



Optimize

Do You Know the True Cost of Your Facility's Downtime?

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Most manufacturing production managers will likely agree that managing downtime is a top workday priority. When managed well, downtime can help boost efficiency, production and profitability. However, when mismanaged, downtime can strain production and create various downstream issues until a solution is found.

Known fact

Manufacturing downtime is costly.

Lesser-known fact

Over 80% of companies are unable to calculate their true downtime costs correctly.¹

Downtime is inevitable in manufacturing, but **all downtime is not the same**.

Planned downtime allows manufacturers to intentionally stop production to efficiently manage critical responsibilities, like machine maintenance, facility cleaning and equipment changeovers, to maximize production uptime and mitigate future disruptions.

Unplanned downtime occurs when unexpected failure, such as equipment malfunction, process breakdowns and human error, halts production and negatively affects uptime and revenue until the issue is identified and corrected.

Similar names, but very different circumstances.

Uncovering the costs

Where planned downtime provides an opportunity to forecast the cost of stopping production, unplanned downtime can only be analyzed post-disruption and if accurate performance information is available.

To calculate your unplanned downtime as a percentage of time, you must:²

1. Determine the **planned operating time**, in hours, for a specific and measurable timeframe, such as one week, one month or one quarter.
2. Track the number of **unplanned downtime** hours experienced during the determined timeframe.


Then, using the formula below, you can calculate what percentage of your planned operating time is adversely affected by unplanned downtime.

$$\frac{\text{Unplanned Downtime}}{\text{Planned operating time}} \times 100 = \text{Downtime \%}$$













Understanding the cost of your unplanned downtime in terms of lost dollars requires a more comprehensive set of data points, including:³

- **Planned operating time** (hours)
- **Actual operating time** (hours)
- **Average total number of units produced** (during actual operating time)
- **Gross profit per unit**

From here, you can input your data points into the four-step formula shown below.



CALCULATE PROFITS LOST FROM DOWNTIME

| | | | | |
|---|----------|---|-----|---|
|  Planned Operating Time | $-$ |  Actual Operating Time | $=$ |  Hours of Unplanned Downtime |
|  Total of Units Produced | \div |  Planned Operating Time | $=$ |  Average Production Rate per Hour |
|  Hours of Unplanned Downtime | \times |  Average Production Rate | $=$ |  Number of Units Not Produced |
|  Number of Units Not Produced | \times |  Gross Profit per Unit | $=$ |  Total Gross Losses |

After calculating the percentage of time and total gross dollars lost to unplanned downtime, you can begin to establish the critical performance benchmarks needed to measure future productivity and remove your business from the over 80% of companies that are unable to calculate their true downtime costs correctly.

Reducing unplanned downtime

Quantifying the impact of unplanned downtime is important, but implementing corrective measures is how true productivity value is increased. Here are three actions to take immediately:

1. **Provide better training:** No matter their years of experience, all employees can benefit from continuous training to ensure better safety and productivity. Human error is a major contributor to unplanned downtime, so keeping your team prepared can help reduce the number of production-halting mistakes.
2. **Optimize production processes:** There is always room to improve the way the job gets done. From planning large capital expenditures, like upgrading enterprise technology, to making incremental adjustments, such as ensuring you have the right supply of industrial wipes for cleaning and finishing products on the production floor. Every improvement you make helps to optimize for future success.
3. **Implement the right maintenance strategy:** Poor maintenance practices will almost always result in unplanned downtime. Whether it's Predictive, Preventive or Reactive, identifying and implementing the right maintenance strategy to fulfill the right purpose in your facility puts manufacturers on the path to improved uptime and productivity.

¹The actual cost of downtime in the manufacturing industry,

<https://iiot-world.com/predictive-analytics/predictive-maintenance/the-actual-cost-of-downtime-in-the-manufacturing-industry/>

² How to calculate machine downtime, <https://www.resco.net/learning/machine-downtime/>

³ The Cost Of Downtime (And How To Calculate Your Own), <https://theupapp.com/the-cost-of-downtime-and-how-to-calculate-your-own/>

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