



Capital Markets Day

November 2008

Lean production of the Kokkola zinc smelter

Harri Natunen

President Boliden Zinc Smelters

BOLIDEN



Business Excellency in Kokkola

Management Principles of Kokkola

Vision

best zinc producer in the world

Mission

**safe and responsible zinc production
that makes modern life work
and meets our stakeholders expectations**

Values

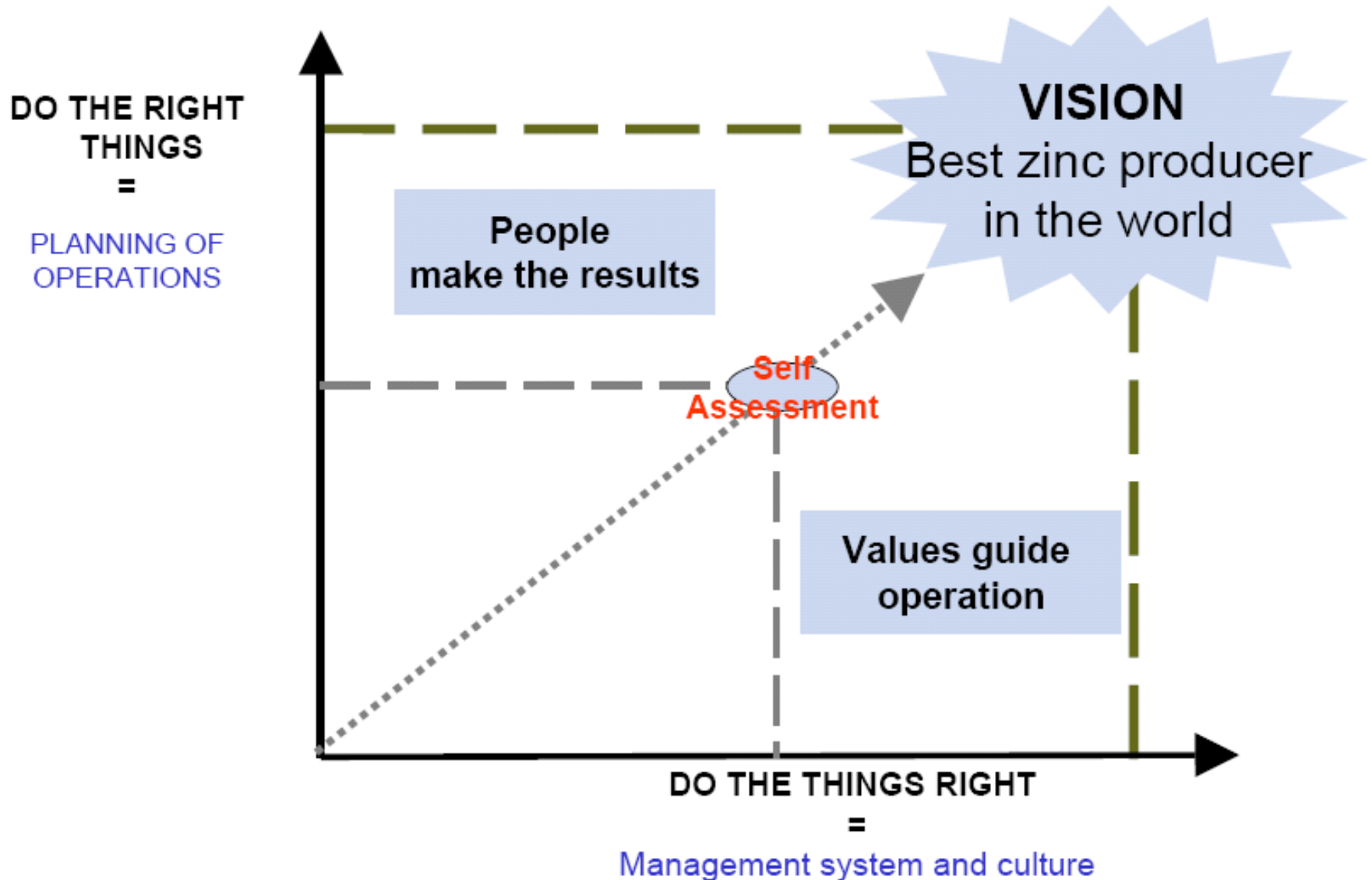
passion, responsibility and commitment

Strategic choices

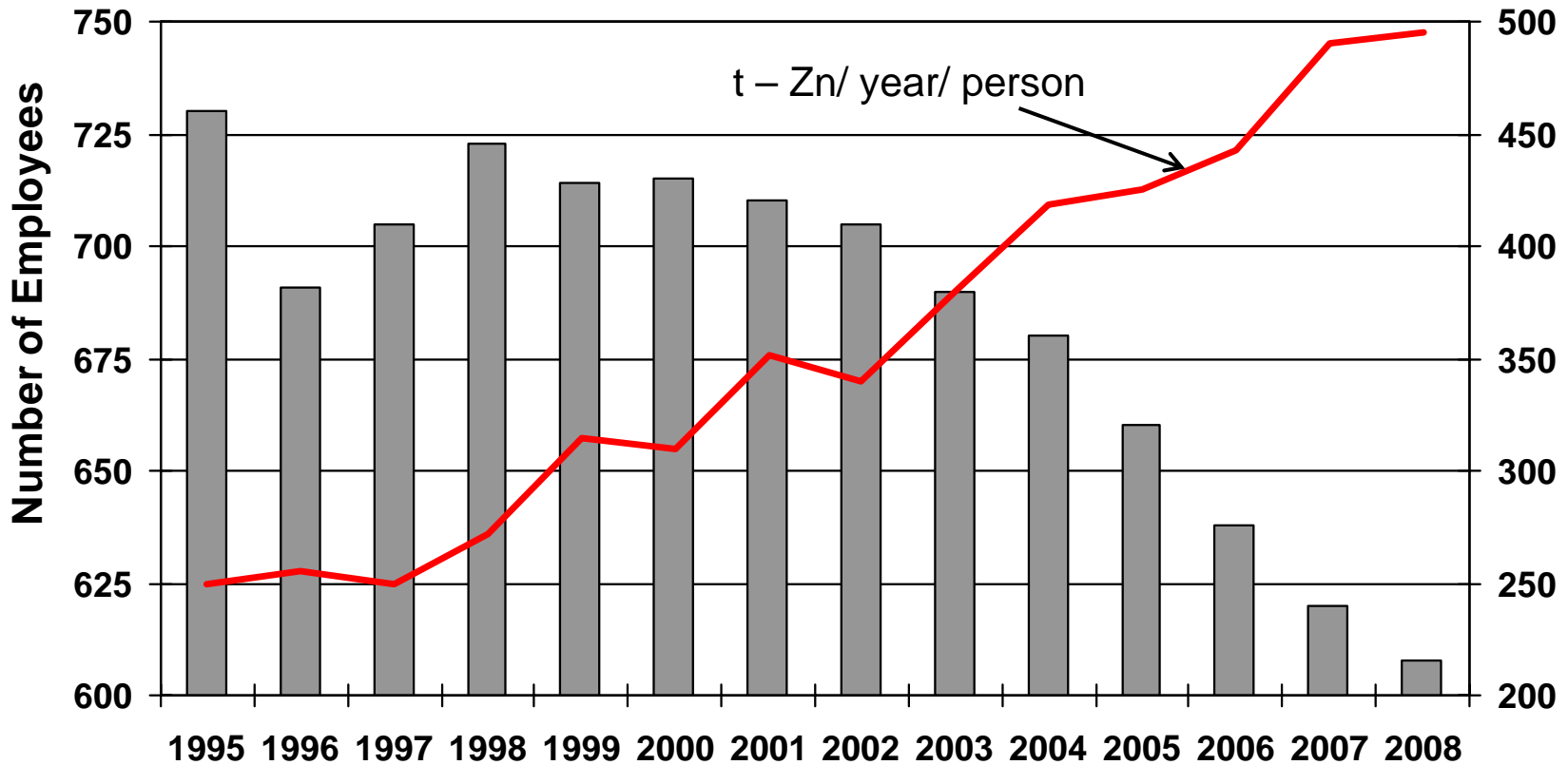
- **continuity**
- **social responsibility**
- **cost-efficiency**
- **customer focus**



Business Excellence Process of Kokkola



Production Efficiency of Kokkola





Lean Production objectives in Kokkola

General development objectives

- Promote the commitment, know-how and well being of the personnel
- Create settings for predictable operation
 - Stability
 - High quality
 - Improved customer service
- Strengthen management culture which supports occupational safety, openness and transparency
- To plan, implement and guide operation in the viewpoint of continuous improvement

Targeted long term (measurable) results

- Excellent occupational safety
- Better and more presentable working environment
- More valued workplace, positive development attitude
- Standard work procedures
- Better product quality
- High delivery reliability
- Good predictability
- Higher capacity (5 to 10%)
- improved productivity t/h/person



Lean Production, general principles

Lean Production principles 1(2)

The right process will produce the right results

1. Create continuous process flow to bring problems to the surface
2. Use the "pull" system to avoid overproduction
3. Level out the workload
4. Build a culture of stopping to fix problems, to get quality right the first time
5. Standardized tasks for continuous improvement and employee empowerment
6. Use visual control to avoid hidden problems
7. Use only reliable, well tested technology that serves your people and processes

Lean Production principles 2(2)

Add value to the organization by developing your people and partners

1. Grow leaders who thoroughly understand the work, live the philosophy, and teach it to others.
2. Develop exceptional people and teams who follow your company's philosophy
3. Respect your extended network of partners and suppliers by challenging them and helping them improve

Continuously solving root problems drives organizational learning

1. Go and see for yourself to thoroughly understand the situation
2. Make decisions slowly by consensus, thoroughly considering all options; implement decisions rapidly
3. Become a learning organization through relentless and continuous improvement

The seven wastes to be eliminated

- 1. Overproduction and early production** – producing over customer requirements, non unnecessary materials / products
- 2. Waiting** – avoid time delays, idle time
- 3. Transportation** – avoid unnecessary or multiple handling, delays
- 4. Inventory** – no holding or purchasing unnecessary raw materials, work in process or finished goods
- 5. Motion** – actions on people or equipment not adding value
- 6. Over-processing** – no unnecessary steps or work elements, procedures
- 7. Defective units** – no production of scrap or material for rework



Lean Production Implementation in Kokkola

Schedule and resources

- Lean pilot at foundry, planning in the autumn 2008
- First results in 2008
- Significant improvement during 2009
- BKO proudly presents the The New Foundry in June 2010
- Program continues department by department, focus on material handling
 - harbour logistics
 - concentrate handling
 - anode manufacturing
 - cell house electrode handling
- Program coordinator and key-persons have been nominated
- External consultant selection in progress

“Lean production”, the selected philosophy to bring
Kokkola zinc smelter towards it’s vision:

“The Best Zinc Producer in The World”



”Boliden produces metals that make modern life work.”