

Stop “Waiting For Spare Parts” and start unlocking lost availability

As mining becomes more mechanised, an absence of spare parts can often lead to machine downtime and potentially impact productive mining time.

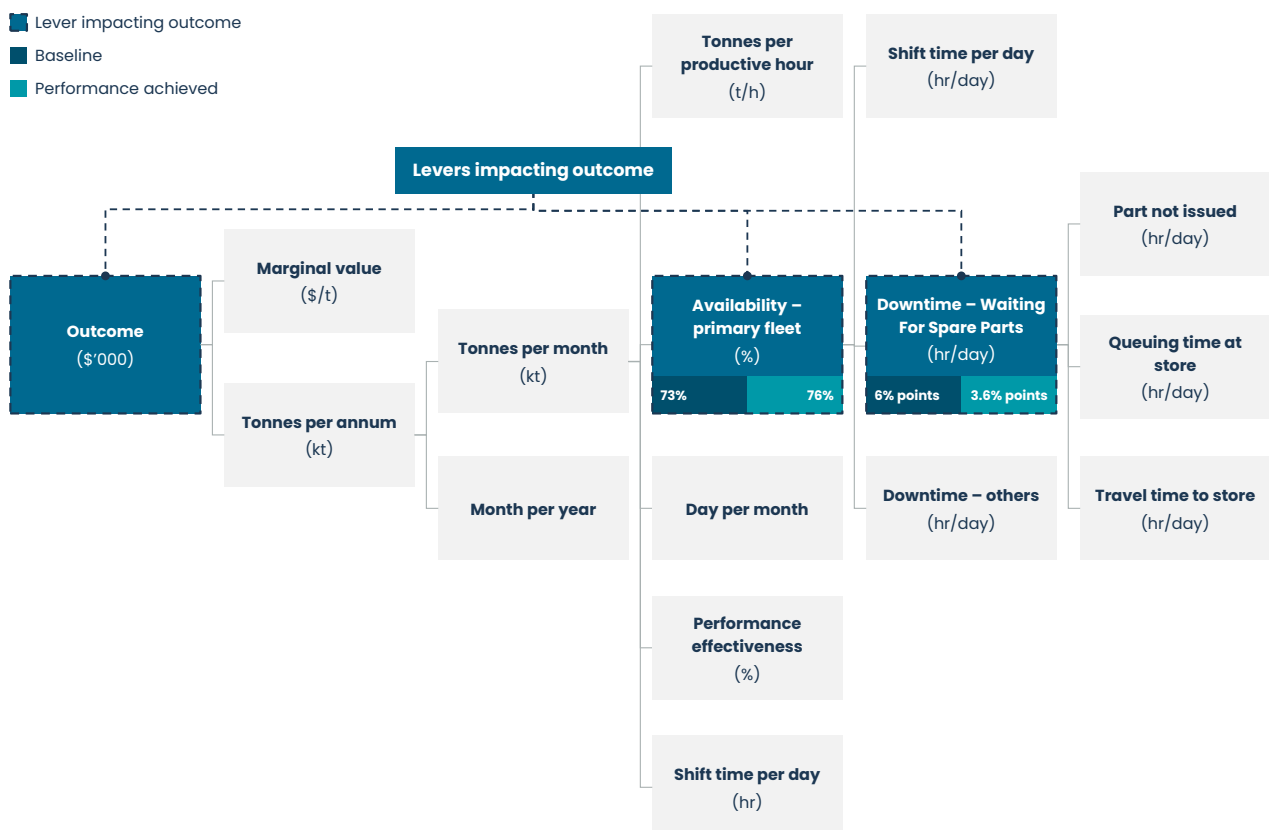
Managing the inbound supply chain is imperative for improving availability and operational performance. By addressing the root causes behind “Waiting For Spare Parts” events, miners can prevent lost availability and translate it directly into increased output to achieve immediate revenue gains.

Mechanisation and automation in mining

The push towards mechanisation and automation in mining requires effective management of the inbound supply chain to maintain production. In traditional mining operations, inventory and warehouse management have not been prioritised as most organisations were focused on reducing working capital and holding minimal inventory. However, when parts are not available, valuable production time is lost as machines are not running due to “Waiting For Spare Parts” (WFSP). This can represent between 3% and 6% of lost availability, driving significant losses in production and revenue.

Implementing a programme to measure, identify and address the root causes of Waiting For Spare Parts can quickly unlock lost availability, translating directly into increased output and revenue.

Example value driver tree where we supported a client to improve fleet availability by 3% and reduce downtime due to Waiting For Spare Parts by 2.4% points



Identifying root causes for “Waiting For Spare Parts”

Effective programmes find root causes and address them to drive increased output. We typically observe five main root causes for WFSP:

01 Stock not ordered

This can occur due to low stock accuracy, a lack of coordination between Engineering and Supply Chain (often stemming from poor visibility on planned maintenance), wrong or obsolete inventory parameters, or an inefficient purchasing process.

02 Stock ordered but not received

This may stem from poor supplier performance or the continuing volatility in the global supply chain as a result of the COVID pandemic and 2022 Russian invasion of Ukraine.

03 Stock not found

Typically, a result of poor stock management, ineffective binning and labelling, or poor front-line store knowledge in identifying parts. It is particularly exacerbated by a high number of SKUs and a distributed network of warehouses.

04 Stock in wrong location

In mines with multiple storage locations, stock might be available in another store (squirrel stores, surface store instead of underground store, etc.). This occurs due to inefficiencies in the transfer process or when replenishment rules between different stock locations are wrongly defined.

05 Stock available, but issuing is delayed

Inefficient process from reservation to issuing – warehouse and internal logistics could be mismatched or have poor communication, leading to availability but failure to deliver parts to where they are needed.

Reducing “Waiting For Spare Parts” and increasing production time

Driving productivity through spare parts management is a careful balancing act – the number and type of spares needs to be just right, as too little impacts a mine’s performance, while too many impacts the bottom line while bringing new problems, such as stock inaccuracy and storage constraints, to the fore. Getting the balance right helps ensure ample parts of the right type are available where and when they are needed, reducing WFSP events.

To regain lost productivity, miners should identify and address root causes and set up the organisation to deliver.

01 Identify and address the root causes of Waiting For Spare Parts

Identifying root causes and their impacts paves the way for the most suitable improvement levers to be applied. Start by asking:

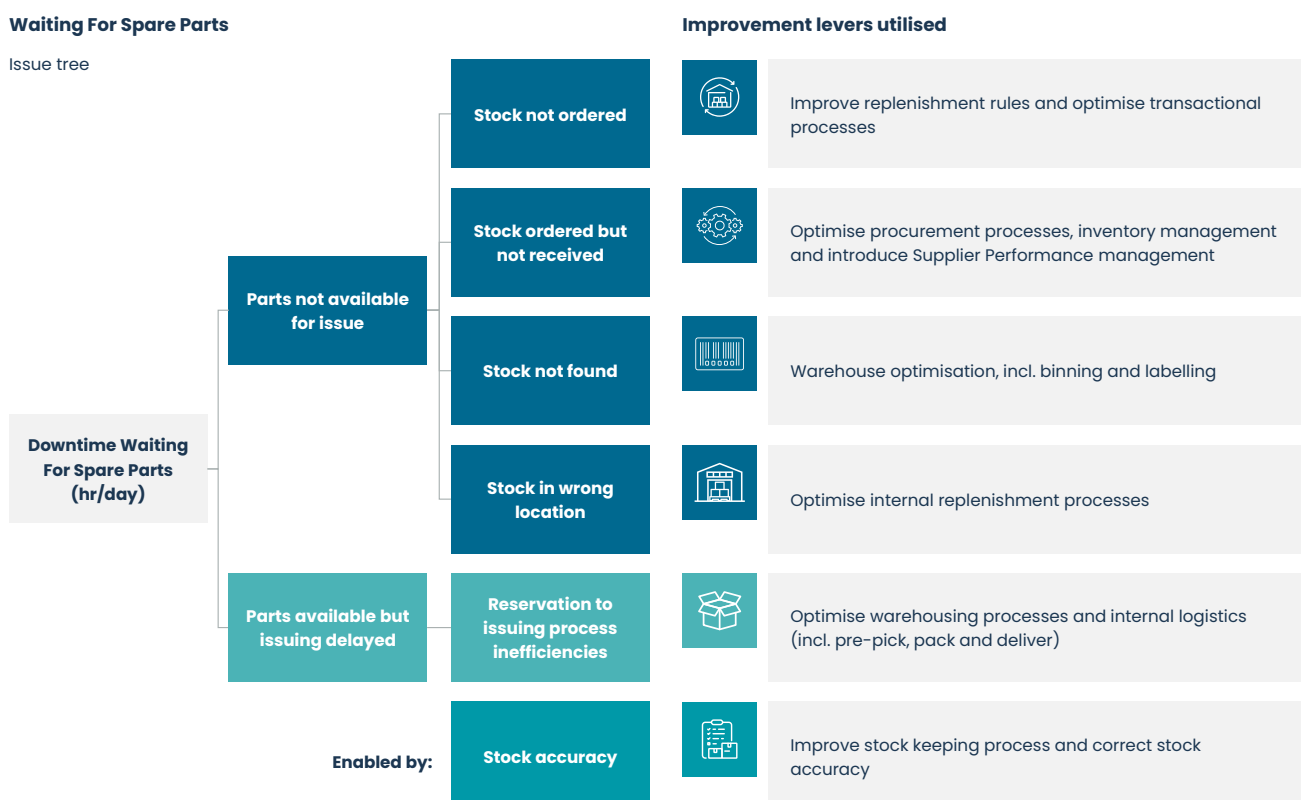
- Are your inventory levels optimised?
- Does your organisation understand current stock levels?
- How streamlined are your warehouse operations?
- Do the engineering and procurement teams work together to identify and solve supply chain problems?

These answers offer a fuller picture of which root causes are playing an oversized role and what needs to be prioritised. If poor process planning is causing WFSP events (e.g., stock is ordered but not received) then inventory management is a possible improvement lever to fix this. Further, identifying and targeting these quick wins drives short-term success, momentum and provides incentives for further improvements. This helps build buy-in from stakeholders, creating the case for larger changes which may be necessary to create a lasting impact.

For example, we worked with a gold miner who purchased 75% of their stock on-demand. When parts availability fell 5%, production was impacted as hauling became the bottleneck. Diving into the data, they found weak processes and inventory maintenance were the root causes. Armed with this information, they developed an end-to-end process from maintenance planning to execution, increasing the availability of their main fleet from 70% to 87%. This led to inventory management optimisation across their procurement function and reduced spare parts stock by US\$10m.

Prioritisation of ideas example

Example of root cause analysis and improvement levers to address WFSP events



02 Set up the organisation to deliver

To fully capture and sustain benefits across the long term, organisations need to adapt so their teams are working towards a common goal. This typically requires establishing alignment and ownership across the Engineering and Supply Chain functions, measuring and holding individuals to account to meet target KPIs for WFSP events and building frontline capability to drive ongoing performance improvements.

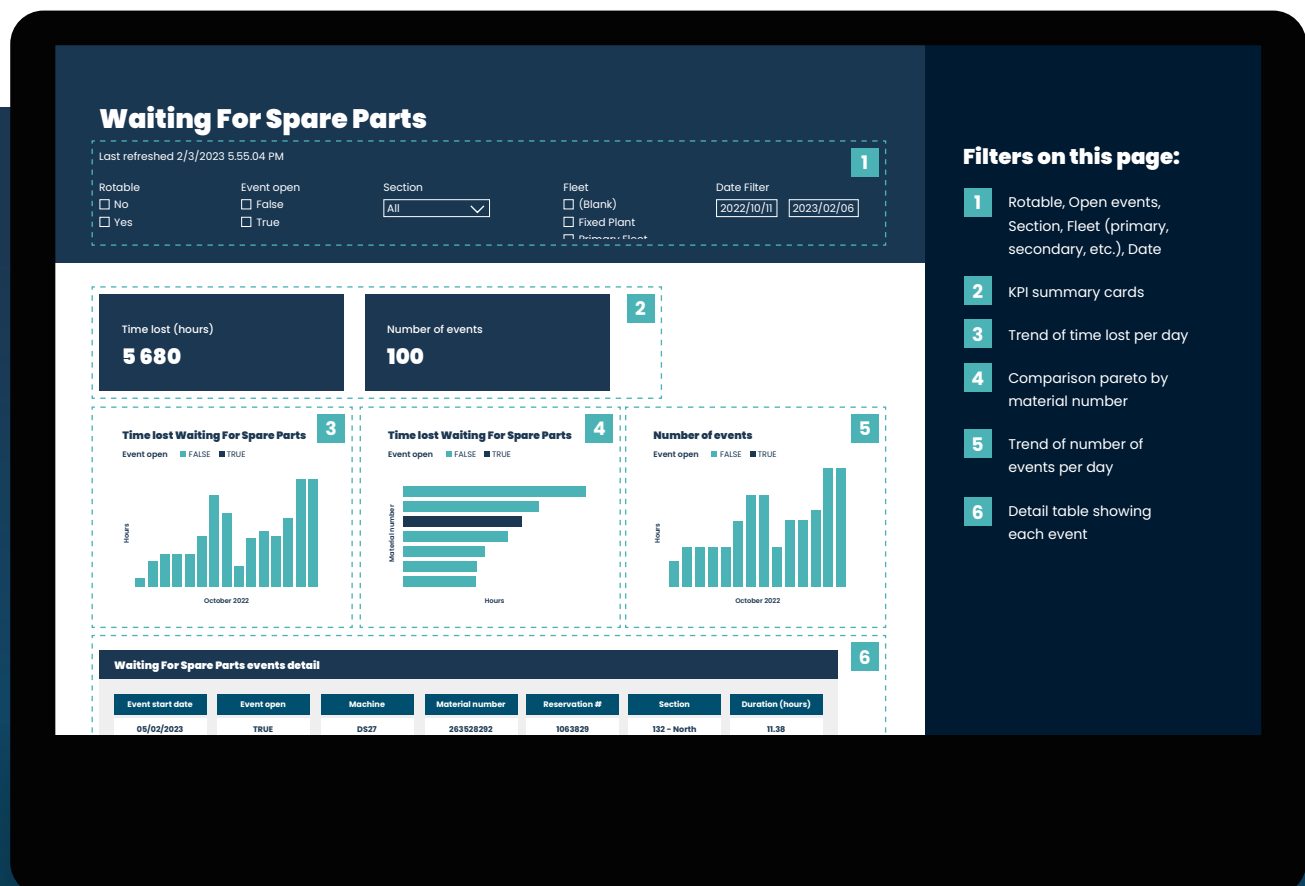
This can lead to massive gains. For example, an underground mine with one the world's largest underground trackless mobile machines (TMM) was facing WFSP issues. An analysis identified the root cause to be a dysfunctional Inbound Supply Chain department (e.g., 2% stock accuracy) whose priorities were misaligned with Engineering.

By demonstrating early benefits through corrections in basic operational disciplines (e.g., binning and labelling) they were able to improve delivery of spares to the underground store. This was supported by changing frontline behavioural to include daily stand-ups, visual boards, communication posters and KPI reporting to lock in the changes. After adopting these initial changes, work shifted to building capability in priority departments like Engineering. These initiatives helped reduce WFSP events by 42% in 12 weeks, enabling an increase in TMM availability by 3.6%.



Visual board

Example of a visual board in an underground mine focused on reducing WFSP events and improving productivity





Conclusion

Miners can immediately realise production and revenue benefits by engaging their Supply Chain teams to reduce 'Waiting For Spare Parts' events. By going beyond surface-level issues to uncover and resolve root causes, they can lock in changes to create a lasting impact.

About the authors



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