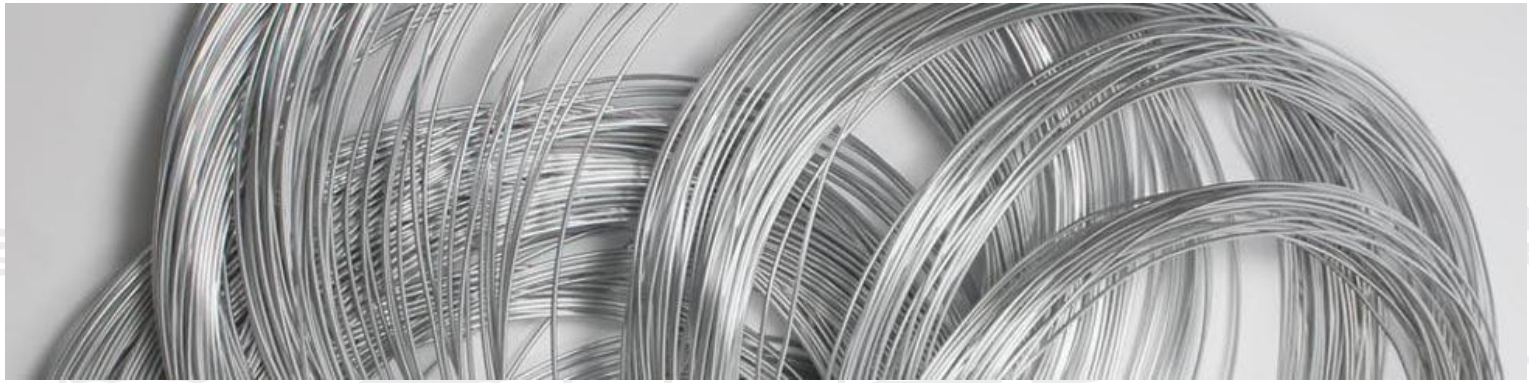
ZINC APPLICATION

Continuus Properzi

Zinc and zinc alloy wire



Zinc wire and Zinc Alluminium alloy wire is used to apply zinc coatings by metal spraying process on steel products in order to protect them against corrosion. Zinc and zinc alloy wire sprayed coatings are integral steps in the manufacture of various electronic, capacitor, automotive, heat exchanger and tube & pipe products. Thermally Sprayed Zinc based alloy wire coatings are also used in the Corrosion protection of bridges, locks & dams, above ground storage tanks, light poles, and other critical infrastructure.

WHAT IS CORROSION?

Continuus Properzi

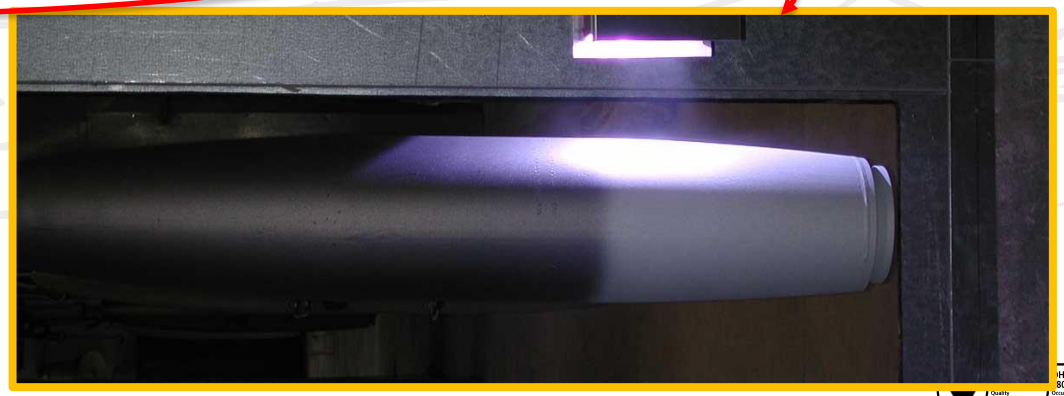
The ISO 8044 standard defines corrosion as a physical-chemical interaction between a metal and its environment, leading to modifications of the properties of the metal and often to a functional deterioration of the metal itself, of its environment or of the technical system formed by the two factors…
Corrosion is an entirely natural process, and its cost is extremely high since the annual loss is estimated to be 2.5% of the GNP.

HOW TO PREVENT CORROSION?

Continuus Properzi

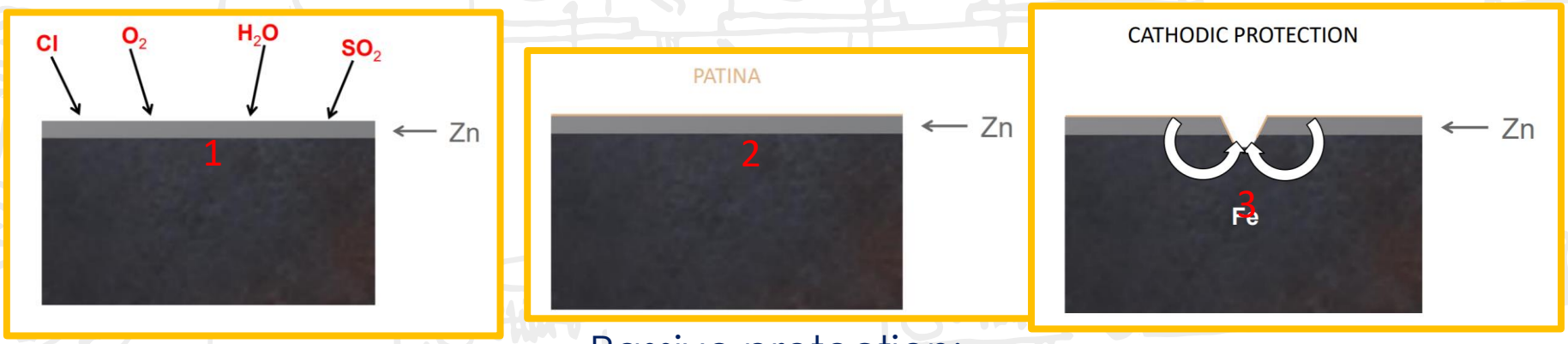
For corrosion to set in, an electrolyte (generally, water) must transfer electrons.
To prevent this phenomenon from occurring, the process needs to be interrupted by a barrier applied between steel and water.
This can be achieved by different means:

- paint;
- hot galvanizing;
- thermally sprayed zinc (TSZ);
- thermally sprayed zinc-aluminum (TSZA);
- duplex system.



WHY THE USE OF ZINC?

Zinc will protect in more than one way:
like paint and galvanizing, zinc will form a barrier layer;
zinc will then oxidize and form a patina layer providing additional protection;
zinc and zinc-aluminum have an additional advantage: zinc will provide cathodic protection, which means that in case of coating damage down to the steel, zinc will be sacrificed and thus prevent the steel from corroding.



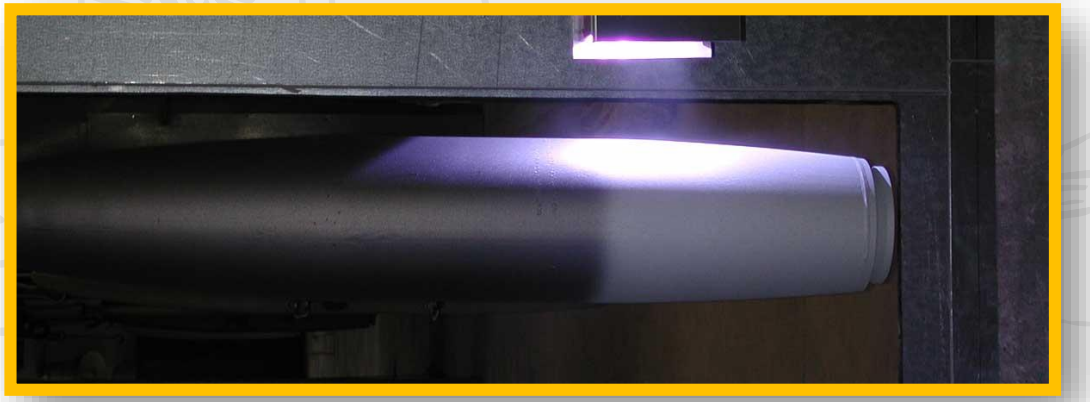
Passive protection:

1) Barrier protection of the metal against aggressive elements
2) Zinc reacts with aggressive agents in the atmosphere to form a protective layer, PATINA
3) Active sacrificial function of Zinc

WHY METALIZATION?

Continuus Properzi

- No size limitation which can ultimately reduce the number of field splices needed when compared to galvanized members (offshore wind platform)
- No drying or curing time, which greatly increases manufacturer productivity
- Zinc is a recyclable material and the metallizing process produces zero volatile organic compound emissions.
- Low temperature process in which the metallized surface never exceeds 120-150°C. Thus, there is virtually no risk of weld damage or distortion of the steel due to high temperature or overheating.



WHY METALIZATION?

Continuus Properzi

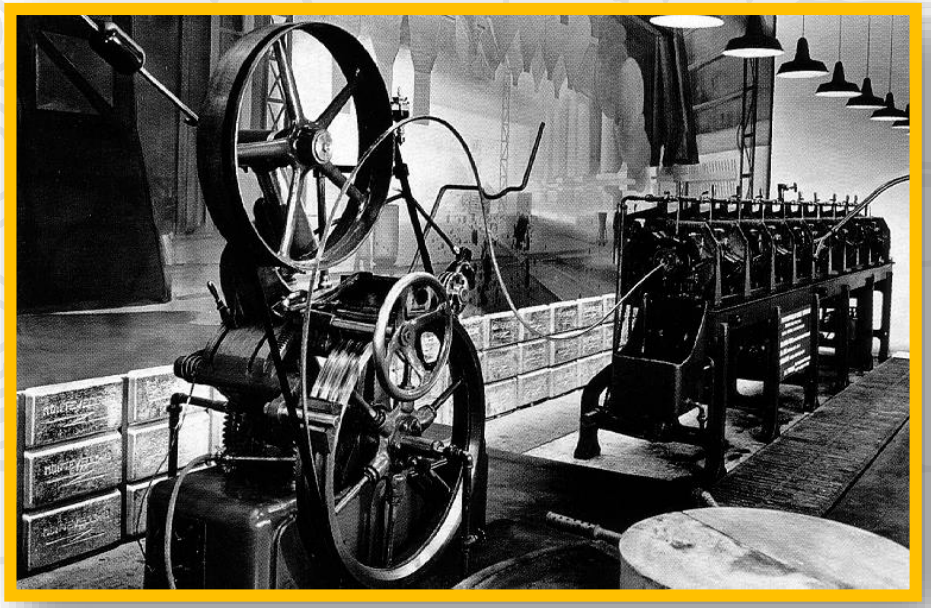
- No size limitation which can ultimately reduce the number of field splices needed when compared to galvanized members (offshore wind platform)
- No drying or curing time, which greatly increases manufacturer productivity
- Zinc is a recyclable material and the metallizing process produces zero volatile organic compound emissions.
- Low temperature process in which the metallized surface never exceeds 120-150°C. Thus, there is virtually no risk of weld damage or distortion of the steel due to high temperature or overheating.

bsi. ISO 9001 Quality Management FM 33637 OHSAS 18001 Occupational Health & Safety Management OHS 586148

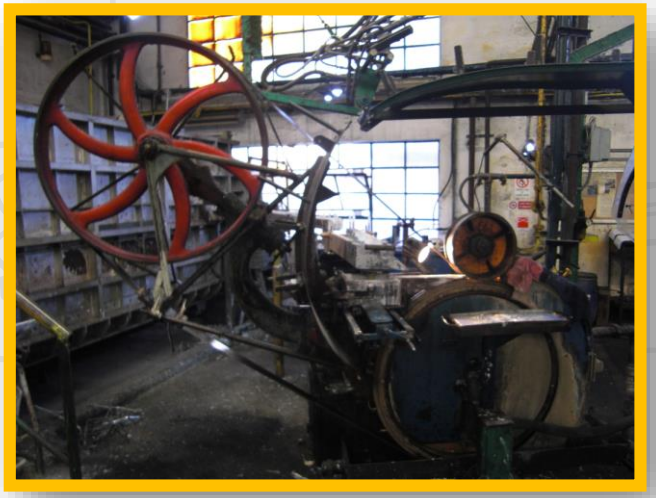
Continuus Properzi

WORLDWIDE MARKET DEFINED PROPERZI TECHNOLOGY THE BEST ONE FOR PRODUCING PURE ZN AND ZN-AL ALLOYS ROD & WIRE

EVERYTHING STARTED FROM A VERY SIMPLE LINE



From INGOT to WIRE ROD for producing pure Zinc wire WHAT WE DONE……



bsi. ISO 9001 Quality Management FM 33637 OHSAS 18001 Occupational Health & Safety Management OHS 586148

TYPICAL CCR ZINC LINE IN OPERATION

Continuus Properzi

THANKS KHOSLA ENGINEERING LTD - INDIA

VERY EFFICIENT FURNACE SET

Continuus Properzi

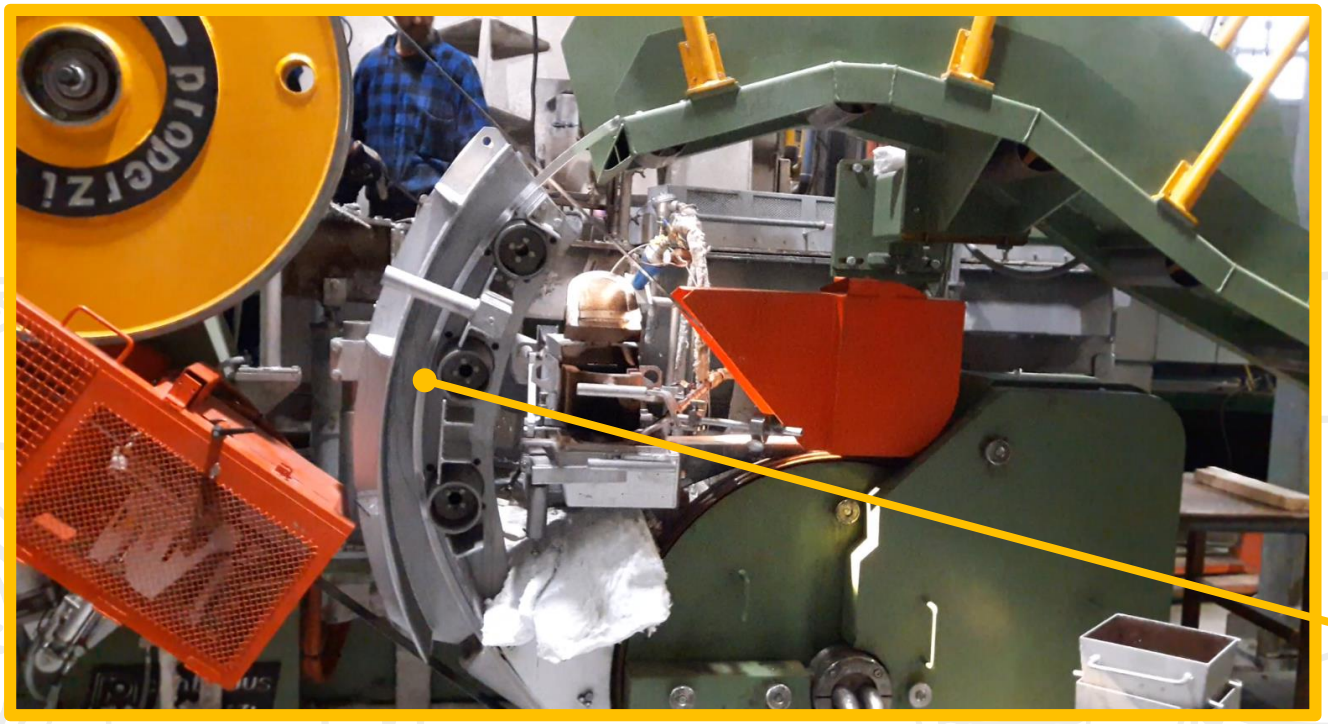
GAS FIRED FURNACES

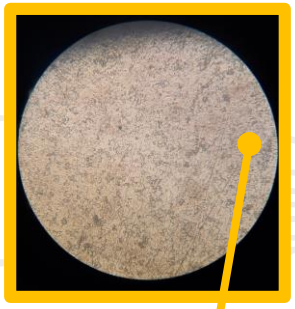
ELECTRICAL FURNACE

bsi. ISO 9001 Quality Management FM 33637 OHSAS 18001 Occupational Health & Safety Management OHS 586148

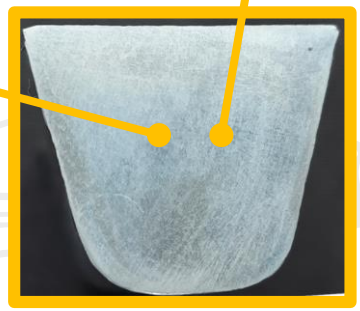
CASTING MACHINE

Continuus Properzi



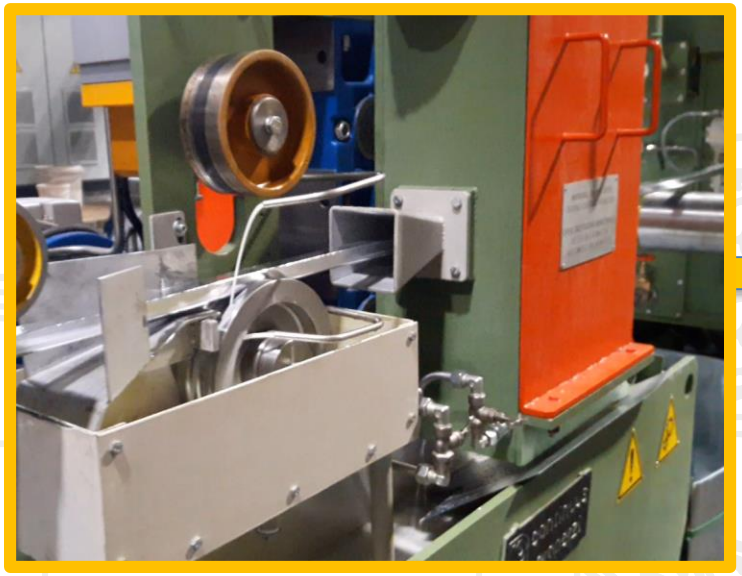


200 x



The Casting Machine is the heart of the line: sophisticated alloys require the most detailed and precise design in all individual parts. Cooling is the diamond of the machine. Cooling parameters can be stored in the PLC as recipes.

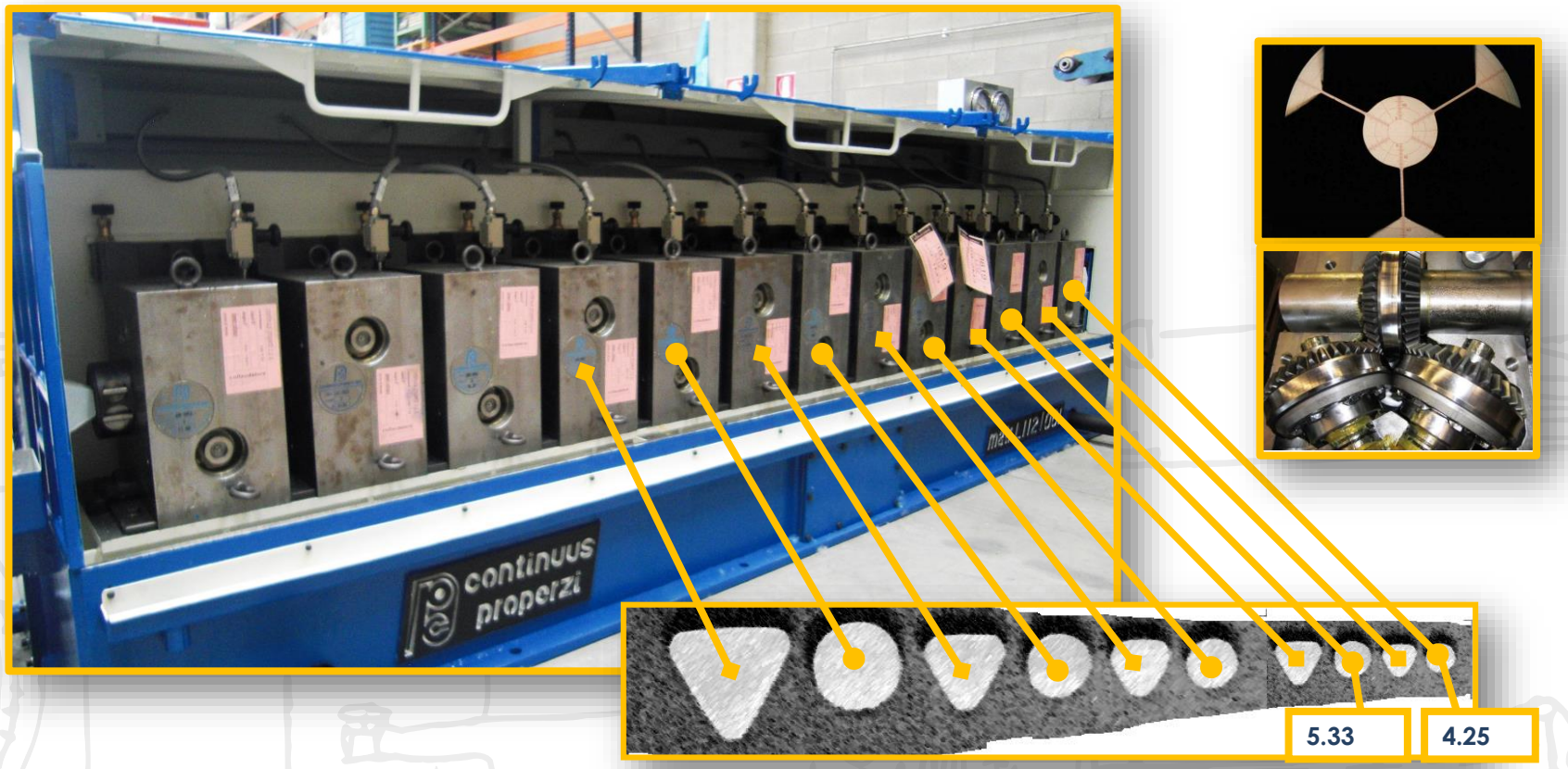
BAR AUTOMATIC SHEAR



Before approaching the rolling mill the bar must be pass through the following machines:

- AUTOMATIC SHEAR provided to cut the cast bar at the startup of the Line and in the unlucky event of emergency. The cutting system is composed by two drums rotating on horizontal axis; each drum contain at least two blades which cut the cast bar during the rotation of the drums

ROLLING MILL



The Rolling Train is the Swiss watch of the line: This technology facilitates a nearly perfect balance of lateral spread and longitudinal displacement of the metal during each reduction step - the 3-roll rolling system allows excellent control of the rod geometry avoiding the temperature loose.

CONCENTRIC BASKET COILER

Continuus Properzi

The coiler is designed to coil the wire coming from the rolling mill into concentric coils for internal transportation. We can make coils of 5.33mm and 4.25mm depending on the final products.

ADVANTAGES

Continuus Properzi

The Continuous CCR (Continuus Casting & Rolling) Lines by PROPERZI is considered the worldwide best and simple system for producing rod and the most economical way for producing wire. The advantages of PROPERZI technologies are:

- No problem in maintaining constant the rod parameters
- High productivity and precision in automation
- Reliable and convenient packaging
- Technical support always available (consultancy@properzi.it)
- Unparalleled customer satisfaction

Customers who use PROPERZI CCR rod and wire always experience an increase in their profits