Tip Sheet

Checklist: Estimating OEE

Questions to Ask When Estimating Ignition OEE Downtime

The following is a guide of questions to ask to accurately estimate and implement an OEE downtime system. In some implementations, there may be multiple methods used depending on the site, area of the plant, or process and a separate checklist for each is recommended.

Is management committed? ❑ yes | ❑ no

Are work orders going to be used? ❑ yes | ❑ no

If yes what is the source?

❑   Using Ignition to input work orders.

- or -

❑   Interfacing with ERP or other system.

• Who will you be working with on the ERP end? _____

• Will there be any updates back to the ERP system? ❑ yes | ❑ no

• Are there any intermediary database tables? ❑ yes | ❑ no

• Are web services being used? ❑ yes | ❑ no

Will product codes be used? ❑ yes | ❑ no

If yes what is the source?

❑   Using Ignition to input work orders.

- or -

❑   Interfacing with ERP or other system.

• Who will you be working with on the ERP end? _____

• Are there any intermediary database tables? ❑ yes | ❑ no

• Are web services being used? ❑ yes | ❑ no

Are schedules going to be used? ❑ yes | ❑ no

If yes what is the source?

❑   Using Ignition to input production schedule.

- or -

❑   Interfacing with ERP or other system.

• Who will you be working with on the ERP end? _____

• Are there any intermediary database tables? ❑ yes | ❑ no

• Are web services being used? ❑ yes | ❑ no

inductive automation

800.266.7798
www.inductiveautomation.com

Ignition
by inductive automation

HMI • SCADA • MES Software

How will production runs be started and stopped?

- ❑ Manually by selecting the product code.
- or -
- ❑ Manually from the schedule by the operator or supervisor.
- or -
- ❑ Automatically based on the schedule.
- or -
- ❑ Automatically driven by a product code from another system, such as a product code in a PLC or external database.
- or -
- ❑ The line runs continuously.

How will downtime information be collected?

- ❑ Manually entered by the operator.
- or -
- ❑ Automatically through OPC.
- or -
- ❑ A hybrid of automatically and operator or supervisor manually providing additional details.

How will production counts be collected?

- ❑ Manually entered by the operator.
- or -
- ❑ Automatically through OPC.
- or -
- ❑ From the ERP system.

How will waste counts be collected?

- ❑ Using units started versus good units produced. Make sure accumulation sections don't exist.
- or -
- ❑ Manually entered by the operator.
- or -
- ❑ Entered after the production run.
- or -
- ❑ Automatically through OPC.
- or -
- ❑ From the ERP system.

Does the customer want different or additional screens that are not included in the application?

Does the customer want different or additional reports that are not included in the application?
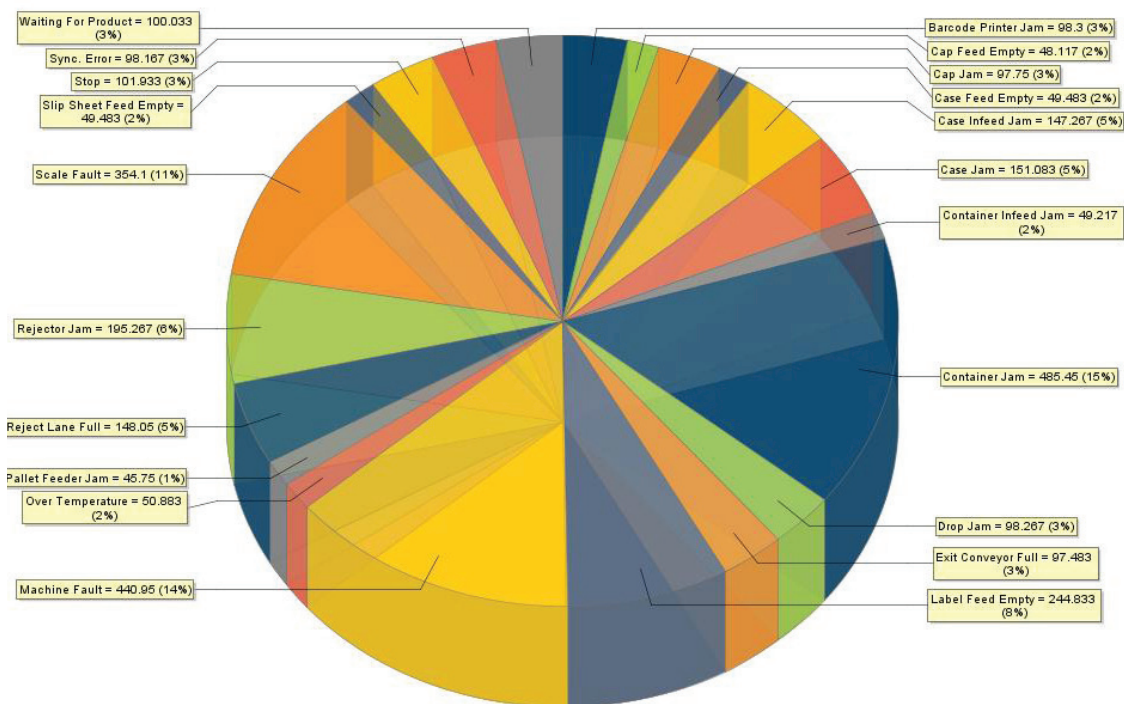
Are there any additional requirements?

Look for any other requirements that are unique to the customer's production environment. For example, this includes functionality such as:

• Lines being in standby mode until it is first started.

• Production or waste counts being adjusted after the production run has completed.

Determine the number of required cells.

A cell is a machine that OEE and downtime information is collected for and analyzed by. Below are some key points to consider when determining the number of cells to purchase:

• A line can be set up with one cell, but if it contains ten machines then analysis by machine cannot be accomplished.
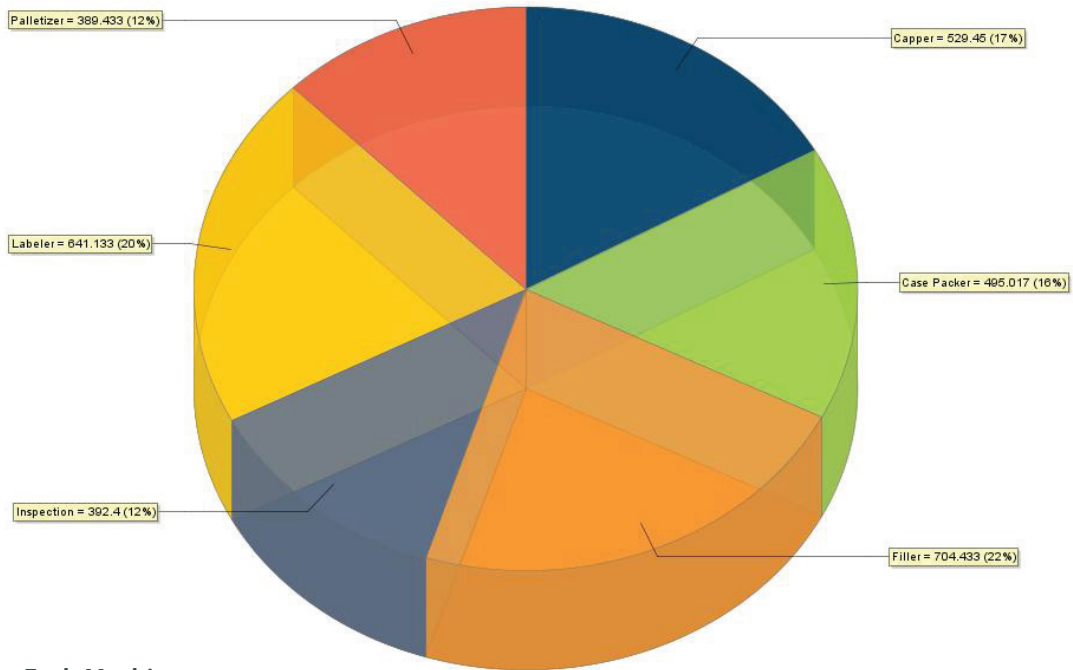

Pie chart labels:
- Waiting For Product = 100.033 (3%)
- Sync. Error = 98.167 (3%)
- Stop = 101.933 (3%)
- Slip Sheet Feed Empty = 49.483 (2%)
- Scale Fault = 354.1 (11%)
- Rejector Jam = 195.267 (6%)
- Reject Lane Full = 148.05 (5%)
- Pallet Feeder Jam = 45.75 (1%)
- Over Temperature = 50.883 (2%)
- Machine Fault = 440.95 (14%)
- Barcode Printer Jam = 98.3 (3%)
- Cap Feed Empty = 48.117 (2%)
- Cap Jam = 97.75 (3%)
- Case Feed Empty = 49.483 (2%)
- Case Infeed Jam = 147.267 (5%)
- Case Jam = 151.083 (5%)
- Container Infeed Jam = 49.217 (2%)
- Container Jam = 485.45 (15%)
- Drop Jam = 98.267 (3%)
- Exit Conveyor Full = 97.483 (3%)
- Label Feed Empty = 244.833 (8%)

Without a Cell for Each Machine

It is very difficult to get any granulartiy of data without a cell for each macnine because all downtime events can get lumped all together.
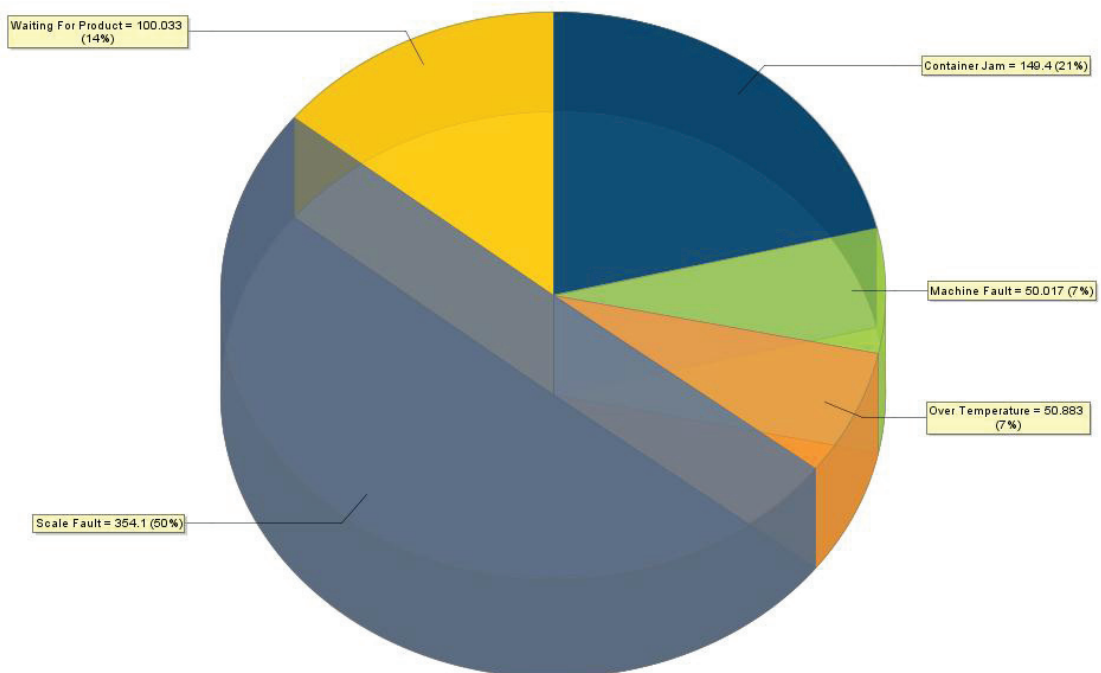
With a Cell for Each Machine

It is easier to narrow down which machine has the most downtime if they all have individual cells.

Palletizer = 389.433 (12%)

Capper = 529.45 (17%)

Labeler = 641.133 (20%)

Case Packer = 495.017 (16%)

Inspection = 392.4 (12%)

Filler = 704.433 (22%)

Look into Each Machine

It is possible to look into the downtime of a single machine if it has its own cell.

Waiting For Product = 100.033 (14%)

Container Jam = 149.4 (21%)

Machine Fault = 50.017 (7%)

Over Temperature = 50.883 (7%)

Scale Fault = 354.1 (50%)

- Each production line requires at least one cell.

- It may not be cost-effective to purchase a cell for every machine in your facility. A conveyor is an example of this. Instead of purchasing many cells, consider conbining one cell with either the major upstream or downstream machine.

- Mono-block machines such as a filler and capper that are mechanically tied together are better suited for a single cell.

- The OEE Downtime Module has built-in algorithms to determine the true line downtime reasons as opposed to combining muliple cell downtimes together, which is inaccurate. These algorithms require cells for each machine but substantially reduce the PLC programming labor to accomplish the same functionality.