

**BUMA**, a global mining business led by solid commodities and high-powered excavations, recognizes the need to innovate in order to stay ahead of the changes to the workflow processes of heavy machinery that is disrupting the industry. It saw the Pure Storage all-flash array technology as the breakthrough solution that would help drive business results across its complex operations. Seizing this opportunity by onboarding with Pure Storage gave BUMA a unique advantage in the competitive landscape, in preparation for strategic regional expansion. With the all-flash array technology, it could use data to monitor the health of its mining equipment and dynamic on-site conditions.



#### BUSINESS TRANSFORMATION

Faster data processing facilitates smarter condition-based monitoring of BUMA's extensive network of advanced mining equipment, leading to 180% improvement in average components lifetime. The Pure Storage data infrastructure for predictive maintenance enables greater operational reliability and client confidence, while the lower carbon footprint and Evergreen model reduces capital expenditure.

#### GEO

Indonesia, Southeast Asia

#### INDUSTRY

Mining

“The future of the coal-mining industry truly lies in the technology that can provide real time insights for flexible decision making, optimize workforce productivity and analytics to predict equipment failure.”

Edwin Rene, *Manager of IT*

#### TRANSFORMING COAL-MINING OPERATIONS THROUGH DATA

Established in 1998, BUMA is one of the largest coal mining service providers in Indonesia, with 10,000 employees currently running operations in the East, South, Central Kalimantan and Sulawesi. Its customers include PT Berau Coal, PT Adaro Indonesia, PT Kideco Jaya Agung and PT. Sungai Danau Jaya, but BUMA is also looking to provide mining solutions and services further afield across Southeast Asia.

Catering to all stages of coal mining, each of BUMA's equipment comes with its own Operational Excellence Management System that remotely collects data from multiple sensors. This is because BUMA operates with a wide variety of advanced mining machinery across diverse terrains. As the business continues to grow, the amount of data is quickly exceeding the capacity of its existing storage infrastructure. Critical decisions around equipment maintenance and personnel deployment has also become more pressing.

The Pure Storage FlashArray//M50 solution facilitated the transformation of these processes by accurately monitoring the health of its machinery and swiftly mapping this against personnel availability and competencies. “With over 50 sensors on each equipment, we can accurately predict the health of the equipment and prolong their lifetime to its maximum capability without compromising on safety,” said Edwin Rene, Manager of IT at BUMA. At the same time, on-site supervisors are able to input their observations on the machine operators' performance. The data is processed and cross-analyzed quickly, so operators can make the necessary adjustments to deliver optimal results.”

The company has since achieved a 180% improvement on its average component lifetime, and is looking to enhance its entire operations over the next four years. More importantly, BUMA's stronger capability to monitor equipment health effectively eliminates the need for an inventory of spare parts that can be costly to maintain. The optimized analysis of personnel performance and deployment also enables the company to track the condition of its mining sites more closely for better planning and management. Moving ahead, BUMA plans to analyse the coal market, coal price index, as well as their competitor activities for an even bigger advantage in the industry.

#### USING DATA TO TRANSFORM THE BUSINESS

For Edwin and his team, the transformation is only just beginning. While coal-mining processes are primarily driven by hard technology that is tried-and-tested, BUMA believes that data analytics will transform and evolve the industry's typical workflow.

**COMPANY:**

BUMA (PT Bukit Makmur Mandiri Utama)  
[www.bukitmakmur.com](http://www.bukitmakmur.com)

**USE CASE:**

- Database – Microsoft® SQL
- Virtualization – VMWare®

**CHALLENGES:**

- Rapidly growing silos of data from complex mining equipment and sites need to be processed efficiently.
- Need to improve equipment health that will impact the optimization of operations, and purchase of stocks, parts and inventory.
- Deleted partition in the previous system threatened to undermine operational reliability.

**IT TRANSFORMATION:**

- Response time for key database query slashed.
- Data compression surpasses any other competitors.
- Potential disk malfunction was detected well before it occurred, allowing BUMA's IT team to rely entirely on Pure Storage's predictive analytics to manage maintenance and ensure optimal reliability.

“The Pure Evergreen™ Storage model offers the best value for us to stay at the forefront of an evolving landscape, while minimizing capital expenditure.”

Edwin Rene, *Manager of IT*

In fact, the company is already starting to pilot the use of technology for precise site mapping. “The new technology with Pure Storage allows us to make faster decisions on the process of the machinery, which will result in a much more agile company. I believe that this is our biggest differentiator from our competitors,” said Edwin.

Apart from the superior speed in processing data, BUMA is also gearing up for continued data growth through the frequent updates that Pure Storage seamlessly provides. The Pure Evergreen™ Storage model means that BUMA will not need to invest in more physical storage areas even as the company goes regional, saving energy and cost in the long run. For service providers like BUMA that tailor their operational plans to each project, such flexibility and assurance of long-term viability are critical.

More importantly, through Pure Storage's advanced predictive analytics, BUMA truly benefits from a comprehensive data platform of the future — where any hardware faults are identified in advance, and corrective steps taken immediately. Before BUMA's IT team even detects any problem or raises a help ticket, Pure Storage has already taken care of it, leaving virtually no disruption in the workflow.

**CONSOLIDATING CRITICAL WORKLOADS ON FLASH**

Considering the major leap forward in technology, the transition to Pure Storage from its existing legacy infrastructure was very smooth. This is mainly because of the company's existing Virtual Machine application that has all the company's visuals. The compatibility with SAP HANA also means that BUMA can shed its reliance on ECC 6.0 and continue streamlining its business processes to accomplish things faster. Pure Storage's compression rate was also fast and superior, as it has the ability to compress a lot of data quickly in a small size and remove duplicated data for space efficiency.

Along with the ease in transition, Pure Storage's ability to support large amounts of data and process them quickly means that the company can be more agile in taking advantage of big data analysis. “The solution is really quite elegant,” Edwin said. “Being able to access data that was relatively untapped previously, we are able to make faster decisions and have a quicker response rate which will differentiate us from our competitors within the industry.”

Like many businesses coping with data explosion, BUMA recognizes that the multidimensional workloads in the cloud era would require a hybrid solution — moving non-strategic data to public clouds like Microsoft's Azure Services and Office365, while maintaining mission-critical workload on Pure Storage, since flash is faster and more secure. The Pure Storage solution will power its data management systems for critical applications like equipment monitoring and SAP HANA, as well as other future applications.

“Pure Storage fundamentals like impressive data compression, speed, and proactive service have made us very happy,” Edwin noted. “As we step into a very dynamic phase of data-driven growth, we know we can rely on Pure Storage for support and upgrades. We look forward to the next big thing the company will produce.”



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