



Newton PULSE

PROFITTHROUGHEFFICIENCY

 **Newton**

# Newton Pulse Production Management System

- ▲ Reduces programme costs by an average of 20%
- ▲ Increases efficiency and productivity, and improves product quality
- ▲ Reduces build time, avoids delays and keeps programme ahead of schedule
- ▲ Improves management of materials and ensures efficient deployment of staff
- ▲ Provides single-point visibility of all systems across programme duration
- ▲ Ensures transparency of information allowing everyone to manage their own performance
- ▲ Enables advanced reporting to sustain and drive additional benefits
- ▲ No capital expenditure required as system is funded from financial results achieved

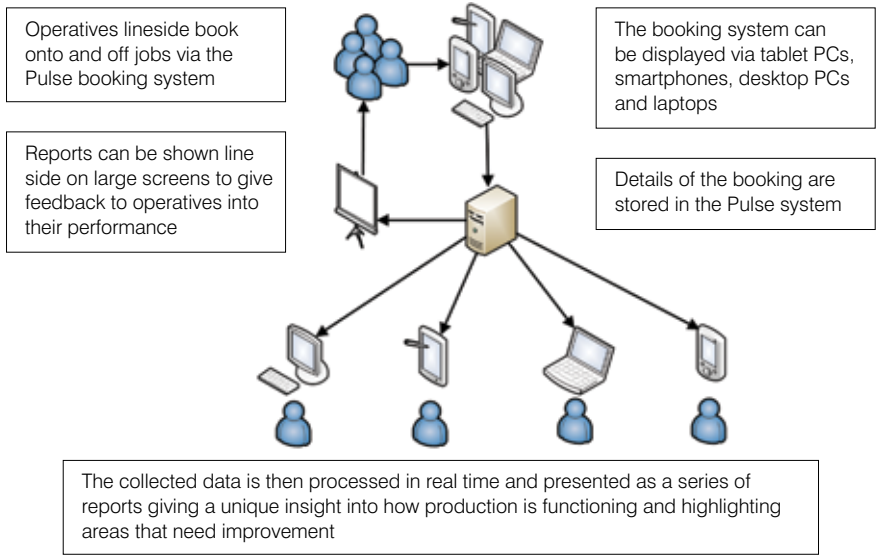
## A new perspective on line management

From cars and trains to ships and planes, the air, land and sea sector has long relied on labour and component intensive build or refit manufacturing processes, including pulse line techniques. The nature of these processes means that efficiency and effectiveness is often compromised by poor communication between different parts of the business and limited knowledge and understanding of the desired and actual performance metrics associated with specific tasks and procedures.

Newton has a dedicated team skilled in implementing sophisticated IT solutions that provide the tools to significantly improve management visibility of losses, problems and opportunities for improvement

throughout assembly lines. Deployed as part of an overall transformation programme, our Pulse Production Management System provides the visibility necessary to make informed decisions about planning assembly lines, using modern efficiency measures to reduce bottlenecks, track components and cut out time-consuming procedures.

Pulse provides real-time monitoring of the status and flow of production processes to optimise line performance and allow personnel and resources to be deployed efficiently. It helps manage and control variations in cost, quality and product delivery, reducing build times, eliminating re-work, improving materials management and consolidating the cost per job.



## New Software?

### Adding value, on demand

Newton only implements Pulse when it's needed to support the overall improvement programme. Before considering introducing a new system, we always ensure that clients have fully optimised their existing processes.

Some of our largest programmes, resulting in multi-million pound savings, have not required the deployment of any new information systems. However, when the success of a project is compromised because fundamental IT functionality is

missing, it's essential that a solution can be quickly and seamlessly implemented in parallel with the transformation programme. In these situations, Pulse adds tangible business value.

For example, Pulse recently helped engineering support services specialist Babcock – whose customers include the Royal Navy, British Army and Royal Air Force – to identify and eliminate 250 hours of lost time on a vehicle production line, reducing labour costs by around 20% for each vehicle.

## Who Benefits?

### Advantages all round

Newton's Pulse Production Management System enables manufacturing and engineering functions to see the time taken for individual tasks, delivering process visibility and sustainable benefits at line level, for management teams and across the business supply chain.

#### ▲ For senior management:

Pulse helps reduce the cost of a programme and provides reassurance that the line is under control and the project is progressing successfully.

#### ▲ For team leaders:

Pulse provides the real-time information on materials, labour and processes necessary to effectively manage day to day running of the line and the team.

#### ▲ For production management:

Pulse gives an holistic view of the production facility and a detailed status of its component parts, allowing managers to focus on areas that require improvement.

#### ▲ For operators:

Pulse empowers operators, giving them a clear, up-to-date understanding of their job and the responsibility and accountability to deliver it.

▲ **For quality teams:**

Pulse ensures that only qualified staff perform each task by delivering auditable electronic records showing who has worked on a job and the materials used.

▲ **For supply chain management:**

Pulse provides the information required to effectively manage supply chains with production line plans and detail on which parts need reworking or fail regularly.

▲ **For logistics, warehousing, stores and materials teams:**

Pulse lets everyone know if the line is held up waiting for parts and communicates what parts are required and when they're needed.

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# ▲ Managing Your Line



## Essential visibility for improved line performance

The production line is at the heart of every manufacturing business. Its performance determines productivity, affects product quality and has a major impact on business profitability. Pulse helps transform product line

efficiency, enabling you to produce more products of a higher quality, resulting in improvements across the entire manufacturing process, as well as greater customer satisfaction and ultimately, increased profitability.

### Summary of Benefits

- ▲ Monitor the entire product journey and identify problems
- ▲ View WIP and optimise buffer levels
- ▲ Identify live issues anywhere on the line from a single source
- ▲ React instantly to problems with pre-configured alerts
- ▲ Track the efficiency of equipment and tooling

# Managing Your Line

## Product Movement

### Accelerate processes

Monitor the entire product journey through every stage of the line process with a clear view of product status, and up-to-date information on WIP that identifies the location of any bottlenecks or hold-ups.

## Buffer Management

### Control risks

View overall WIP, monitor current buffer levels, record past levels and establish optimised levels between line stages, including the option to configure alerts or receive SMS notifications.

## Live Line Info

### Identify issues

Provides a complete live overview of job progress and line problems in a single view from a single source – from reworks and diversions to materials issues and labour imbalances.

## Alerts

### React instantly

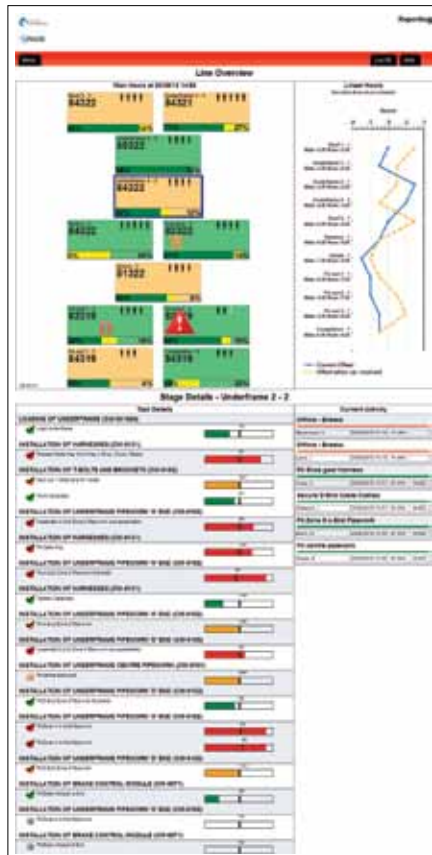
Configure alerts triggered by events such as material shortages or output reductions and receive regular email reports that ensure issues can be identified and dealt with immediately.

## Equipment and Tooling

### Drive operations

Track the efficiency and effectiveness of equipment and tooling – see what needs updating, replacing or servicing and ensure that systems meet their performance capabilities.

## Line Overview





# ▲ Managing Your Team



## The information to realise workforce potential

It's people on the shop floor that make things happen. They run the line, control the machines and oversee the product-making processes. Staff on the line are key to maximising operational efficiency and profitability. They need to be properly trained in the skills required to do their jobs effectively, given the information they need to improve performance

and motivated to continually develop a positive attitude towards their work. Pulse helps establish what jobs your people are doing – and what they should be working on. It lets you see whether you're meeting targets and where changes to tasks are necessary so that improvements can be implemented.

### Summary of Benefits

- ▲ Monitor a task's critical path and establish priorities
- ▲ Set alerts and SMS notifications to instantly react to problems
- ▲ Evaluate the time taken for specific tasks and assess efficiency
- ▲ Define labour capabilities and identify skills gaps
- ▲ Assign the right jobs to the right people
- ▲ View detailed task information to refine procedures

# Managing Your Team

## Job Booking

### Assess efficiency

Record the time taken for a task, assess against targets and determine which tasks are taking too long or causing bottlenecks. Review labour resource requirements by task and establish any training requirements. Reports include labour Gantt, labour efficiency, labour usage and hours per product by individual task.

### Booking On Job



### Booked Time Gantt



## Critical Path Focus

### Evaluate priorities

Monitor the critical path of a task and view progress on the line. Combine with labour, skills and materials information to understand and establish task priorities over time as requirements change.

## ANDON

### Resolve problems

Allow the line to request assistance by registering quality or process problems and escalating issues, including setting alarms and sending SMS notifications. Record response times and resolutions to ensure any problems are rapidly addressed.

## Rework and Downtime

### Save time

Record rework and downtime and establish the losses, causes and trends over time.

Eliminate problems with visibility of parts that constantly need rework and consequently require improvements from suppliers.



## Skills Matrix

### Define capabilities

Ensure tasks are assigned to suitably qualified and experienced people through assessing individuals by their skills. Identify skills gaps and training requirements so that employee capabilities are aligned with the work planned.

## Labour Task Assignment

### Allocate resource

Assign the right jobs to the right people and check for skills gaps or training needs against planned work when used with the Skills Matrix module.

## Job Info

### Clarify tasks

Establish a culture of continuous learning and improvement with the ability to view detailed information for each task including operator comments that highlight issues and problems or provide advice on completing the task, as well as comments from operators involved with completion of the previous task. Instantly view a correct set of instructions and drawings for the task in progress.

## Booking Job Info





## Team Briefing and Info

### **Disseminate information**

Create a screen or set of screens displaying information required to brief the team on the day's work and updating them on previous progress. View all the information for team updates on a single screen without the need to manually pull together reports.

## HSE Requirements

### **Maintain compliance**

Display HSE requirements with the job and request confirmation from operators that they have viewed any new changes to HSE requirements before they start work.

## Messages

### **Communicate messages**

Send messages to pre-defined groups across all areas of the business, simply and easily, triggered by task or time. Ensure important information reaches the right people at the right time and request acknowledgment of receipt from recipients if required.

# ▲ Managing Your Materials



## The right materials, in the right place, at the right time

Effective materials management is essential to running a line. It requires single point responsibility, early planning, clear useable reports, effective communication tools and a coordinated approach to addressing issues. Pulse helps resolve inventory problems by matching supply with demand, it records shortages and

helps standardise materials across processes, as well as reduce wastage and cost. From planning warehouse or store room layouts, to avoiding pilferage and developing procedures for handling waste materials, Pulse provides the information necessary to ensure the right materials are in the right place at the right time.

### Summary of Benefits

- ▲ Display material availability and ensure on-time delivery
- ▲ Reduce line delays by identifying material issues
- ▲ Enable suppliers to see inventory levels
- ▲ Ensure suppliers deliver when materials are required



## Materials Management

### **Ensure availability**

Display the availability of materials for a job and ensure the correct materials are delivered to the right place exactly when they're needed. Reduce line delays by identifying material issues before they become problems.

## Supplier Link

### **Deliver on-time**

Enable parts suppliers to view current inventory levels and allow them to check when deliveries of specific parts are likely to be required.

# ▲ Planning and Scheduling



## A production roadmap based on facts, not assumptions

Production planning is fundamental to any manufacturing business. It's a complex process that covers many different areas to ensure that materials, equipment and human resources are all available to complete the work. Effective planning and scheduling relies on understanding actual product build

times, resource requirements and critical paths. Pulse helps to leverage the advantages of good planning by using realistic build times, improving process flow and cutting unnecessary inventory costs. It assists with optimising equipment and labour usage and improves on-time delivery of products.

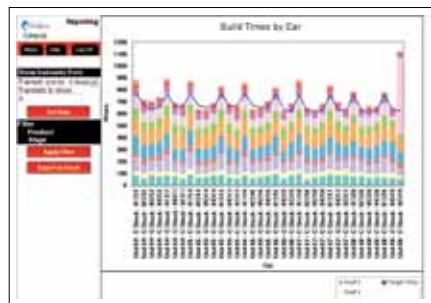
### Summary of Benefits

- ▲ Provide operators with a detailed view of tasks and their order
- ▲ Create plans for each part of the process
- ▲ Establish task dependencies so that labour can focus on priorities
- ▲ Compare the performance of completed work with planned work
- ▲ Create target times to define what will happen and when
- ▲ Predict what tasks will need to be undertaken and their likely success
- ▲ Understanding actual performance to provide a realistic schedule

Average Time By Task



Build Time By Product



# ▲ Planning and Scheduling

## Routings

### Map tasks

Create task lists for different products and attach the labour hours required for each task, automatically pulling information from other systems as required. Provide operators with a detailed view of tasks, their order and any changes to processes.

## Method Planning

### Capture processes

Create detailed plans for each part of the process, drawing information from other systems as required.

## Critical Path / Dependencies

### Improve understanding

Calculate the critical path of each stage and establish dependencies between tasks, automatically pulling information from other systems, so that labour can focus on the priorities.

## Earned Value Management

### Measure performance

Compare the performance of work planned with work undertaken using automatically generated EVM charts.

## Emerging Work

### Plan ahead

Establish areas of emerging work, create tasks, calculate labour hours and attribute time to each task.

## Scheduling

### Set timetables

Establish target times for scheduling work using historical information on performance and labour schedules to define what will happen where, and when.

## Forecasting

### Look forward

Use historical performance records to predict what tasks will need to be undertaken and when they'll need to happen. Refer to the schedule to determine preferred outcomes and establish the likelihood of success.

## One-off / Batch Production

### Customise processes

Define the route, materials and tasks for each custom product introduced to the factory line.



# ▲ Quality Assurance and Acceptance



## Logging what happens today to inform what happens tomorrow

Pulse makes it easy to keep an accurate electronic record of everything that happens on the line, ensuring that all actions, test results and inspections are correctly

referenced and logged. It provides an essential information trail that supports quality assurance procedures and compliance requirements.

### Summary of Benefits

- ▲ Keep an accurate electronic log of all line activities
- ▲ List all test activities and review trends of issues
- ▲ Log snags and establish the cause of problems
- ▲ Capture a visual record of issues and create tasks from observations
- ▲ Establish quality gateways to ensure products are up to standard

# Quality Assurance and Acceptance

## History Book

### Log the detail

Keep an accurate electronic log of all activities on the line, including the people, processes, materials and equipment involved in tasks. Automatically populate known information and enter the additional details required for the task to be completed.

## Test Activities

### Review the outcomes

List all test activities that must be completed and mark their current status to make it straightforward to see what tests are outstanding. Ensure all tests have been completed and log the person responsible and the time of completion. Leave notes against failed tests to assist continuous improvement and review trends of test issues.

## Snagging

### Remove snags

Create new tasks when snags are found and ensure that snags are corrected before the unit is completed. Keep an electronic record of snags to find trends and establish the cause of problems.

## Visual Inspections

### See the story

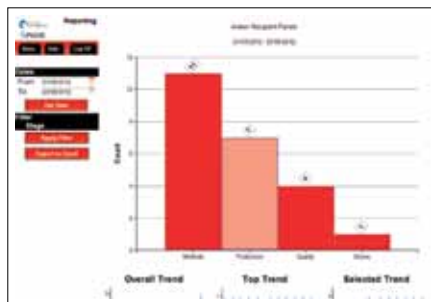
Capture pictures, log comments electronically and create tasks from observation records. Ensure outstanding issues are completed before the task is approved.

## Quality Gateways

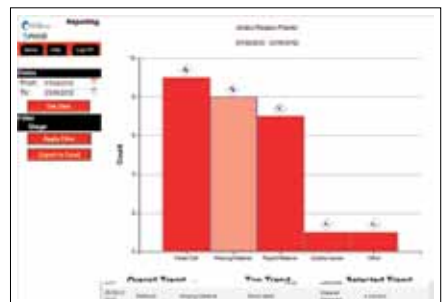
### Meet the standard

Establish quality gateways to ensure the product meets set standards before progressing to the next stage. Keep an electronic log detailing all gateways and their approvals.

## Diversion Pareto



## Rework Pareto







## ▲ Product / Engineering Change

### Making sure changes are visible and line-integrated

Managing production or engineering change is a challenge for manufacturing businesses but can deliver significant system and product enhancement. Streamlined change processes can drive top-line benefits, increase speed-to-market

and generate competitive advantage. Pulse helps improve the efficiency of change management, ensuring that whenever change is introduced, it's effectively communicated across the line or business processes that are affected.

#### Summary of Benefits

- ▲ Mark changes to the build-process
- ▲ Display operator alerts
- ▲ Ensure that everyone is always up-to-date

## ▲ Product / Engineering Change

### Product / Engineering Change

#### **Be aware**

Mark changes to the build process and display screen warnings, updates and messages when an operator books onto a job. Configure messages to require receipt acknowledgment before the job can be started to ensure that everyone is always up-to-date.

## ▲ Additional Features



### All the functionality you need to drive manufacturing performance

Newton has the technology skills and engineering expertise to develop, customise or add to any Pulse modules in order to address specific

performance issues. Here are just a few examples of additional features that can easily be incorporated.

#### Examples

- ▲ Directly link to machines to extract data and streamline processes
- ▲ Configure SMS messaging for alerts or to initiate escalation
- ▲ Improve customer service by allowing them to see progress

## Additional Features



### Machine Link

#### **Extract data**

Draw information into the system directly from machines. This requires a scoping exercise to assess the capability of the machine and establish methods of data extraction and logging.

### Text Messaging

#### **Respond instantly**

Configure certain modules to send SMS alert notifications or use with escalation processes for ANDON to ensure that serious issues receive rapid attention.

### Customer Link

#### **Share progress**

Allow customers a user-defined, selective view of progress in order to improve communication and enhance customer service.



# Integration and Support



## A unique approach to business-wide integration

Newton takes an holistic approach to integration that not only incorporates physical information systems and the people managing and using the technology, but also the overall vision and performance objectives of our clients. We create a link between systems, operational processes and staff to increase performance and drive value.

Any new piece of technology must complement existing systems and operational processes. At the same time we understand the complexity of obtaining the right information from the correct sources in order to drive performance improvement. Newton has a proven capability to extract information from multiple existing systems and combine it into a single system to provide an integrated picture that brings together current reporting systems and access to a wealth of new performance data.

We work in partnership with our clients' IS teams, management teams and line teams to ensure they understand the technology and data structures we deploy. This understanding, together with the savings generated from the system, allows clients to upgrade their technology without the need for large capital expenditure.

## Support

Long after our onsite work is completed, our team is always available to ensure that improvements are sustained and continue to be driven further. From technical query support to full infrastructure support, we offer a variety

of services that accommodate different requirements. We work closely with our clients to understand their support requirements and develop tailored packages where necessary.

## ▲ Integration and Support

### Integration interfaces

Pulse normally integrates seamlessly with existing systems. Historically these have included SAP, Microsoft Project and in-house ERP systems.

### Integration for tablet or smart phone

Pulse uses web-based technology to deliver tablet or smart phone applications enabling the flexibility of anywhere, anytime access with mobile-optimised screen views and report formats.

### Hosted Pulse

If needed, Pulse can be delivered as a hosted service that offers pay-as-you-use pricing based on the modules ordered, the number of sites covered, the number of seats required and the contract duration.



## Transferring the skills, sustaining the benefits

We help our clients transform the way they work, developing staff potential and leading cultural change to enable improved quality, productivity and resource management. The sustainability of our approach is ensured through a rigorous transfer of skills and methodology directly to our clients' front-line and management teams, allowing organisations to continue realising value.

Training packages are tailored to local teams and adapted according to the number of trainees and the onsite training facilities. Our aim is to enable members of the team to operate parts of the Pulse system that are relevant to their individual roles and to ensure this knowledge is firmly embedded so that they can assess data and train additional users.

Our Pulse training and skills transfer processes involve a variety of tools and techniques, including live on-the-job training, group training, video tutorials and training manuals or help files.

Training is normally broken into three main user groups:

- i. Booking system user: completing tasks and using Pulse to log task completion.
- ii. Management: using reports to manage the line.
- iii. Administration group: importing task lists, setting up product lists for booking on to, and advanced reporting. This group can also be empowered to run the training once Newton has left the site.

# ▲ Training and Driving Improvement



## **Training is normally conducted in two phases, by user group:**

- i. Hands-on workshop training sessions to quickly demonstrate key functionality.
- ii. Supported use where assistance is provided on the shop floor and in management offices to help users become familiar with the system.

As clients add Pulse modules, we provide additional tailored training and training materials to cover new features and functionality.

## **In addition to the training sessions, we provide a full documentation pack that includes:**

- i. A User Guide covering all of the functionality within Pulse, tailored to the system that has been implemented. This is also available as a PDF download using a link on the system.
- ii. Training guides that cover the full functionality for each user group in a top-line format.
- iii. Training presentations used by the Newton team are supplied to the local team.
- iv. Training videos covering basic booking functionality.



### Unlocking potential. Realising value

Newton works hands-on with forward thinking organisations around the world to identify and fix the cost, delivery and quality problems that limit operational and supply chain performance. We're not management consultants. Our people are dynamic, first-class engineers, motivated by demanding challenges and able to implement practical solutions that rapidly generate measurable, sustainable financial returns.

Established in 2001 Newton has grown by over 40% year-on-year and we now employ more than 100 full-time staff out of our UK and North American offices. Today, we work with all kinds of organisations across the public and private sectors, from ground floor up to boardroom.

Our approach is process-led and driven by facts, not theory – and we only get paid if we achieve results.

Working closely with client teams, we have a track record of creating 10-50% improvement over two to six months without any capital expenditure. We help our clients transform the way they work, developing staff potential and leading cultural change to enable improved product or service quality, productivity and resource management. The sustainability of our approach is ensured through a rigorous transfer of skills and methodology directly to our clients' front-line and management teams, allowing organisations to realise real value by finding and unlocking hidden potential.

At Newton, we engineer profit through efficiency. Discover what we can do for you.

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Our objective is straightforward: to deliver a 10-50% improvement in cost, delivery and quality performance in two to six months, without capital expenditure. Guaranteed.

Our people are highly qualified engineers with a track record of delivering exceptional levels of operational and financial improvement. Excellent technical, analytical and communication skills together with empathy and drive make them a pleasure to work with.

Their approach is hands-on, pragmatic and highly personable, enabling them to integrate effectively with all levels of the client team.

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