

A methodology for plant efficiency improvement



Choose the advanced ef-X™ to:

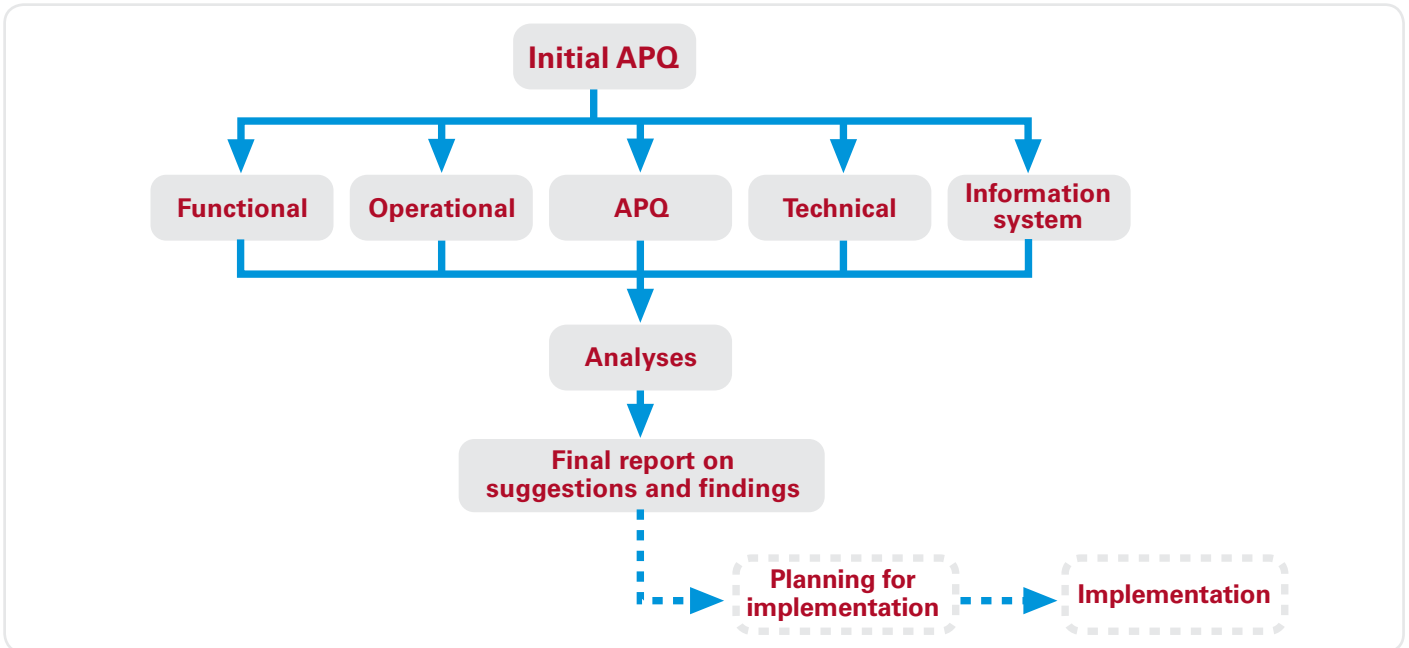
- Identify sources of additional profit
- Maximize net qualified production
- Improve efficiency in operations and maintenance
- Stimulate continuous future development

With regard to metallurgical processes, related equipment or complete plants, Outokumpu Technology provides you with comprehensive services to identify the areas with the most potential for improvements. Our advanced ef-X, Efficiency Explorer™ methodology, combines the optimum utilization of local expertise with our long and vast global experience.

Identify sources of additional profit

As our partner, you can increase your bottom-line profit without significant investments. Ef-X identifies the areas with most potential for improving the total efficiency of your plant. As a result, you can reduce both capacity losses and quality losses and increase total operating time.

Ef-X is a comprehensive methodology that generates a prioritized list for low-cost improvement opportunities and establishes Key Performance Indicators for the follow-up of continuous improvements. In addition, ef-X utilizes the expertise of all personnel levels in the organization and stimulates on-going development from within.



Plant ef-X process.

Maximize net qualified production

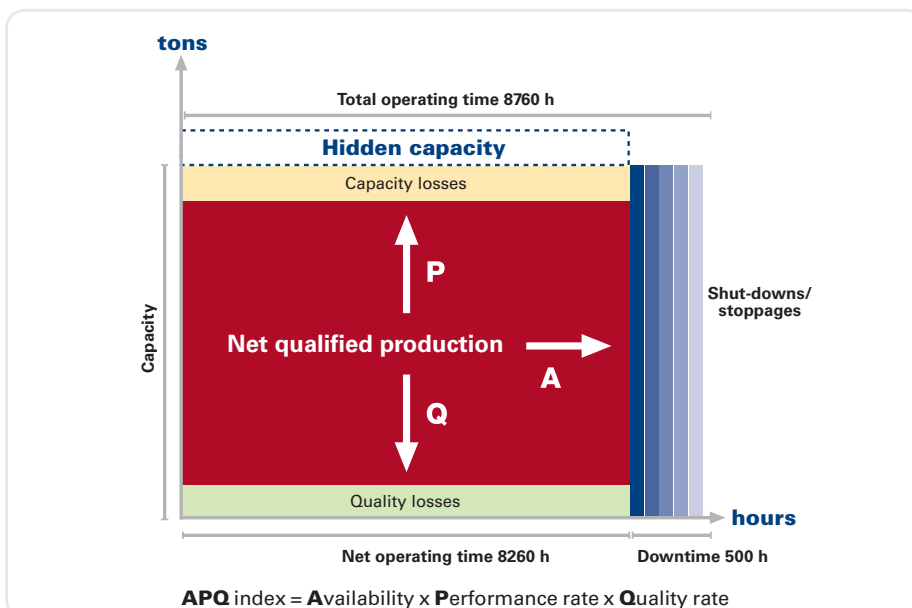
Ef-X uses the APQ assessment, which is a proven methodology for investigating production plant efficiency. The APQ index is calculated for plant sections and for the plant as a whole. Subsequently, this forms a reference point for follow-up after the identified improvements have been realized.

The ef-X methodology covers functional, operational, technical and information system areas. The end result of the systematic investigation is a prioritized list of improvement potential aiming at overall optimization. On a practical level, it brings you the opportunity to minimize both capacity losses and quality losses as well as shut-downs and stoppages.

The Outokumpu factor

The Outokumpu factor is the competitive advantage we give our customers by helping them enhance the performance of their processes and products. It is a factor our customers rely on to help them overcome even the most demanding challenges, giving them the edge in business.

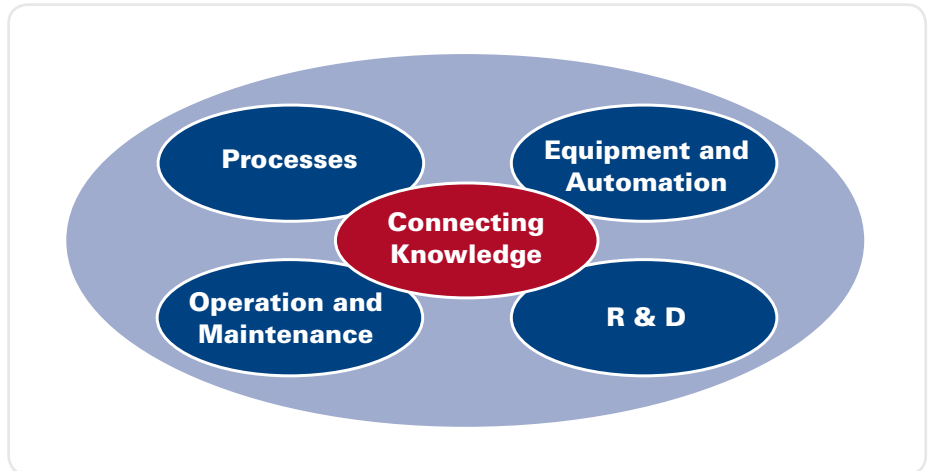
Ef-X identifies ways to increase net qualified production.



Benefit from our vast expertise

Outokumpu has a strong background in mining and metallurgical operations. Our expertise covers production, maintenance and process development. We also have a long and successful history in the design and manufacturing of equipment and automation for the minerals processing and metallurgical industries.

Our advanced R&D facilities and resources provide an excellent basis for offering you complete tailor-made solutions. As our customer, you benefit from our detailed understanding of the entire metals processing production chain.



Core strength of the ef-X methodology.

Superior services

The aim of our knowledge-based services is to maintain a long-term and beneficial partnership. We provide you with the right tools to make your plants, operational processes and equipment more cost-effective. Our after-sales service covers:

- Installation supervision and commissioning
- Training
- Spare parts
- Service contracts
- Maintenance and overhaul services
- Equipment, plant and process assessment and consulting
- Operational support services
- Retrofit and modernization packages



Ef-X work books.



Outokumpu is a dynamic metals and technology group. Focusing on our core competences, that is, extensive knowledge of metals and metals processing, we aim to be leaders in all of our key businesses: stainless steel, copper and technology. Customers in a wide range of industries use our metals, metal products, technology and services worldwide.

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