

Operator Performance Analytics

Unlock the potential of your people to achieve significant improvements in safety, productivity and reliability.



How Operator Performance Analytics Works

Every shift a mine generates hundreds of data points measuring an operator's performance. Most of the time, this data is construed as "noise" because it is not filtered, analyzed or presented in a useful way. Meaningful analysis is typically labor-intensive, post-hoc and sensitive to validity threats. This creates a huge opportunity cost for the mine, unknown and under-addressed performance issues typically cost millions of dollars per annum.

Immersive Technologies' Operator Performance Analytics is a **business improvement service providing site stakeholders with accurate and timely intelligence on operator performance variability and training needs analysis**. The service is structured to deliver immediate analysis across multiple data systems and critical information is presented within a dashboard tailored to stakeholder needs. This information can be actioned immediately by training and operations management.

Operator Performance Analytics connects the workforce development plan, disparate mine fleet data and training data into a comprehensive system for;

- providing insights into operational risk;
- minimizing productivity loss;
- minimizing machine health and abuse trends;

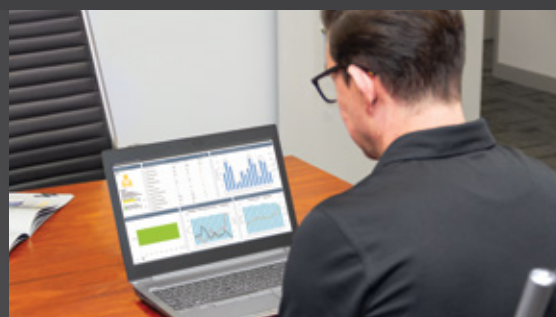
Without context, data is meaningless. Our consultants are versed in continuous improvement and operator performance analysis. We can help you avoid the pitfalls that surround data interpretation by ensuring that we are available to review, interpret and answer questions.

- improving safety; and
- optimization of resource allocation for training and development.

With a dedicated analytics center, a global workforce of training advisors and a proven best-practice training methodology, Operator Performance Analytics provides your people with powerful insights to become more effective and efficient. Most commonly this analysis is:

- **descriptive** - helping to understand benchmarks and typical performance with historical data;
- **causal** - allowing you to understand what happens to risk when you change variables such as training time; and
- **predictive** - making estimates of future workforce performance based on variables related to training and development.

Data analyzed through our Analytics Engine is displayed via a web portal dashboard for mine managers, supervisors, and trainers to view at any time, and further supported by Immersive Technologies' Training Advisors, delivering in-depth reporting on specific operator training needs.



Operator Performance Analytics Process



Mine Data

Management priorities

Fleet management systems:

SURFACE

- Jigsaw
- Wenco
- VIMS
- Komtrax Plus
- Pitram
- Dispatch
- Minestar
- Minecare
- Prevail
- and more

UNDER-GROUND

- Newtrax
- Certiq
- VIMS
- Dispatch
- Groundhog
- Pitram
- and more



Operator Analytics

Equipment efficiency analysis:

- Productivity
- Reliability

Impact of operator performance variability:

- Deviation from benchmarks
- Events per hour
- Training Needs Analysis

Operator risk management profiling

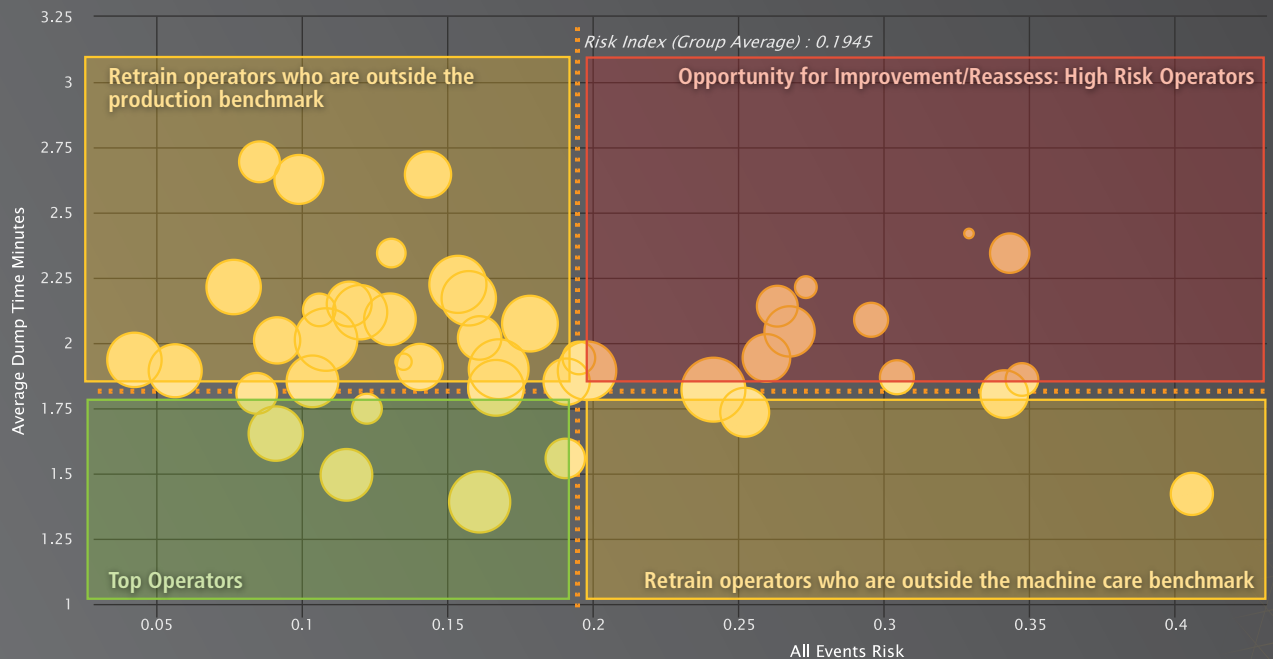
Global operator benchmarking

Training simulator data

Global operator data

Operator Performance Variability

Operator Performance Map



Identifying outliers such as the highest and lowest performers is a key step in reducing operator variability. The operator performance map (pictured above) and drilldown dashboards allow site management to easily identify the outliers.

Operator benchmarking systematically utilizes skills profile data to identify target groups for continuous improvement projects, resulting in reduction of overall workforce risk and tightening of performance variability.

Operator Performance Analytics utilizes our proven methodology which has delivered verified in-pit results; including significant safety improvements and cost savings, at over 330+ mines globally.



Training Interventions

Who specifically needs what training



Real Results

- 60% Transmission abuse
- 65% Brake abuse
- 63% Engine overspeed
- 54% Traffic incidents
- 8% Load time
- 16% Spot time
- 12% Underground production
- 24% Tire life





- Surface Simulators
- Underground Simulators

- Autonomous Haulage Sites
- ▲ Managed Services
- Office Locations

AFRICA

JOHANNESBURG, SOUTH AFRICA
Tel. +27 11 973 7900
Support Hotline: +27 11 973 7939
SalesAF@ImmersiveTechnologies.com

ASIA

JAKARTA, INDONESIA
Tel. +62 21 2793 8535
Support Hotline: +62 21 2793 8266
SalesID@ImmersiveTechnologies.com

KOLKATA, INDIA
Tel. +91 (33) 2466 0248 / 0449,
Support Hotline: +62 21 2793 8266
SalesIN@ImmersiveTechnologies.com

AUSTRALIA

PERTH, WESTERN AUSTRALIA
(Global Head Office)
Tel. +61 8 9347 9000
Support Hotline: +61 8 9347 9099
Sales@ImmersiveTechnologies.com

BRISBANE, QUEENSLAND
Tel. +61 7 3842 3600
Support Hotline: +61 8 9347 9099
Sales@ImmersiveTechnologies.com

EUROPE

BOCHUM, GERMANY
Tel. +49 151 4251 3297
Support Hotline: +27 11 973 7939
SalesEU@ImmersiveTechnologies.com

MOSCOW, RUSSIA
Tel. +7 903 790 0961
Support Hotline: +27 11 973 7939
SalesRU@ImmersiveTechnologies.com

LATIN AMERICA

SANTIAGO, CHILE
Tel. +56 2 2246 8800
Support Hotline: +56 2 2246 8804
SalesLA@ImmersiveTechnologies.com

LIMA, PERU
Support Hotline: +56 2 2246 8804
SalesLA@ImmersiveTechnologies.com

BELO HORIZONTE, BRAZIL
Tel: +55 31 2555 3101
Support Hotline: +55 31 2555 3101
SalesLA@ImmersiveTechnologies.com

NORTH AMERICA

SALT LAKE CITY, UTAH
Tel. +1 801 748 0844
Support Hotline: +1 801 727 0766
SalesUSA@ImmersiveTechnologies.com

FORT MCMURRAY, ALBERTA, CANADA
Tel. +1 801 727 0736
Support Hotline: +1 801 727 0766
SalesCA@ImmersiveTechnologies.com

VANCOUVER, BRITISH COLUMBIA, CANADA
Tel. +1 778 989 0992
Support Hotline: +1 801 727 0766
SalesCA@ImmersiveTechnologies.com

ESTADO DE MÉXICO, MEXICO
Mob. +52 55 5217 1383
Support Hotline: +1 801 727 0766
SalesUSA@ImmersiveTechnologies.com

www.ImmersiveTechnologies.com

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