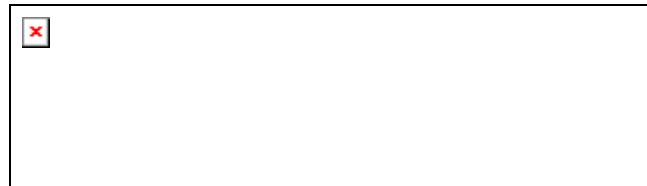


Bergforsk May 23rd 2007

“Significant achievements”

Göran Bäckblom
MD MITU

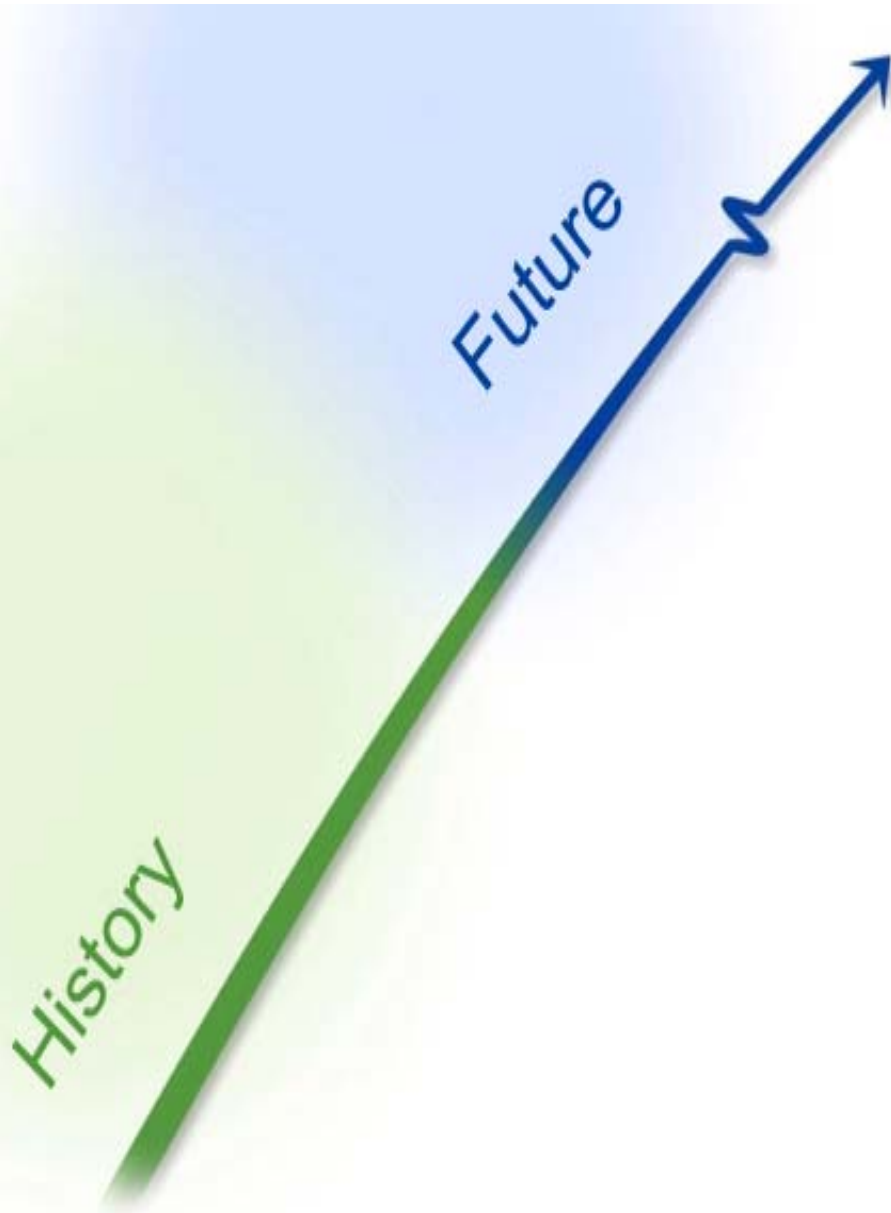


Bergforsk

The past and future society without minerals and metals is unthinkable

- The average citizen in the Western world consumes 1,700 ton of mineral and metals (25 tonnes annually) for roads, buildings, cars, household equipments etc.





- 1 There is a mine for silver
and a place where gold is refined.
- 2 Iron is taken from the earth,
and copper is smelted from ore.
- 3 Miners put an end to the darkness;
they search out the farthest recesses
for ore in the blackest darkness.
- 4 Far from human dwellings they cut a shaft,
in places untouched by human feet;
far from other people they dangle and sway
- 5 The earth, from which food comes,
is transformed below as by fire;
- 6 lapis lazuli comes from its rocks,
and its dust contains nuggets of gold.
- 7 No bird of prey knows that hidden path,
no falcon's eye has seen it.
- 8 Proud beasts do not set foot on it,
and no lion prowls there.
- 9 The miners' hands assault the flinty rock
and lay bare the roots of the mountains.
- 10 They tunnel through the rock;
their eyes see all its treasures.
- 11 They search [a] the sources of the rivers
and bring hidden things to light.

Swedish mining is important in EU

Significant producer of ores EU-25 (2004)

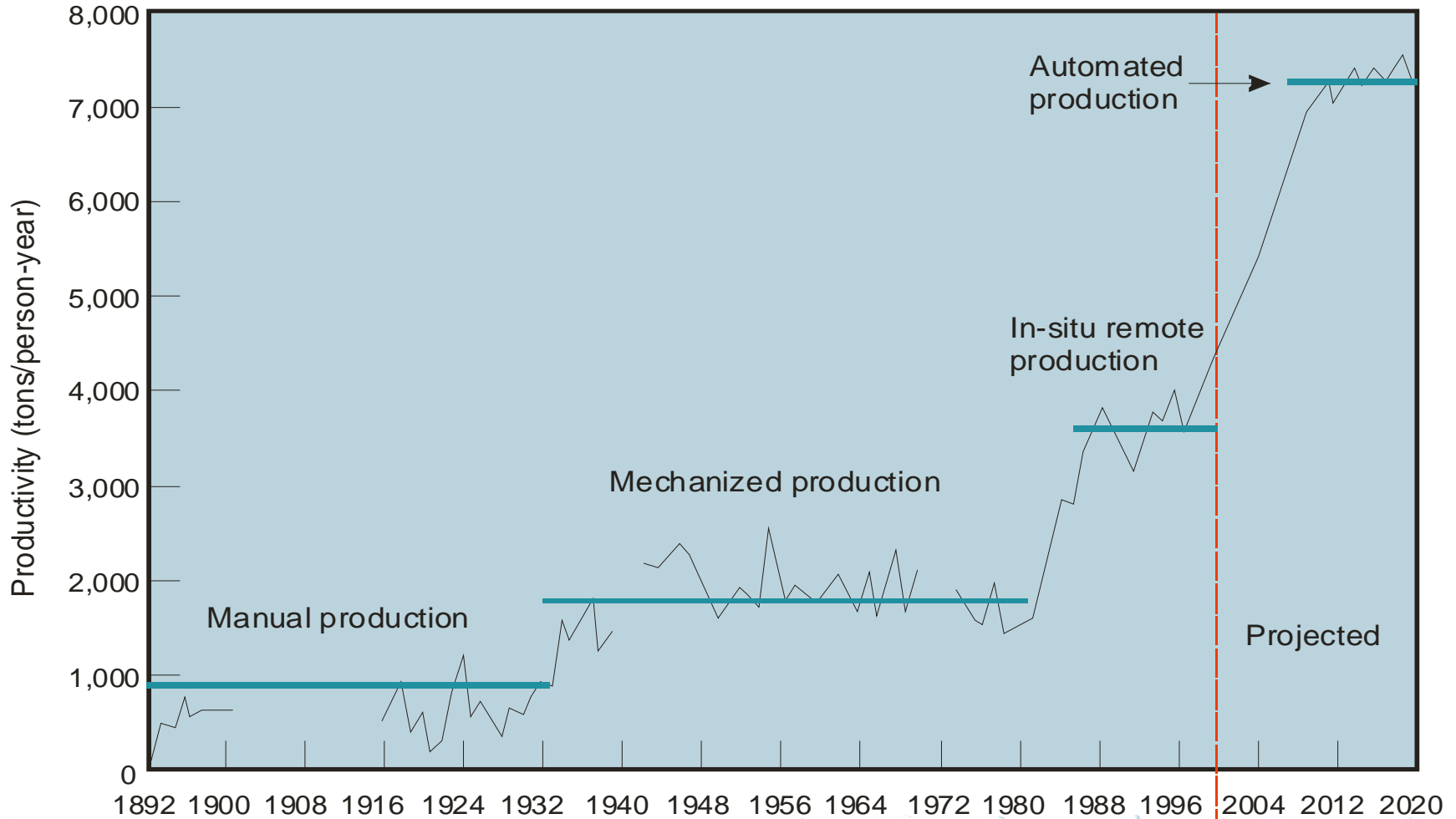
<u>Metal</u>	<u>Production</u>	<u>Rank</u>
Iron	89 %	1
Gold	27 %	2 next to Finland
Zink	24 %	2 next to Irland
Silver	17 %	2 next to Poland
Lead	30 %	3 next to Irland, Poland
Copper	11 %	3 next to Poland, Portugal

What are the main challenges of the industry?

- **Supply of minerals from new mineral resources.** No sources, no extractive industry.
- **Competitiveness.** Lower costs by productivity gains and higher revenues by value adding and new products. No profit, no industry.
- **Reuse and recycling** to use less resources and preserve non-renewable mineral assets for the future generations.
- **In harmony with the society;** otherwise no land access, no operating permits, no workforce. Minimise pollution and accidents. Maintain trust.

Productivity-Automation

Source: Rio Tinto



We need...

- We need world-leading and efficient research, development and education
- We need long-term commitments from industry, academia and society to create “critical masses” of competence
- Strength through co-operation

Swedish Mining Research Programme



- 50 MSEK (US\$ 7 M) through Government (VINNOVA) during 2007-2010
- > 50 MSEK through industry (LKAB, Boliden, Lundin etc) during 2007-2010



Wrocław
University
of Technology

Agreement Sweden – Poland May 16th 2007

- **Objectives:** Strengthening co-operation for efficiency of R&D and for creating an impact on the European arena
- **Partners:**
 - MITU – Swedish Mining Research
 - Luleå Univ. of Technology
 - AGH Univ. of Science and Technology
 - KGHM Cuprum
 - Wrocław Univ. of Technology
- **Expected outcome:** Joint projects in several areas

16.05.2007

The programme....

- Mineral economy
- Exploration
- Production technology (mining engineering, mineral beneficiation, process-IT, smelting)
- Recycling and environmental impact