

Prinect Performance Benchmarking⁺

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Abstract

Prinect Performance Benchmarking is a subscription-based application for Speedmaster presses that provides personalized and objective performance data through Heidelberg's secure connectivity. The cloud-based application is designed for printers who have employed a Lean manufacturing process for efficiency and continuous improvement based on the concept of Overall Equipment Effectiveness (OEE). "In the time we have used this tool, it has proved time and again to help us to objectively evaluate our performance using OEE Statistics. Now we also not only print to the numbers, we also manufacture according to the numbers," explained Anthony Thirlby, managing director, ESP Colour, Ltd.

Prinect Performance Benchmarking enables print shops to compare the performance and overall productivity of their Speedmaster presses and to compare operators with those of other printers participating in their peer group. "This benchmarking program can tell the printer exactly what he needs to improve upon," commented a judge.

Once the software is activated, the Speedmaster press regularly and automatically delivers completely anonymous performance data to a secure Heidelberg central server where it is processed for evaluation. This data forms the basis of personalized, objective performance reports which can be accessed online at any time using a simple Internet browser interface, displayed with easy-to-read charts and diagrams. "The data the printer receives can also show the printer where his people problems are," noted another judge. Nicholas P. Ferris, president, MasterTag, stated, "The system gives us a visual indication of our production and shows us exactly how we are performing on a weekly or monthly basis."

Any data provided by the Speedmaster press is treated as confidential and cannot be accessed by other participating subscribers. "No one else offers this, comparing apples to apples ... it is worth its weight in gold for the printer that takes true advantage of benchmarking," stated another judge.

Press performance is compared to the average performance of all participating presses and also to the highest performing press in the selected peer group. It analyzes achieved production speeds, waste vs. good sheet ratio, and time efficiency, helping the printer to understand and identify performance optimization potentials in and around the press. “We have actually raised the productivity bar and are printing at maximum speeds with minimal waste, which also supports our efforts to be considerate to the environment,” emphasized Thirlby.

Because the application is cloud-based, there are no software or hardware components to install or license. All that is required is that the Speedmaster press be configured with a Prinect Press Center operating console running a current version of Speedmaster software (S10A or newer) and be connected to the Heidelberg's Webbased remote service. Activation of the service occurs within 24 hours after the application has been submitted.

The efficiencies and ROI of Performance Benchmarking may not be directly related to the program itself. However, based on information the program provides, the printer is empowered to analyze strengths and weaknesses in production and take the necessary actions to correct and capitalize accordingly. In Heidelberg's experience, printers who have realized undesirable OEE figures and have commissioned their consulting services to evaluate production have seen improvements. Analysis finds ways to improve production simply by modifying procedures and implementing improved production standards and policies. In some cases, the owner was not fully aware of production “problems” until they were clearly available and analyzed.

Below are examples of how interpretation of the (OEE) Speed, Quality, and Time indices has resulted in real, tangible savings.

Speed Index. In this case, the owner of a large commercial print shop became aware the average production speed of the Speedmaster XL 105 was well below the average speed of the reference group and even further below the rated speed of the press. Upon realizing this situation, a meeting was held with all press crews, and as a direct result, press performance improved by 1,500 sheets per hour.

Quality Index. This may actually illustrate the best potential. Upon analyzing data, which showed a low Quality Index, the shop took measures to reduce makeready waste (training, adoption of color standards, etc.). This shop allocated 1,000 sheets per makeready.

As a result of improvements made in makeready processes, they reduced waste by 400 sheets per makeready.

Time Index. A low Time Index indicates high makeready time; a high Time Index indicates short makeready time and high productivity of good, sellable sheets. By

bringing awareness to too much time in makeready, the print shop can investigate the root cause of the problem and take necessary measures for improvement, which always results in reduced use of paper (as indicated above) and maximized use of the press for good sheet production.

Introduction

Prinect Performance Benchmarking is a subscription-based application for Speedmaster presses that provides personalized and objective performance data through Heidelberg's secure connectivity. Prinect Performance Benchmarking enables print shops to compare the performance and overall productivity of their Speedmaster presses to other presses from participating printers.

Press performance is compared to the average performance of all participating presses and also to the highest performing press in the selected peer group. It analyses achieved production speeds, waste vs. good sheet ratio, and time efficiency, helping the printer to understand and identify performance optimization potentials in and around the press.

Benchmarking Metrics

- Good Production Speed
- Overall Equipment Effectiveness
 - o Speed Index
 - o Time Index
 - o Quality Index

Good Production Speed is the average speed during production of sellable sheets.

Overall equipment effectiveness (OEE) is a hierarchy of metrics created by Seiichi Nakajima in 1960's which evaluates and indicates how effectively a manufacturing operation is utilized. The results are stated in a generic form which allows comparison between manufacturing units in differing industries. Heidelberg uses OEE to monitor the productivity of their presses.

The OEE index is composed of 3 part indices which are multiplied:

$OEE = \text{time index} * \text{speed index} * \text{quality index}.$

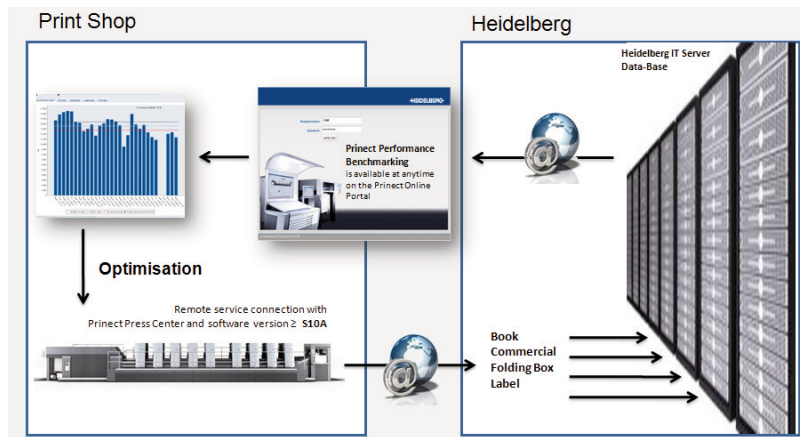
- Time index = Production time (for good and waste production) / sum of machine up-time ¹
- Speed index = Average production speed (for good and waste production) / individual maximum printing speed ²
- Quality index = Number of good prints / Total number (good and waste prints)

¹ Machine up-time is the time when the machine is available for production. The signal “available for production” is sent by the press when it is switched on (i.e. the main switch is activated) and when there is no red malfunction signal.

² Individual maximum (rated) printing speed (i.e. 12000, 15000, 18000)

Benchmarking Functionality

Speedmaster presses selected for Prinect Benchmarking Services transmit via internet connection data to the Prinect Productivity Server in Heidelberg on a daily basis. The server itself prepares, evaluates and publishes the data on the Prinect Performance Benchmarking Internet Portal where customers have personal access.



In the Prinect Online Portal, production reports from their presses are displayed alongside the anonymous comparison data. This enables customers to trace the development of their own monthly productivity in comparison with the average figure, as well as with the best representatives of the comparison class selected.

The class of whom to benchmark with can be modified by the user by the following criteria:

- Country
- Market Segment
- Press Format
- Press Model
- Number of Printing Units
- Type of Offset Printing (Conventional or Anilox)
- Coating Unit (Yes/No)
- Perfector (Yes/No)
- AutoplateXL (Yes/No)
- Cutstar (Yes/No)
- Color Measurement Device
- Working Hours per day
- Number of plate changes per day

Applications
My Profile
Help
Logout

HEIDELBERG
English
Welcome, Demo HUS

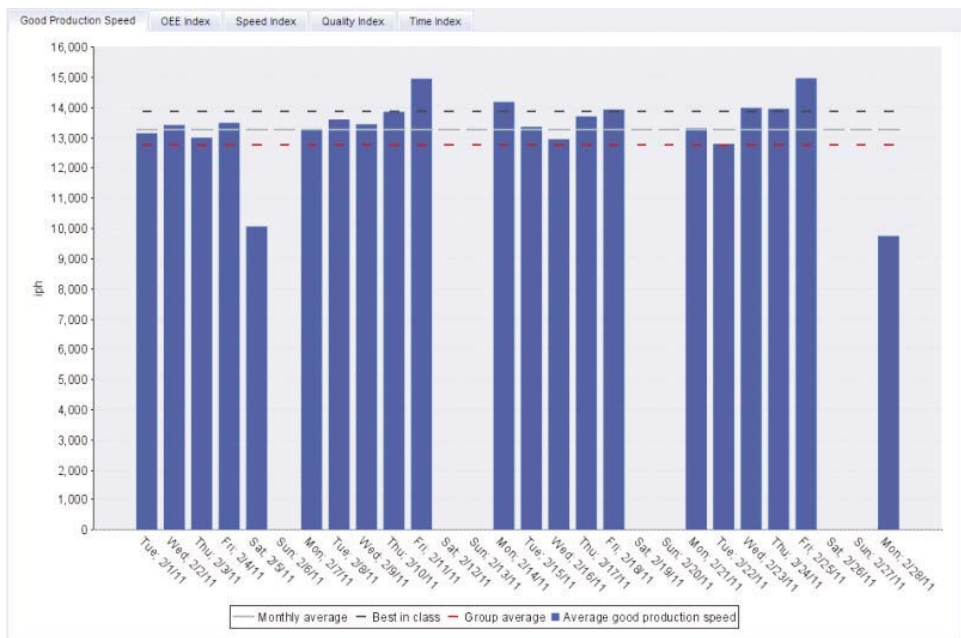
Equipment: XL 105-6+L UV (FS001357)
Machine Type: XL 105
Country: United States
Market segment: Commercial
Working hours per day: 6.32
Plate changes per day: 3

Default
Save
Save as
Delete

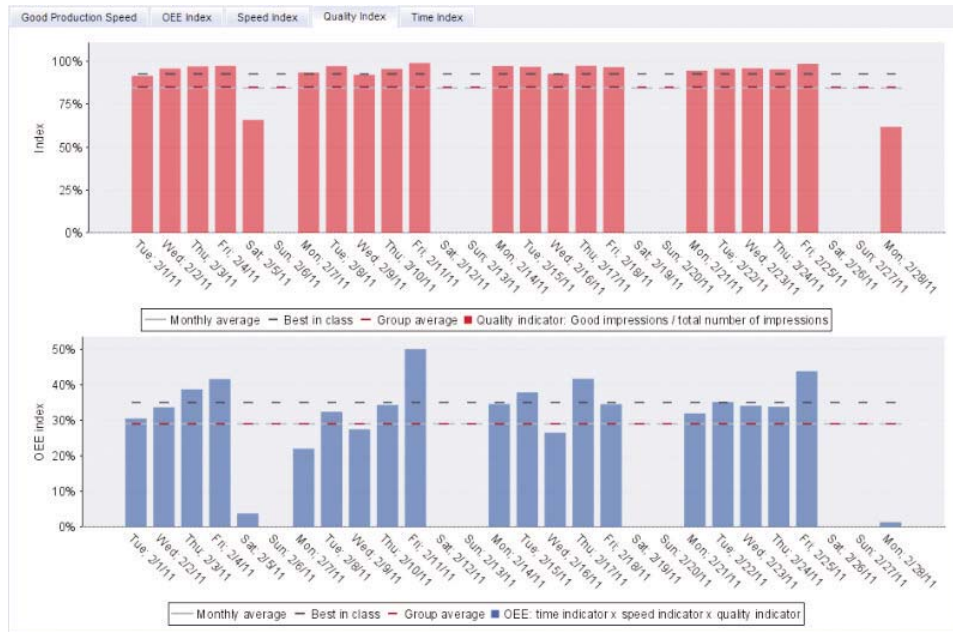
Country: No restriction
Market segment: No restriction
Formats: 52 74 75 102 105 106 145 162
XL
Printing units: 0 to 12
Anicolor: No restriction
Coating unit: No restriction
Perfector: No restriction
AutoplateXL: No restriction
CutStar: No restriction
Color measurement device:
Prinect Axis Control
Prinect Easy Control
Prinect Image Control
Prinect Impress Control
Working hours per day: 0 to 24
Plate changes per day: 0 to 40
Minimum size of the reference group: 5
Maximum speed reference: Each press own max. speed
Apply
Restore default

The following reports are available for the users:

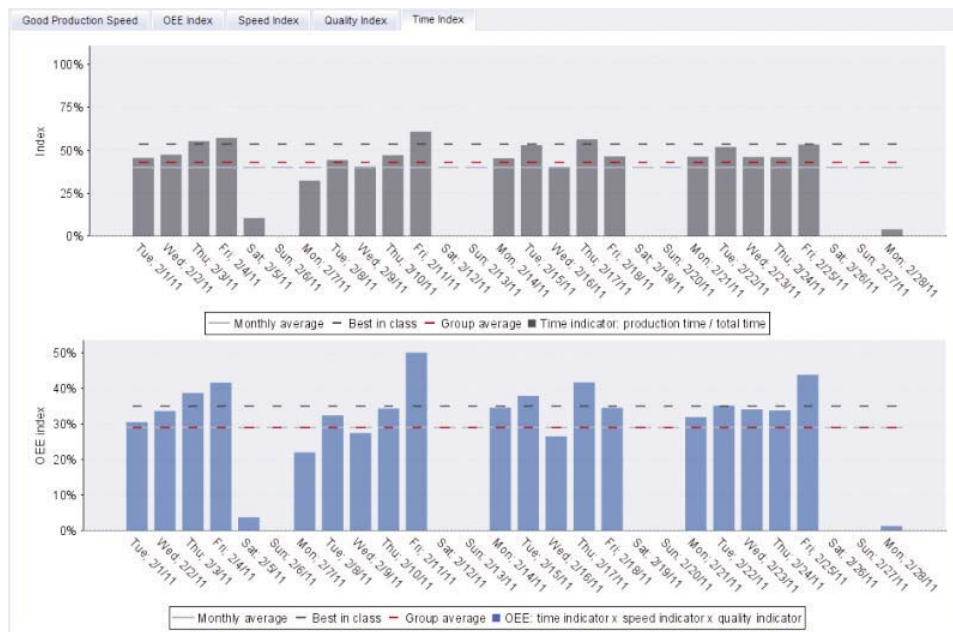
- Good Production Speed



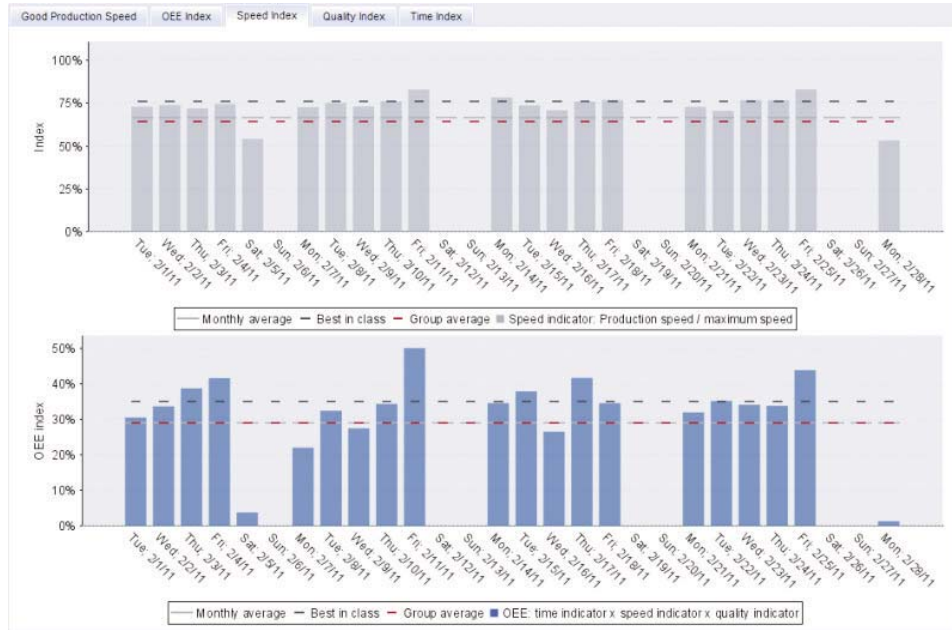
- Overall Equipment Effectiveness



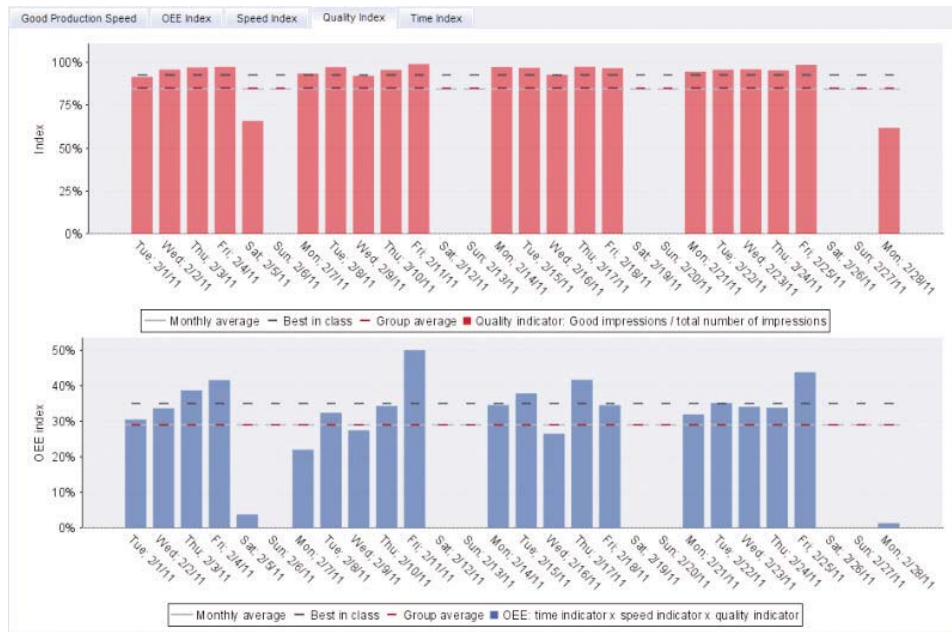
- Time Index



- Speed Index



- Quality Index



Reports are available on either monthly, quarterly or yearly basis

Customer Benefits

Benefits of the Prinect Productivity Benchmarking to end users are:

- Production and market transparency
Prinect Performance Benchmarking provides a straightforward comparison of productivity, based on consistently up-to-date data, as well as transparency of national and international markets.
- Customers are able to position themselves in dynamic competitive situations
- Daily performance snapshots of Overall Equipment Effectiveness
- Adjustable comparison classes
- Complete anonymity
- 24/7 access ability