

Tooling up for future innovation - turning overlooked process opportunities to immediate and long-term benefit

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ABSTRACT

From decades of researching mill operation and conducting process improvement studies, the author has derived a host of valuable insights into the milling process as a system. The inter-connectedness of the process is partially appreciated in the industry at a high level, but from the author's experience is lacking at an operational level. Much of what the author has uncovered appear prosaic or obvious; are well-understood within specific engineering disciplines; would be defined as mineral processing 101; or are standard process control logic, but these are lacking in the production environment. A different level of insight into the physics of the equipment and processes is another area of neglect. This should be the role of the Metallurgists, but advanced training for advanced technical roles is lacking. Graduates are placed on sites and expected to operated complex processing circuits with barely any direct training in the subject. The expectation is that they will learn on the job, but from whom?

Lying hidden under this thick layer of grey opportunity is neglect of the industry in developing high-performing systems. While pursuing the vision of ore sorting, dramatically energy-efficient mills, and coarse recovery, the inability to effectively operate existing plants is overlooked. Regardless of progress made in advanced technology, it is surely of value to uplift existing operations, for immediate return, and to provide a platform of technology and operating ability that will be able to effectively operate the more complex and technically demanding processes of the future. Embracing the opportunities lie firmly and affordably, in the grasp of the mining industry, through leadership from the top.

This paper provides the author's view of the approach that the industry may take in liberating up to 20% upside in production of current operations while tooling up for future innovation.