behavior, as people increasingly prefer customized products. This, in turn, is shaping the economy. Markets are being divided into an ever increasing number of smaller segments. You can feel the effects: You get smaller orders with greater variety.

How do you produce small lot sizes economically?

Digital Transformation

Digitalization changes companies and value chains. Digital solutions are being developed in rapid succession. They connect different components within a production site and beyond. This results in solutions that sustainably optimize and dramatically shorten processes. Since no two production systems are the same, the way to digital networking will be unique for each system.

How will you make your way to networked manufacturing?



"My customers expect me to provide updates on their order status at the touch of a button."



"Batch sizes are falling and customization is increasing. Half of the jobs I do are one-off orders. The fact is that small batch sizes just don't pay."



"The costing and quotation phase is time-consuming and expensive. Yet many customers expect to get pricing details as soon as they submit a request."

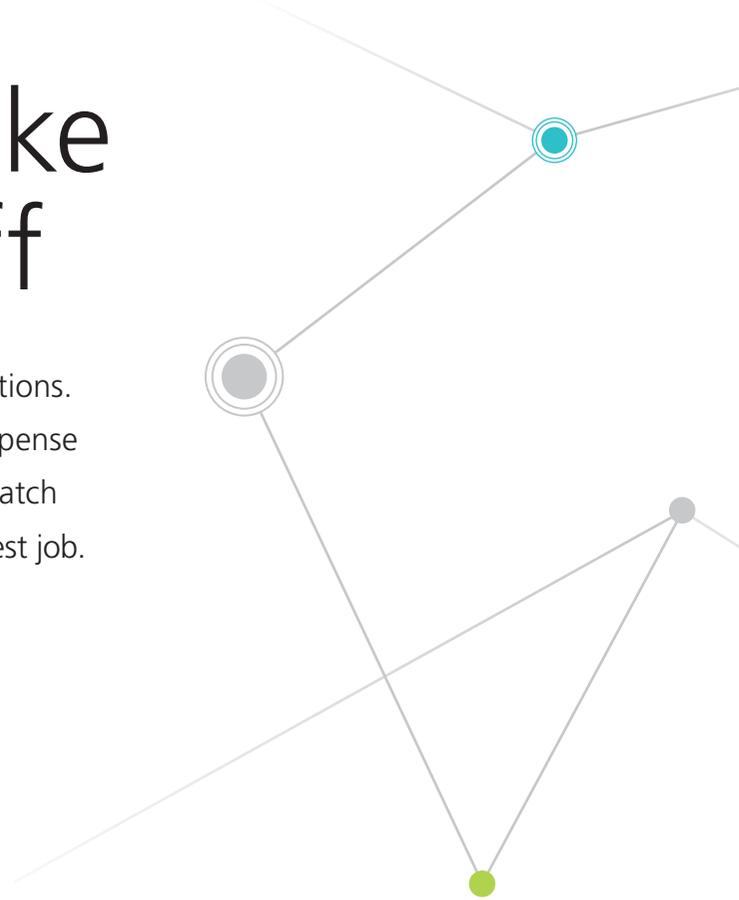


"Delivery times are getting shorter and I need to integrate more and more processes. That's a huge organizational challenge."



Big or small, make every job pay off

Indirect processes account for around 80 % of all operations. Therefore, if you can manage to match the time and expense incurred by these indirect processes to reflect smaller batch sizes, you will be able to turn a profit from even the smallest job.



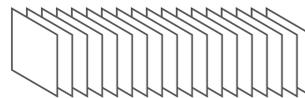
Indirect processes upstream

Direct processes, time and expense dependent on batch size

Indirect processes downstream

In the past:

Large batch sizes compensate for high levels of investment in indirect processes.



Today, without optimization:

Batch sizes are getting smaller and smaller while the investment required for indirect processes remains the same.



Today, with optimization:

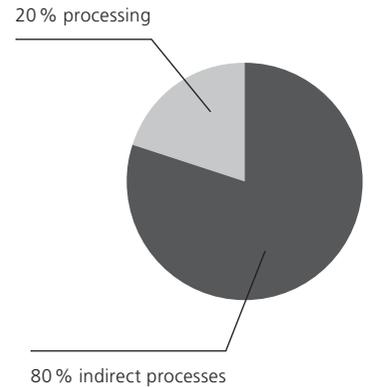
The investment in indirect processes is matched to the smaller batch sizes.



What are indirect processes?

Every hour of processing is accompanied by around four hours of supporting activities. These indirect processes include planning, administration, intralogistics, setup and the operators' organization of their own work.

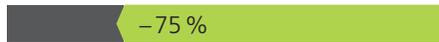
These processes account for around 80 % of your production time and offer the most potential for optimizing your manufacturing operation.



How do you optimize your indirect processes?

Think about your daily personal life: How do you order books, transfer money or navigate your way to a new destination by car? By harnessing the potential of digital connectivity! The trend is now revolutionizing manufacturing as well, and by getting connected you can save yourself a great deal of time and money. Below we list some of the potential savings from a study we conducted together with Fraunhofer IPA:

Planning and administration



- Plan more efficiently with smart production control
- Program jobs faster
- Process deliveries automatically
- Create quotations automatically online

Intra logistics and setup

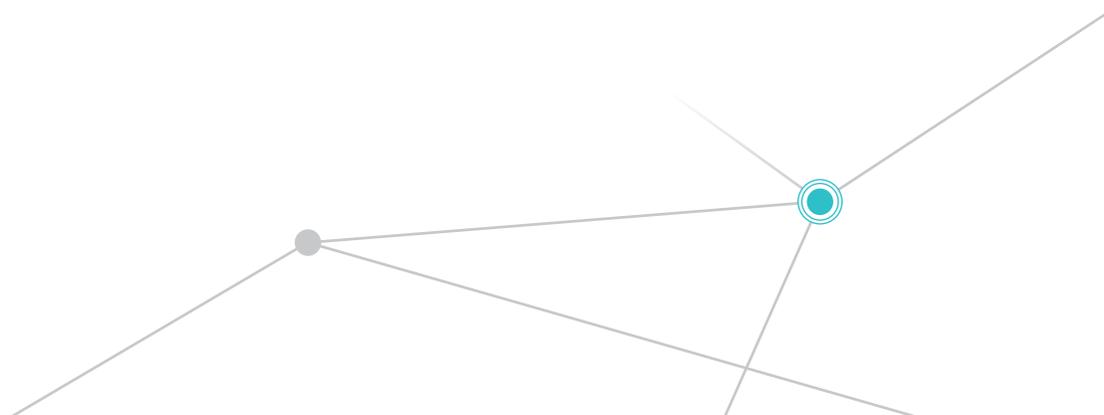


- Easy access to key information
- Set up machines automatically
- Use the best processing strategy to produce parts with optimized setup
- System support with warehouse management
- Manage tools digitally

Operator organization



- Less waiting time
- Mark parts with codes to launch programs and provide feedback
- Computer-assisted part sorting
- Get easy access to production-relevant information
- Use electronic real-time job scheduling



Take control

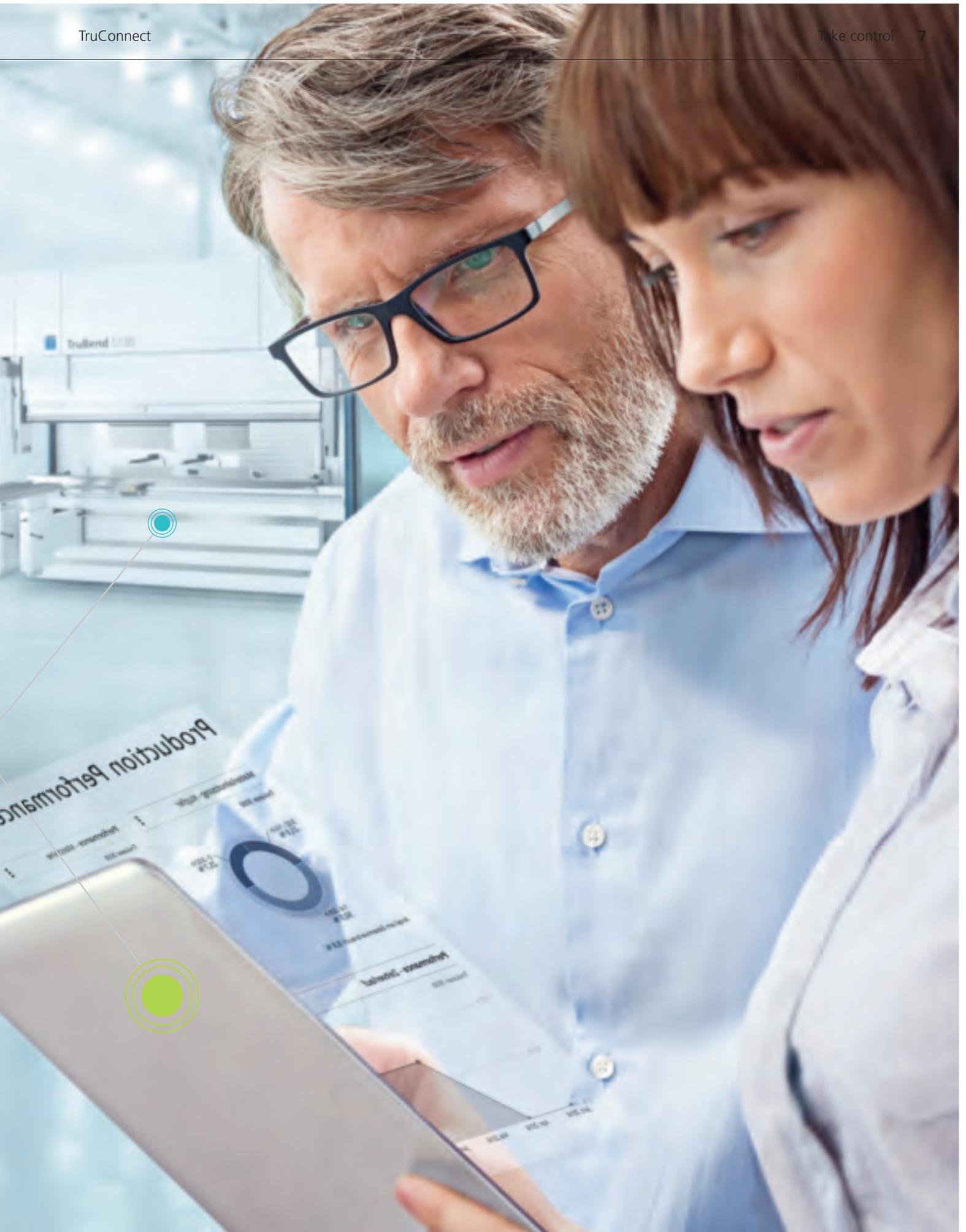
Due to the power of digital connectivity, you have a lot of freedom: you see more, know more and get the best out of your manufacturing process. Using TruConnect, you can design your Smart Factory step by step. The practical solutions support you every step of the way towards connected manufacturing, and help you to make your entire operation more transparent, more flexible and above all more profitable.

Your solution: TruConnect

TruConnect is the embodiment of Industry 4.0 at TRUMPF, with a range of solutions that connect people and machines using the power of information. It extends to cover every step of the manufacturing process – from the initial quote to parts dispatch.

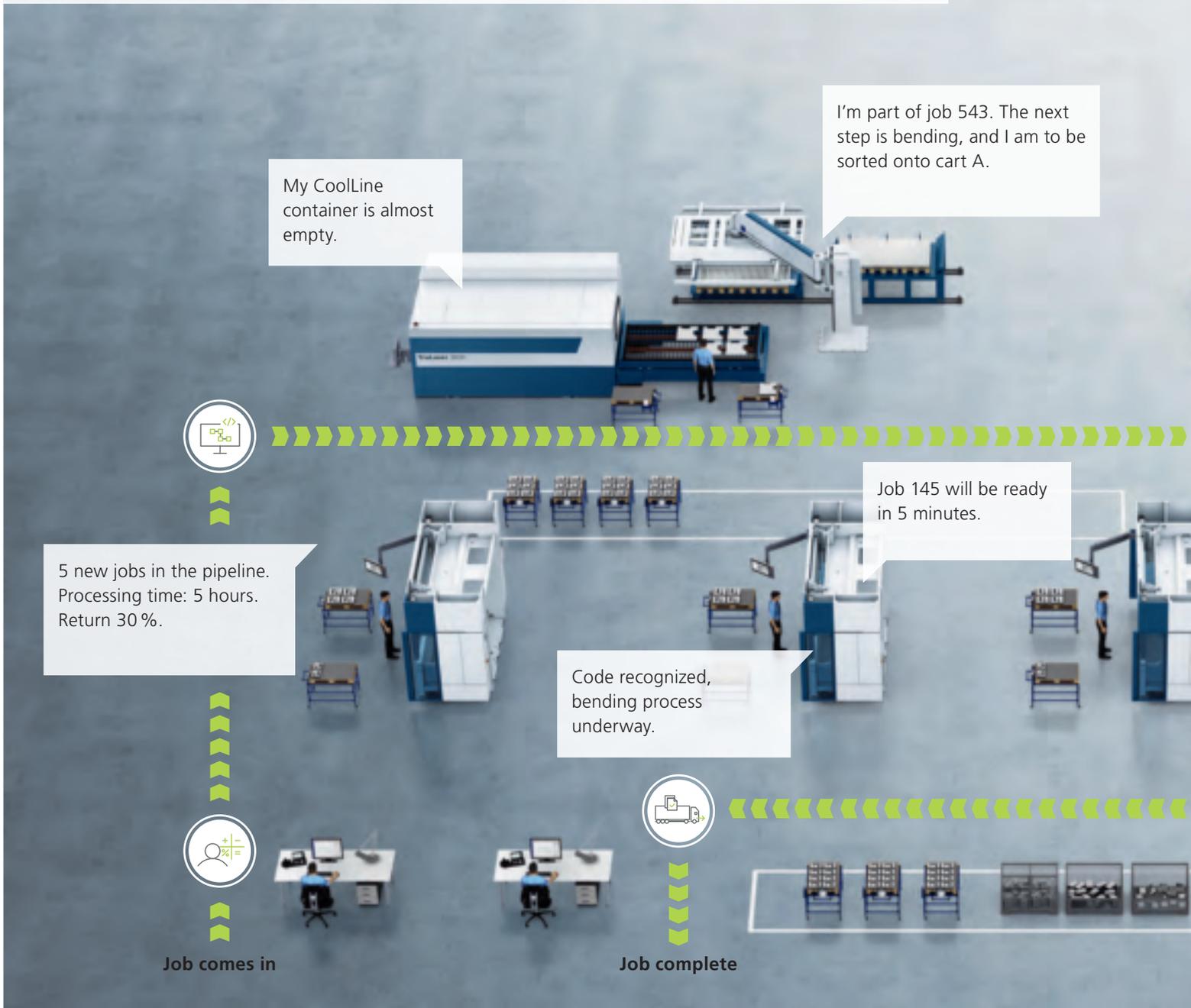
Modular and personalized

No two manufacturing operations are the same, which is why you are free to combine the components of TruConnect according to your individual needs. This enables you to bring digital connectivity to your manufacturing step by step, gradually building it up.



Continuous flow

Industrial manufacturing is undergoing a revolution. Machines and components communicate with one another with the aid of sensors and codes. Software solutions collate the information obtained, analyze it and use it to control the manufacturing process. This leads to transparent and continuous processes that enable continual flow in manufacturing. Use it to gain a competitive advantage along the entire value chain.





Preparing a quote

System automatically calculates quotes – saving you time, money and hassle.



Manufacturing planning and programming

Your jobs are perfectly coordinated, nested and entered into the production plans for your machines. Making changes is a simple process.



Cutting manufacturing step

Codes communicate the processing of your metal sheets, so you no longer need the accompanying paperwork.



Bending manufacturing step

Connected processes make the operator's work a whole lot easier and eliminate waiting time.



Intra logistics and setup

The operator becomes the process manager, maintaining an overview and managing material flow.



Dispatch and job completion

Your connected manufacturing operation automatically assigns parts to the correct job. A few clicks and you have your dispatch paperwork and invoice.

Please regrind tool at station no. 20.

New material required, please confirm order.



Job 89 is ready for dispatch. The logistics partner has been informed.



How do you turn your manufacturing operation into a Smart Factory?

No two manufacturing operations are the same. Your individual situation and objectives are what determine the course. Where can connected manufacturing benefit you the most – and in what form? That's exactly where you start! You don't have to overhaul your entire operation; the important thing is to work purposefully on the most beneficial aspects.



“Calculating and drawing up proposals just can’t take so much time and money!”

Leave the data entry to your customer. With **WebCalculate**, customers can submit quote requests around the clock, including designs. The system automatically verifies the data and comes up with a proposal. You decide whether the proposal goes straight to the customer or to one of your team members for review.

“I want to finally be rid of the mountains of paper!”



Sheets and parts marked with **Dot Matrix Code** immediately communicate the next processing step. This is handy and useful for you: the machine scans the code, automatically loads the correct program and displays the relevant setup plan. All of the information when and where you need it, without any accompanying paperwork whatsoever.

TruTops Fab allows you to control your entire manufacturing process. The digital business platform provided by our partner **AXOOM** connects all of the steps in that process. All of the data you need is centrally accessible. You gain insight into and control over your whole operation. The AXOOM platform is open to all machine manufacturers, for the integration of existing systems, and can be extended with partner apps.

"I want to automate the control of my manufacturing process from start to finish!"



"My manufacturing operation has to become more efficient!"

Begin by obtaining full transparency. The web-based **Performance Cockpit** shows you all of the important productivity indicators in your manufacturing operation at a glance. Use it to see exactly where you can optimize your production process.



"I want to know my machine's status at all times!"

Sensors monitor your manufacturing operation and provide transparency. A single glance at the indicator light of the **Condition Guide** shows you your machine's current status – and with the **MobileControl App**, you can access this information wherever you happen to be. For quick diagnosis when you need it, you can rely on our **Visual Online Support**. One thing is for sure: smart manufacturing will boost your machine availability.



Your path to the Smart Factory

Opt for a partner with experience to implement your Smart Factory. From the beginning, TRUMPF has worked with industry, research and governmental bodies to shape Industry 4.0, and is making key contributions to bringing about the production of the future.

Consulting for networked production

What can digital connectivity offer you? Which TruConnect solutions could help your company? Find the answer to these questions and more with our consulting services. Taking into account your individual situation, we can assist you with the following services:

Smart Factory Experience

Half-day event at TRUMPF

Learn everything about what connectivity has to offer and see connected manufacturing in action at TRUMPF.

“The afternoon brings the Smart Factory concept to life and is a very good way to begin engaging with the topic. It was a valuable half day.”

Holger Hunstock, Managing Director
Avermann Laser- und Kant-Zentrum GmbH

Smart Factory Check

One-day check at your manufacturing location

A visit to your facility allows us to evaluate where in your process you could gain the most from connected manufacturing.

“The day revealed new possibilities and ideas that we had never come across and which we would never have thought of ourselves. Now we have to put them into action.”

Thomas Seelig, Deputy Managing Director
Seelig + Co Feinblechbau GmbH

Smart Factory Consulting

Customized consulting at your manufacturing location

Get a detailed concept for your Smart Factory including suggested solutions, savings potential, necessary investment and implementation plan.

“Because of its process expertise, TRUMPF was able to provide valuable advice that went beyond software issues.”

Jacques Kammerer, CEO
Laser Alsace Production



Ready to embrace the future?

Consulting for networked production provides clarity about your company's situation and opportunities.

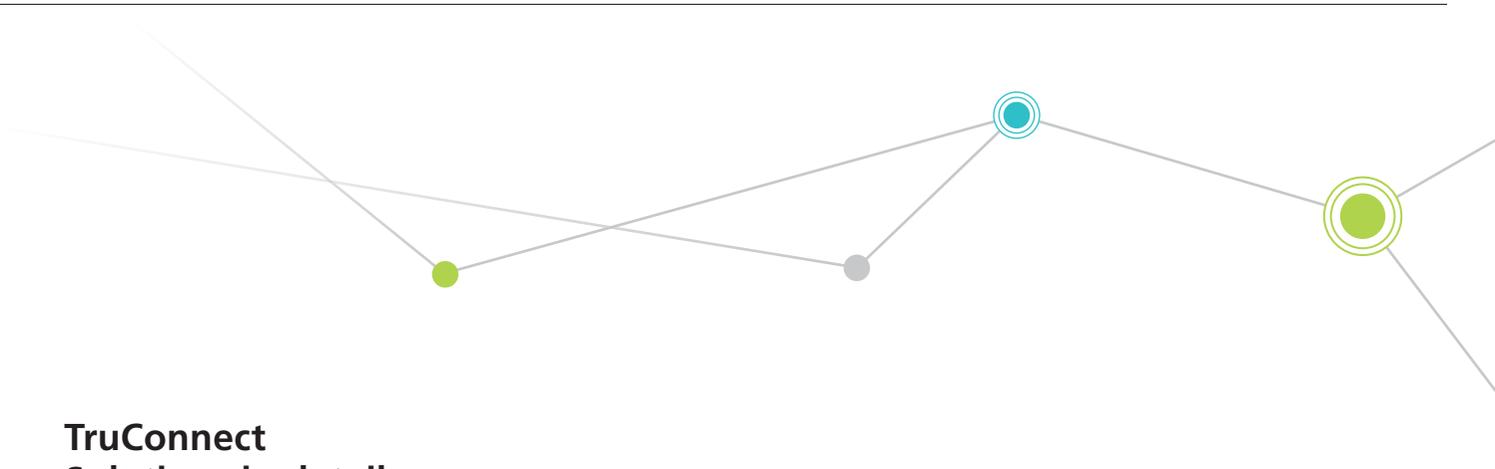
We are at your disposal even after the consulting phase ends, and will happily help you implement your Smart Factory until it's working the way you want.

The first step is easy:

Get in touch today to request your consulting service. We look forward to hearing from you.

truconnect@us.trumpf.com

Get a quote
now!



TruConnect Solutions in detail

TruTops Calculate

Quick, precise calculation of time and costs for punch, bend, punch/laser and laser parts, as well as tubes and profiles and complete assemblies, taking into account machine-hour rates, consumption data and personnel costs.

WebCalculate

Can be integrated into your website and allows your customers to receive personalized quotes by entering their own data. Considers individual factors such as customer discounts and features an integrated user management system for controlling access.

TruTops Fab

The software for production control consists of several modules. With them, you can plan and steer your entire workflow.

TruTops Fab Module Storage

This software controls the entire material flow in the manufacturing process, manages inventory and flags optimization potential. To do this, it integrates all machines and storage systems.

Performance Cockpit

This web-based solution displays all of the important productivity indicators at a glance and helps to identify potential optimization measures in the production process

Dot Matrix Code

A standardized industry code to mark your parts quickly and reliably.

Integrated Tool Management

A central database that brings together all of the punch components involved in the setup process.

MobileControl App

Transfers the interface of the operating panel to a tablet device, making managing and monitoring machines easier and more flexible.

Condition Guide

This feature monitors relevant functions and makes machine status transparent.

Visual Online Support

An app to solve technical problems faster, allowing for the exchange of image, audio and video files with technical customer support.

AXOOM

The digital business platform of our partner AXOOM connects all the steps of the value creation chain simply and efficiently.

The basis for these applications is an appropriate networking infrastructure, e.g. the Industry 4.0 interface Central Link on machine level or the data interface Factory Gate on factory level.

TRUMPF



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