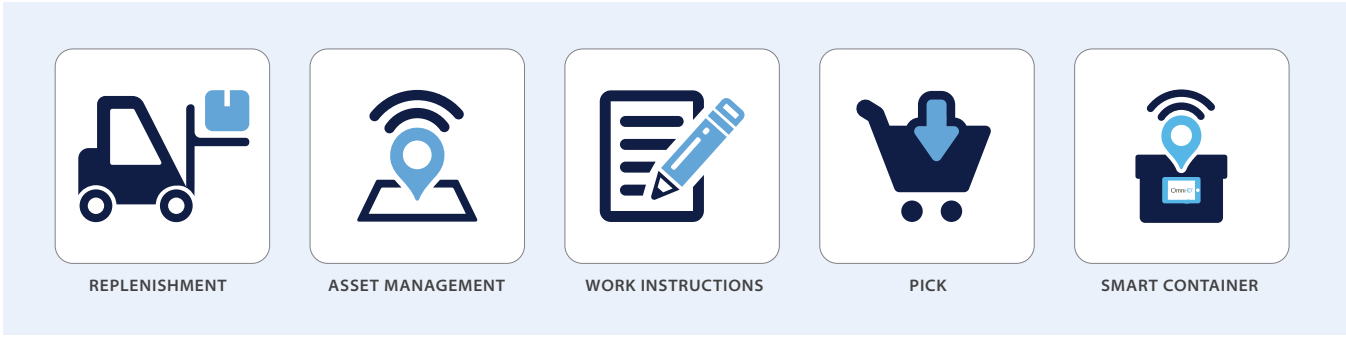
What is the most common cause of factory inefficiency?

The most reported issue isn't machine uptime, defective materials, operator skill/training, or resource scheduling. It's material flow management. In simpler terms, the #1 problem impacting output is "**getting the right parts to the right place at the right time**".

Material flow problems take many forms:

- Late replenishment of parts to an assembly line's stations
- Slow and error-prone kitting of parts prior to assembly
- Inability to change the routing of parts in response to machine uptime or operator availability
- Endless manual counting of parts to maintain even basic WIP inventories and daily productivity metrics
- Inability to easily flag and handle exceptional conditions such a QA holds and re-work
- Failures in detecting the delivery of work items to an incorrect manufacturing station or storage area.



ProVIEW was designed to tackle all of these issues and more — with one simple and elegant system. In nearly all installations, a ProVIEW solution will pay for itself in hard operating expenses within 12 to 18 months. Further, it was designed to operate with minimal disruption to existing processes and without the need for operator training.

ProVIEW is new and unique, but it is not unproven. Companies such as Daimler and many others are already using this system on their volume manufacturing lines.

Most importantly, ProVIEW's simple and elegant approach to material flow can be easily applied to nearly all material flow applications: kitting, build instructions, workflow management, replenishment, and more. A successful installation is easily leveraged across multiple lines.

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Material flow issues in real life

Bob's factory was losing its certification in gear manufacturing — threatening the viability of his plant. Over the last year, his factory had been missing daily production quotas — a problem that worsened each passing quarter as the number and complexity of gear SKUs grew relentlessly. Even a cursory review of his production process made it obvious that efficiently moving gears through the manufacturing process was his bottleneck. His tried and true method of applying paper barcode labels to the racks of gears to route them through the hobbing, heat treating, and polishing steps was breaking down.

His team would meet 8am each morning to analyze the current day's demand and attempted to create a schedule of production through the various manufacturing steps using a complex algorithm driven by human judgement, past experience, and luck. This schedule was committed to many hundreds of paper labels that were rushed out and applied to the gear racks that would then be loaded with gear blanks. Thereafter, factory operators would read these labels after each step to determine where to bring the racks next.

Problems were clear and critical:

1 **No amount of sophistication in the 8am scheduling could foresee all potential problems such as machine downtime, tooling changes, or quality holds.** Gear production would regularly come to a near standstill as problems inevitably cropped up. Rescheduling/reassigning routes for gear racks in process was prohibitively expensive – racks had to be tracked down and new labels applied. Many times factory operators compensated by ignoring the instructions on the labeling to bypass any issues. The result was chaos by late afternoon on the factory floor. Bob needed a system that would not only know what machines and operators were available (that, in fact, was the easy part), but also allowed him to instantly use this information to create optimized routing instructions for each rack after each step. And most importantly, a system that was "instantaneous" in updating the labels on his gear racks.

2 **Getting an accurate WIP inventory during the day was nearly impossible.** Without automated parts tracking, Bob was reduced to sending staff out to manually count product at each step. Without accurate WIP inventories, Bob had no way of knowing whether he was on track to meet his quota. Most importantly, he therefore had no way to adjust if he found he was off the pace at mid-day. He needed a means of seeing in near-real time the status of production against his daily quota in terms of progress through each manufacturing step.

3 **Kitting prior to production was chaotic.** Often, more complex gear assemblies were made up of many smaller individual parts which had to be gathered into the racks prior to beginning the manufacturing process. Pieces of paper on each rack detailed which parts were required. Then, when the kits was fully present, the rack's entry into the assembly process had to be synchronized with the availability of other key resources such as hobbing machines and/or operators. Half-assembled kits, kits with incorrect parts, and fully assembled kits that were not recognized as being ready all contributed to delays. Bob needed a simple "pick-to-light" process to get the right parts to the right kits and then, when complete, clearly signal readiness and timing to begin their manufacturing process.

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4 **Updating build instructions, especially during the production process, was difficult.** For instance, when tooling was changed at a hobbing machine, QA personnel would need to update the instructions to include an extra QA step to qualify the new tooling set. Post-it notes and crayons were used to make these updates – a highly unreliable methodology with no traceability. Bob needed a system that would display the right instructions at the right time given the location of the work item.

5 **Gear racks were often delivered to manufacturing stations out of sequence, destroying the value of the entire batch.** As heat treated gears are hard to distinguish from untreated gears, gear racks without heat treatment were many times mistakenly delivered to the "late stage" polishing station – resulting in a write-off of the WIP. Bob needed a system that would actively notify or signal operators when WIP arrived at the wrong station.

6 **Locating specific gear racks became an expensive game of hide and seek.** Individual gear racks, for instance those marked with a quality hold or those belonging to a specific job number, were very difficult to locate on the factory floor. Sometimes, even finding empty racks of the correct size to use to begin new batches were hard to find. Bob had teams of "runners" he used to hunt down gear racks, finding that proverbial needle in a haystack. Bob needed a system that automatically located individual racks on his factory floor based on their job number, condition, or other criteria without having to perform expensive check-in/out procedures at every possible location and without expensive manual searches.

Can you identify with any of these problems?

ProVIEW neatly and elegantly solves each one of these issues with ONE system — and pays for itself within 12–18 months on the savings from the elimination of the paper labels it replaces alone! Let us show how this can work for you.

See how Daimler and others are using ProVIEW by visiting www.omni-id.com/proview for customer success stories and more!

Omni-ID office locations: US | UK | Germany | China | India