



How To Build A Business Case For Shopfloor-Online

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Sometimes it is easy to see where a software solution would make a valuable contribution to your business, but constructing a robust business case to convince your management team can be more difficult.

Below is a set of practical examples of how using Shopfloor-Online from Lighthouse Systems can be tracked to deliver genuine and measurable bottom-line benefits.

We will take each of the manufacturing objectives below and look at the strategies and associated problems that might be involved in trying to achieve them. We then detail how Shopfloor-Online can address the objective successfully.

Of course the relevance of these objectives will differ by company and situation, and they may not all be pertinent to you. But by focussing on those that are you will be able structure a convincing proposal for your organisation.

Reduce costs	Direct Labour, Indirect Labour, Material Costs, IT Systems, Reduce Paper on the Shopfloor
Reduce Inventory	Work in Progress
Increase Output	Reduce downtime, Reduce cycle-time, Reduce spoilage
Customer Requirements	Cost of compliance
Customer Satisfaction	Reduce Customer Complaints, Improve Quality, Increase % on Time Delivery
Improve Control & Communications	Production Reporting, Improved Communication, Quality Reporting,
Manage across multiple manufacturing plants	Benchmarking

Reducing Costs

Direct Labour - Reduce the direct labour force

Possible Strategy	Increase Operator responsibility. For example make Operators responsible for quality, by performing their own checks, reducing the need for inspection (e.g. roving inspectors)
Problem	Moving the burden of Quality checks to front-line Operators can be a problem because they can be time consuming. The checks need to be made as quick and easy to perform as possible. Once delegated, you need to know that they are actually being carried out.
Shopfloor-Online provides	Shopfloor-Online has the quality control plan. It knows what checks have to be performed and prompts Operators to make checks and record results. Management and Supervisors can view reports to see whether checks have or have not been done and follow up accordingly.

Possible Strategy	Make Operators responsible for more Machines.
Problem	Machines have to be monitored, but they can be spread out physically over the shop floor.
Shopfloor-Online provides	Because Shopfloor-Online can monitor machines and the progress of jobs, Operators can be alerted when needed, from one location, rather than having to keep an eye on many things at once.

Direct Labour - Reduce the work of direct labour, releasing time for other tasks

Possible Strategy	Improve speed of performing quality checks by linking to gauging.
Problem	Reading measurements from gauges and either writing down or entering manually is time consuming and error prone.
Shopfloor-Online provides	Linking directly to measurement gauges and systems can reduce the time taken to perform the check by 70%. Shopfloor-Online can link to virtually any gauge or measuring system.

Possible Strategy	Automatic capture of shopfloor data to save filling in paper records.
Problem	Reading measurements from gauges and either writing them down or entering them manually is time consuming and error prone.
Shopfloor-Online provides	Shopfloor-Online can link to the machines to monitor downtime and production counts automatically, saving hours of Operator time and improving accuracy.

Indirect labour

Possible Strategy	Collect data electronically rather than by paper records. Use the systems to automatically analyse data and run reports.
Problem	In many cases today Operators are filling in paper records at their workstations: but someone has to provide blank worksheets; collect worksheets at the end of the shift; transcribe the information (say into a spreadsheet); and then provide some basic analysis (e.g. production, spoilage and downtime figures/graphs); and finally file the paper. It is a huge, time consuming job and the information is always out of date and error prone.
Shopfloor-Online provides	Shopfloor-Online collects the data once at source. There is no transcribing of data. No paper to produce, collect, collate or file. The information is available in real-time and it is accurate. Furthermore with all the history of data there is instant availability to a wide range of reports and analysis.

Material Costs - More control on expensive raw materials

Possible Strategy	Reduce material costs through improved process control.
Problem	Often processes involve the application of raw materials to a minimum specification (e.g. filling or coating processes). In many cases the manufacturing specifications are set to ensure customer conformance but if the process could be controlled better, the process set point could be set lower and still meet the minimum requirement. A saving of 1% of material cost can add up if the material is a significant one.
Shopfloor-Online provides	<p>If the material concerned is significant no doubt it will already be monitored. However, with SPC analysis, the process capability can be established, and with focused effort improved, then with real-time SPC analysis the process can be monitored. Any change in process conditions that could give rise to non-conformance can be picked up early via alarms to Operators.</p> <p>Less spoilage, less rework, improve production capacity</p>

Possible Strategy	Reduce spoilage. Every time non-conforming product is made, raw materials are wasted (as is the lost production time).
Problem	In many cases spoilage cannot be salvaged, if so the raw materials are lost.
Shopfloor-Online provides	Shopfloor-Online is able to track spoilage in real-time, either by counting spoilage where it's detected or by dynamically comparing output with input. If spoilage thresholds are exceeded alarms can be raised to get attention focused accordingly.

IT Systems - Reduce cost of maintaining existing systems

Possible Strategy	Move existing systems off expensive hardware platforms.
Problem	Some legacy systems may be running on expensive hardware platforms (e.g. Mini-computers or Mainframes) that may have significant support costs associated with them.
Shopfloor-Online provides	Shopfloor-Online can run on standard Intel and Unix platforms and because it is a web based solution it is centrally managed and maintained.

Possible Strategy	Reduce complexity of support by switching to centrally managed systems.
Problem	Some existing solutions may be expensive to support due to their distributed nature. This is especially true of client/server solutions, when an update is released, all of the client PCs have to be updated.
Shopfloor-Online provides	Shopfloor-Online is web based, there is nothing to install and maintain on client PCs, which makes the job of support very much easier.

IT Systems - Reduce cost of maintaining in-house developed systems

Possible Strategy	Reduce cost of maintaining in-house developed systems.
Problem	Plant systems have often been developed on the basis that package solutions won't do the job. However, with rapid changes in technology in-house systems are quickly obsolete, and the cost of maintaining the development can be very high.
Shopfloor-Online provides	Shopfloor-Online is designed to be a very adaptable solution. It has already been successfully deployed in industries as diverse as Packaging, Automotive, Aerospace, Pharmaceuticals, and Electronics.

IT Systems - Reduce the number of IT systems, less maintenance costs, less cost to integrate

Possible Strategy	Consolidate the IT systems, reduce the number of suppliers.
Problem	Frequently companies have a range of different systems from different suppliers, e.g. Quality, Check weighing, Machine Monitoring, OEE, SPC, Scada,...
Shopfloor-Online provides	Shopfloor-Online is one integrated system that can replace systems in areas like Downtime, Spoilage, Quality, OEE, SPC

Reduce Paper on the Shopfloor - Less paper to print, distribute, file and transcribe

Possible Strategy	Reduce the paper used on the shopfloor. Automate data collection where possible, e.g. directly from the machines, PLCs, gauges, sensors.
Problem	Paper based systems carry a lot of hidden costs: production of paper, time to record information, collection of paper, analysis, filing.
Shopfloor-Online provides	Shopfloor-Online can interface to a wide range of production and quality equipment. It can also interface to other systems like the ERP system so that data moves freely between systems.

Reduce Paper on the Shopfloor - Reduce costs of issuing paper-based documents to the shop-floor

Possible Strategy	Provide access to Shopfloor documents electronically.
Problem	<p>There is typically a vast array of documents that have to be made available to the shopfloor, ranging from SOPs, ISO procedures, set up and clean down instructions, drawings, and product specifications. All of this paperwork has to be made available - usually in printed form.</p> <p>When new revisions of documents are issued, all this paper has to be replaced - this is time-consuming and error prone.</p>
Shopfloor-Online provides	<p>Shopfloor-Online can link to all these documents and provide them electronically. It can do so in an intelligent way, only showing documents that are relevant to the current circumstances.</p> <p>By providing documents in this way the release of new documents is greatly simplified.</p>

Reduce Inventory**Reduce Work In Progress**

Possible Strategy	Accurately locate inventory.
Problem	Keeping the least amount of stock but being able to meet customer requirements.
Shopfloor-Online provides	Shopfloor-Online reduces manufacturing cycle times and makes major gains in decreasing in-progress inventory. Allow inventory to be allocated as used. The ability to keep an accurate track on inventory by recording exactly what is being used on each job means that minimum stock of raw materials needs to be held.

Increase Output

Reduce Downtime - Improve output

Possible Strategy	Focused improvement activity based on analysis of detailed, accurate information.
Problem	Often companies have at best a rough view of downtime. Especially if data is collected manually. Big downtime events tend to be recorded, but many of the smaller events do not. Hence the downtime information is inaccurate. It is also usually difficult to analyse.
Shopfloor-Online provides	Shopfloor-Online provides all the reporting tools you need. For example, it can analyse downtime by reason, machine, shift, product, over a time period. It can show the results as a graph. It can show downtime trends over time. Downtime information can be entered by operations manually, but it's even better still to connect directly to machines so that downtime events are automatically captured. This reduces operator load and increases accuracy.

Reduce Downtime - Faster change overs

Possible Strategy	Faster change-overs.
Problem	Product change-overs can vary depending on how different the products are that are being changed. Change-overs may require more skilled personnel to be involved. They may have to be notified that they are required.
Shopfloor-Online provides	Shopfloor-Online can monitor the progress of a job, especially if it is connected to the machine to count parts being made. It can predict, based on current performance, when the job will end. It can then notify key personnel to the fact, enabling them to organise change-overs more efficiently.

Reduce Downtime - Better analysis of Tool wear, only change when required

Possible Strategy	Maintenance to have better analysis of Tool wear - only change when required.
Problem	Often maintenance schedules are drawn up and play on the "safe-side", changing tools after a time period in use. This can mean doing more maintenance than is perhaps really necessary.
Shopfloor-Online provides	Shopfloor-Online has real-time SPC analysis, if used to track key features, tool wear can be monitored and in some cases tool changes can be carried out when needed.

Reduce cycle-time - Improve output by reducing the cycle-time

Possible Strategy	Focused improvement activity based on analysis of detailed, accurate information.
Problem	Real cycle-time data is often very difficult to acquire. Sometimes processes are run at slower speeds because an Operator may perceive that a better result will ensue.
Shopfloor-Online provides	Shopfloor-Online can track all 3 components of OEE: downtime, performance and quality. Performance encompasses actual cycle time and there are numerous reports and charts to cut the data by many aspects. E.g. Machine, product, shift date etc.

Reduce Spoilage - Improve output by reducing the spoilage

Possible Strategy	Focused improvement activity based on analysis of detailed, accurate information.
Problem	When working to order quantities, Spoilage means production runs have to last longer to make enough good parts.
Shopfloor-Online provides	Shopfloor-Online has numerous reports and charts to cut spoilage data by many aspects e.g.: machine, product, shift date etc. With this information analysis can be carried out to identify the areas to focus on for improvement. Improvements can be tracked over time to ensure any gains made are kept.

Customer Requirements

Cost of compliance - Meet requirements for generating customer specific certificates & reports

Possible Strategy	Automate production of certificates / batch records.
Problem	In some industries it's essential to produce documents with the products you make to certificate the batch produced, this could be a complete record of raw materials used, batches of output made, and quality checks carried out. Producing these reports can be time consuming especially if the data is all manually recorded.
Shopfloor-Online provides	<p>Shopfloor-Online can capture all the data - the batch record - in many cases electronically and automatically to produce a batch record.</p> <p>Electronic signature is the way to capture batch record information electronically and still guarantee record authentication.</p> <p>Shopfloor-Online assists with FDA CFR11 compliance - to ensure proper security of users creating batch record information. You have user security and authentication on separate transaction logs and a complete change history for any piece of information.</p>

Cost of compliance - Meet customer requirements for capability measures

Possible Strategy	<p>Capture process data and produce capability studies as required.</p> <p>Maintain process control by alerting Operators to process violations.</p>
Problem	Many companies have to produce capability studies for their customers and demonstrate the use of SPC techniques in their processes. Sometimes this is piece-meal and ad-hoc.
Shopfloor-Online provides	Shopfloor-Online has the ability to capture product and process data; to perform real-time SPC analysis to show process control; and to produce capability analysis as required. A wide range of reports is available to analyse capability for key process or product features.

Customer Satisfaction

Reduce Customer Complaints – Less effort for investigations, responses, remedies

Possible Strategy	Improve traceability (Works Order, Materials, Machines, Quality, and Issues).
Problem	Many companies receive customer complaints to which they have to respond. This usually involves finding old records and trying to uncover what was happening in the process at the time of the complaint. Depending on how the information is recorded and stored this can be time consuming.
Shopfloor-Online provides	Shopfloor-Online uses a relational database and all information related to a Job (batch), date, shift, machine, product, etc. is recorded. Carrying out such investigations is simply a matter of running the appropriate reports.

Reduce Customer Complaints - Less returns

Possible Strategy	More product right first time through improved quality.
Problem	<p>Product returns are expensive in all respects because of the lost production time, lost raw materials, handling costs, and time and cost to address the issue.</p> <p>In some cases returns stem from poor quality that has slipped through the net. Quality control that relies on inspection rather than prevention is unreliable. SPC is a good technique for maintaining quality under a sampling regime for testing.</p> <p>SPC data analysis can also be used for process improvement when the data is made available to the right people.</p>
Shopfloor-Online provides	<p>Shopfloor-Online has the ability to capture product and process data.</p> <p>It can perform real-time SPC analysis to show process control and alert Operators to process shifts.</p> <p>It can produce capability analysis as required for process improvement teams.</p> <p>A wide range of reports is available to analyse capability for key process or product features.</p>

Reduce Customer Complaints - Reduce Cost of Warranties

Possible Strategy	Demonstrate conformance to the Quality System by running reports that give an audit trail of how the system is being followed.
Problem	Often companies are audited to see that they are adhering to the Quality System. This usually involves things like proving that quality checks are being carried out with the agreed sample sizes and frequencies and that corrective actions are being taken.
Shopfloor-Online provides	<p>Shopfloor-Online embodies the control plan. It prompts operators to perform checks in a prescribed manner with a set frequency. It is very simple to see that checks have been carried out when they should have been and that they are complete. Proof of following the control plan is simply a case of running a report.</p> <p>Any process violations (Out of Spec/Control) are flagged Responses to violations e.g. corrective actions can also be recorded</p>

Improve Quality - Improved quality of products, less effort for investigations, responses, remedies, less returns, Reduce cost of warranties

Possible Strategy	Switch from Inspection based quality method to process control (with SPC).
Problem	Quality control that relies on inspection rather than prevention is unreliable. SPC is a good technique for maintaining quality under a sampling regime for testing. SPC data analysis can also be used for process improvement when the data is made available to the right people.
Shopfloor-Online provides	<p>Shopfloor-Online has the ability to capture product and process data.</p> <p>It can perform real-time SPC analysis to show process control and alert Operators to process shifts.</p> <p>It can produce capability analysis as required for process improvement teams.</p> <p>A wide range of reports is available to analyse capability for key process or product features.</p>

Improve Quality - Support 6 sigma

Possible Strategy	Support 6 Sigma initiatives with data collection, analysis, reporting and bench-marking.
Problem	6 sigma techniques focus on the Plan, Do, Analyse, Act cycle. They require data to be captured and analysed.
Shopfloor-Online provides	<p>Shopfloor-Online has the ability to capture product and process data.</p> <p>It can perform real-time SPC analysis to show process control and alert Operators to process shifts.</p> <p>It can produce capability analysis as required for process improvement teams.</p> <p>A wide range of reports is available to analyse capability for key process or product features.</p>

Improve Quality - Improve reputation

Possible Strategy	Better feedback to everyone involved in planning and executing the production schedule.
Problem	Often production planners are disconnected from what is happening on the shopfloor. It can make the dynamic rescheduling of Jobs difficult.
Shopfloor-Online provides	<p>Shopfloor-Online monitors all aspects of production. Progress is monitored and problems tracked.</p> <p>Planners can see the state of Jobs and see if there is a problem.</p> <p>The production schedule can then be changed to address problems based on accurate information.</p>

Increase % on Time Delivery

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Shopfloor-Online provides	<p>Shopfloor-Online monitors all aspects of production. Progress is monitored and problems tracked.</p> <p>Planners can see the state of Jobs and see if there is a problem. The production schedule can then be changed to address problems based on accurate information.</p>

Improve Control & Communications

Production Reporting - Quick access to crucial information

Possible Strategy	Provide accurate, real-time information.
Problem	In many cases production information is not current; is late; and inaccurate. It is also not shared; different people within the organisation can be working from different information.
Shopfloor-Online provides	Shopfloor-Online uses one relational database. It has one copy of the data, one set of information available to everyone.

Production Reporting - Quick access to crucial information

Possible Strategy	Access from any PC.
Problem	Information is sometimes only available in one place, making access to that information difficult.
Shopfloor-Online provides	Shopfloor-Online is web-based it can be accessed easily from any PC on the network.

Production Reporting - Exception reporting

Possible Strategy	Raise email/pager alarms for critical situations.
Problem	Increasingly there are fewer resources to do more work. Managers need reports by exception to make their life easier.
Shopfloor-Online provides	Shopfloor-Online provides exception based reporting. Exceptions can be run as reports or if serious enough they can produce email or pager alarm notifications.

Improved Communication - Shift to shift communication

Possible Strategy	Share information about how machines are running.
Problem	Often there is very little shift-to-shift communication. It is too time consuming to record information on paper. Furthermore in some environments Operators have their own "favourites" or views as to how processes should be run, and are liable to change the process.
Shopfloor-Online provides	It's easier to record information electronically so people are more likely to do it than use pieces of paper. The Line Logbook allows operators and shopfloor personnel to record comments within the system. Comments can be recalled via reports at any time. Supervisors joining a shift can see where problems have occurred and where their attentions need to be focused. Exception reporting means areas of poor performance can receive immediate attention.

Improved Communication - Transfer process knowledge

Possible Strategy	Transfer Process knowledge.
Problem	Distribute best practice to operators.
Shopfloor-Online provides	Variation in processes (especially multi-head) can be due to set up. Analysis tools can show where one head differs from another allowing the setter to make the necessary changes. Details of how to set up a machine can be stored so all processes are set up in the same way. Documents can be linked into the screens in a context-sensitive manner e.g. when performing a particular quality check a link can be made to the ISO Procedure for carrying out the check.

Quality Reporting - Quick access to crucial information

Possible Strategy	Access from any PC.
Problem	Cost of PC`s can be prohibitive. The user interface needs to be easy to use or operators won't use it.
Shopfloor-Online provides	Low cost over-the-intranet information for everyone. Information is delivered to users in an easy to navigate way to support faster more informed decision making at all levels.

Possible Strategy	Key reports available in real-time.
Problem	Time consuming to compile reports which aren't always accurate or in a standard company format and information can sometimes be out of date.
Shopfloor-Online provides	Up to date reports at all levels available at the touch of a button, reports can be tailored to your requirements, and save time so valuable human resource can be used elsewhere.

Quality Reporting - Exception reporting

Possible Strategy	Raise email/pager alarms for critical situations.
Problem	Drawing attention to a change in circumstances on the shopfloor which requires action to be taken.
Shopfloor-Online provides	Real-time SPC alarms for those responsible for the process. Alarms and exceptions allow people to react when necessary. There is the ability to automatically raise alarms via email, pagers, on screen or SMS text services in pre-defined conditions. Alarms can be set so that they have to be responded to by designated persons.

Manage across multiple Manufacturing Plants**Benchmarking - Identify weak performers**

Possible Strategy	Compile standard reports to be generated by each plant.
Problem	Cannot compare like with like , fragmented electronic or manual systems producing reports in different formats.
Shopfloor-Online provides	All data collected in one database which interfaces with existing systems – no matter how many plants, therefore all analysis and reports are accurate, up to date and in a standard format for comparison.