

USING TYRE FACTORY DATA FOR COST-EFFECTIVE GROWTH

Spurred by global export opportunities, during the last decade Asian tyre companies introduced new product lines and experienced growth at an unprecedented rate. Looking ahead, increasing demand from the domestic market and rising OE tyre customer quality requirements will combine to pressure these same companies to achieve productivity gains while improving quality.

Large, multinational tyre producers faced with similar challenges have historically responded with huge investments in manufacturing and material handling automation, along with the purchase and implementation of costly IT systems (along with their corresponding upgrade and training costs). Investments and costs of this type are extremely challenging to growing Asian tyre companies who are already scrambling to obtain and deploy resources to meet current production requirements.

Since 1982, Poling Group company CTI has worked closely with global tyre producers to acquire, store, and report tyre data. We've witnessed the productivity and quality improvements that come from turning data produced by people and machines, throughout the manufacturing process, into actionable information. We'd like to use that knowledge base to suggest some ways in which midsize tyre producers can leverage tyre factory data to meet ongoing and future operational challenges – in a scalable, cost-effective way.

Product identification

Product identification yields the quickest results that have the highest impact on productivity and quality improvement. You can identify packaged or singular product with a bar code label or RFID tag to:

- Enable intelligent material handling.
- Regardless of whether or not you automate the process, delivering the correct product to a process set up to handle it is a crucial quality goal.
- Provide the necessary element for product traceability required by many OE customers and governmental agencies.
- Improve response to customer and product quality issues. Using product identification to track products as they are produced, moved, tested, and consumed reduces waste and facilitates future inventory management initiatives.

For some tyre producers, the question is not whether to implement product identification, it is where to begin. Here are some advantages to consider:

Component Production: Start here to provide maximum finished product traceability and the

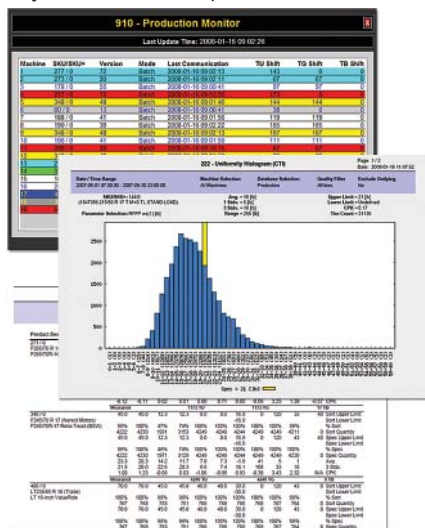
most cost savings in scrap reduction.

Tyre Building: Start here to verify product in the curing department and implement advanced analysis related to tyre construction issues.

Curing Department: Start here and your material handling system can route tyres to specific processes and machines in the final finish area. You can also track finished tyre irregularities to a specific press or mold.

Capturing factory data

From production accounting to SPC monitoring, tyre factory data collection plays a key role in improving productivity. We know how to collect data from machines and effectively implement web-based reporting for all your users – from operators to CEOs.



Users can customise and automatically schedule a variety of tabular, graphic, and dynamic Final Finish Host (FFH) reports.

- Our TFFIS (Tire Factory Floor Information System), first installed in 1997, provides a customizable base for collecting and monitoring production statistics from each area of the plant. It can also generate automatic text message alerts to mobile devices.
- Our FFH system collects tyre testing statistics from a variety of machines. When we encounter a machine without an existing interface, we evaluate it and provide a spec to the machine vendor to simplify the data acquisition process. Once communications are established, FFH can also automatically download auditable recipe information from a centralized location.

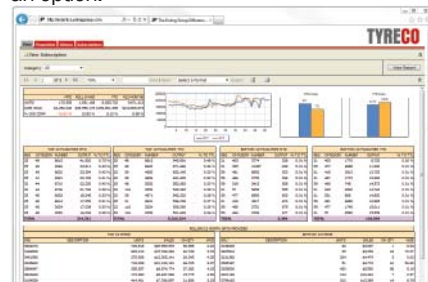
Advanced Analytics

Would you rather spend more of your time finding problems, or solving them? Since 2004 we've worked with over 40 clients to successfully design data warehouses and

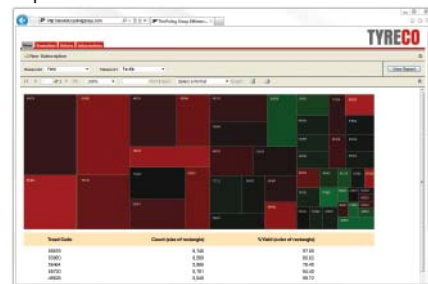
select off-the-shelf data analysis tools to avoid data overload, where:

- Huge amounts of data are completely cut off from the source and stuck in a multitude of spreadsheets.
- Productive hours are lost generating and analysing lengthy reports to identify production and quality trends.
- IT spends too much time developing specialised queries to satisfy user reporting requests.

At Poling Group, we use proven expertise to organize large, complex sets of data into warehouses and OLAP databases. We assist our clients in choosing the best tools from the marketplace to monitor changing operational status, and offer their staff training to ensure adequate maintenance and support for any data project. 24/7 remote support is always an option.



Select a dashboard tool to monitor production or quality status, by department or across the enterprise, complete with automatic alert capabilities.



The heat map presents volume as block size and status as color. At a glance, you can quickly discern what problems demand your immediate attention.



Once you identify a problem, use drill-down tools to quickly determine root cause. At Poling Group, the future is available now.

www.PolingGroup.com/solutions