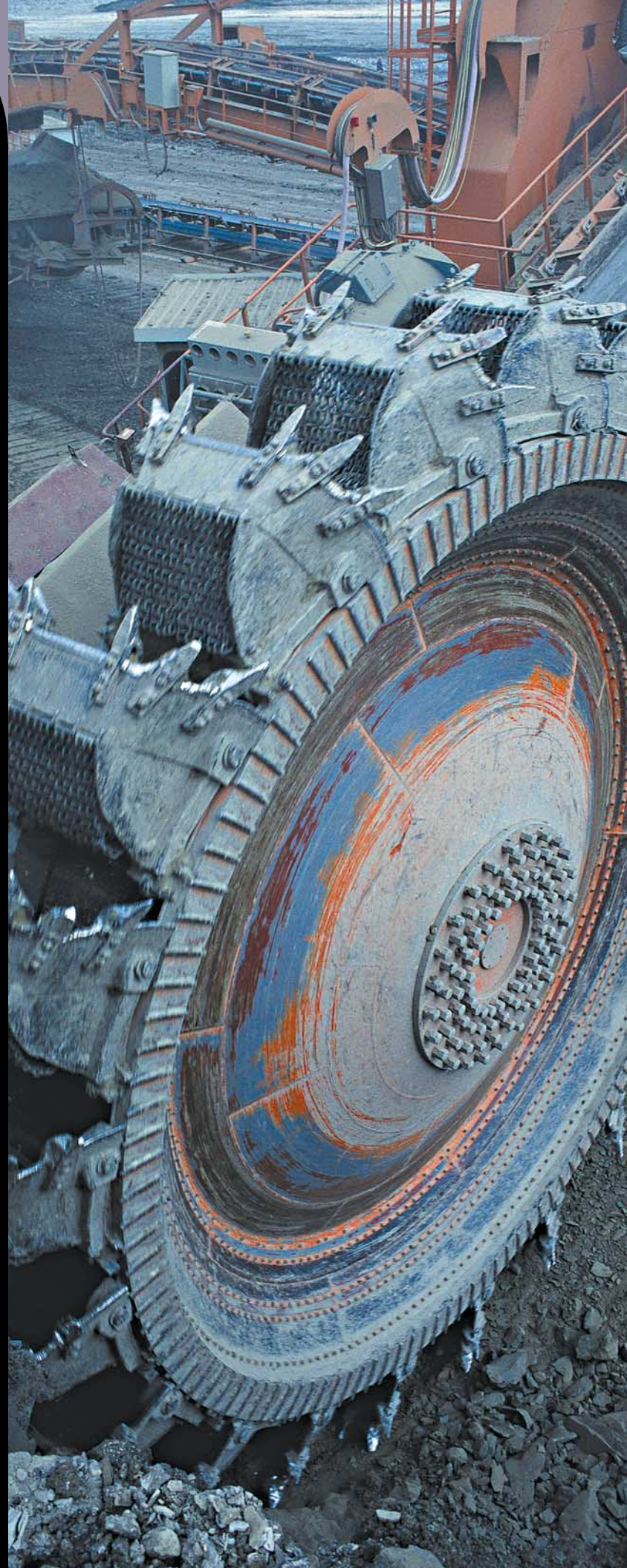


USCCG

When It Comes
To Mining,
We Can Help
You Improve From
The Ground Up

*USC Consulting Group:
An Experienced Professional
Resource for the Mining Industry*



mining

Mining Industry Experience

USCCG has been actively engaged in the mining industry for many years. During that time we've helped many well-known and highly regarded companies to:

- Improve labor productivity
- Improve return on capital
- Improve return on CMMS investment
- Increase mill recovery
- Increase rate of development
- Increase throughput
- Integrate and augment internal improvement efforts
- Model optimal performance and implement required changes
- Reduce inventory investment
- Reduce maintenance downtime
- Reduce process variation
- Reduce unit costs of production
- Reduce working capital
- Re-engineer administration
- Upgrade maintenance management systems

Processes Worked

We've improved nearly every process, including:

- Mill, smelter and refinery production and maintenance
- Mine engineering (short-, mid- and long-term capacity planning)
- Open pit operations (gold, coal, copper, iron ore, zinc, and platinum group metals)
- Supply chain (purchasing, inventory, warehouse, truck and rail haul)
- Underground operations (gold, copper, nickel, lead, zinc, potash, and platinum group metals)
- MRO and consumables inventory modeling and optimization
- Problem identification and resolution
- Process mapping linked to optimum performance
- Statistical process control
- Upgrading general and method-specific management skills
- World class maintenance management techniques

Totally Customized Approach

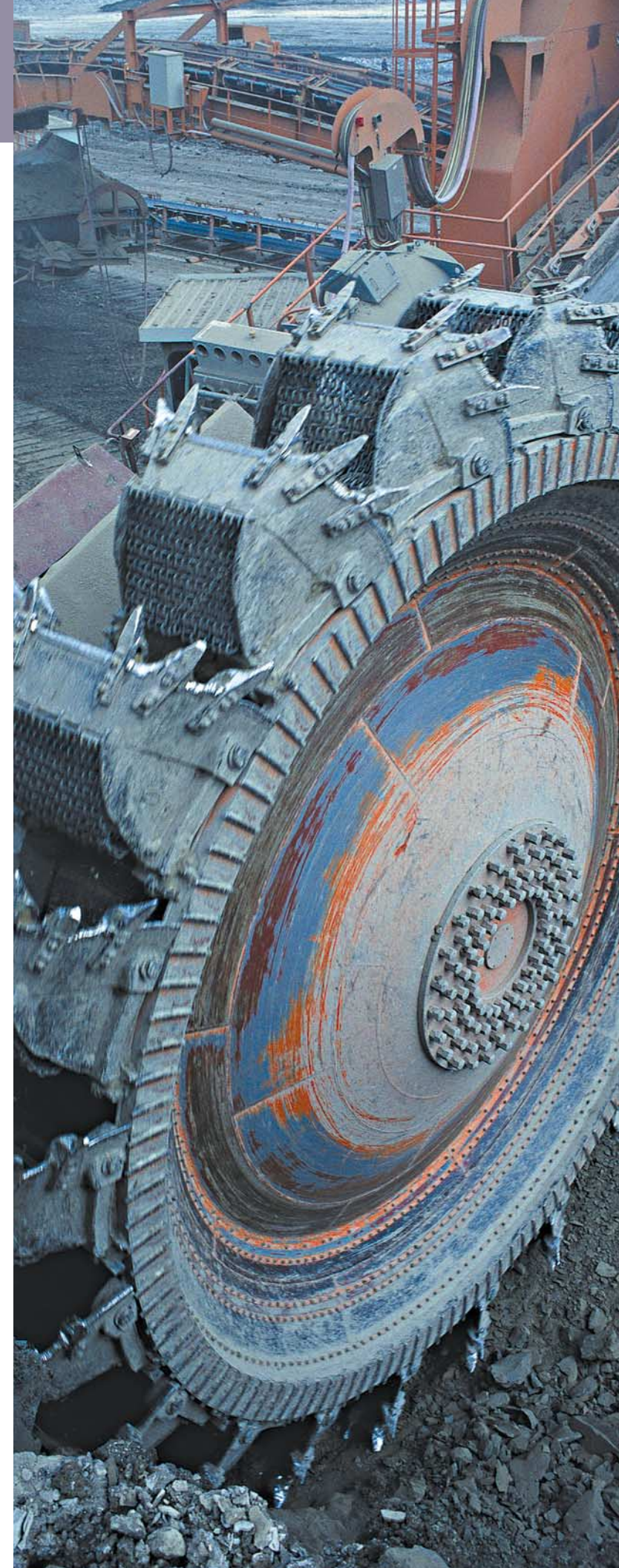
Our approach is totally customized for each client and situation but will typically include some or all of the following components and/or methodologies:

- Advanced capacity planning (linked to geological database)
- Cycle time decomposition and reduction techniques
- Direct linkage of maintenance requirements to capacity plan
- Identification of source and root causes of process variation

Client Benefits

These tools and techniques enable us to deliver a wide range of benefits to our clients:

1. Increased equipment availability
2. Increased throughput from development, production, and processing
3. Lower inventory investment and procurement costs
4. Lower operating costs
5. Reduced maintenance cycle time
6. Reduced process variation
7. Significant financial and operational improvements



Our Work

Let's take a look at some of our work in the mining industry. Each of the following solutions was totally customized and implemented by USCCG professionals, using proprietary techniques and methodologies, to meet the unique needs of individual clients. Here are some highlights from three real engagements.

Case History # 1

Large open pit copper mine wanted to supplement and accelerate in-house improvement initiatives to become the industry's low-cost producer.

Our Assignment: Use existing human and capital resources to increase production and lower cost-per-ton.

Our Approach:

1. Involved employees from all levels to develop improvement prototypes.
2. Taught dispatchers how to better use dispatch system to synchronize loaders, shovels and trucks in the pit.
3. Corrected deficiencies and trained personnel in the use of statistical process controls (SPC) in the flotation process.
4. Implemented continuous improvement process (CIP) and necessary management operating system upgrades to perpetuate improvements.

The Results:

1. Mine cost per ton reduced over 23%
2. Production tons per day improved 22%
3. Concentrate grade improved over 7%
4. Density control improved over 1%

Case History # 2

Mine in operation 50+ years, facing increased cost pressures stemming from depressed price of gold in world markets, needed to streamline operations.

Our Assignment: Improve throughput rate with existing equipment and human resources to reduce production and plant operating unit costs.

Our Approach:

1. Generated capacity planning tools and standards that clearly defined optimal performance for all major production activities.
2. Used SPC studies to determine and ultimately control the drivers of gold recovery.
3. Installed automatic work order system along with shut-down planning to reduce time lost to maintenance.
4. Installed self-dispatching system in open pit to synchronize truck and shovel capacities.

The Results:

1. Capacity plan attainment increased 25% in underground operation
2. Tons-per-operating hour improved 9% in mill
3. Gold ounces recovered per week increased 26%
4. Monthly downtime hours decreased 45% in the mill
5. Maintenance labor costs decreased 17% throughout the site

Case History # 3

Underground nickel and copper mine wanted to reduce operating cost per ton mined.

Our Assignment: Reduce operating cost per ton mined.

Our Approach:

1. Developed, with client input, internal benchmarks for all production activities.
2. Created a capacity plan for engineering use in translating planned work volumes

into resource requirements on a monthly, weekly, daily shift basis.

3. Trained employees and foremen to use benchmarks for daily planning, assignment giving, and to drive the continuous improvement process.
4. Implemented Mean Time Between Failure/Mean Time to Repair concepts to drive maintenance productivity and reliability improvements.

The Results:

1. Capacity plan attainment increased to 110% of budget
2. Tons produced/shipped to mill increased 12%
3. Tons shipped per man shift increased 15%
4. Cash cost per ton reduced 17%
5. Scoop tram Mean Time Between Failure improved 83%
6. Employee suggestions for improvement increased six-fold

These results are fairly typical of what we've been able to accomplish in the mining industry. You can review other case histories on our web site.

For more information, contact us at **800-888-8872** or www.usccg.com.



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