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Importance of manufacturing in today's world

- **Manufacturing** converts mankind's ideas, material needs & desires into the products and infrastructure that **enable our daily lives**.
- **CNC technology** is a crucial element of modern manufacturing.
- The role of technical education is to provide engineers & technologists for industry's future needs.
- The **HTEC role** is to provide the critical CNC manufacturing technologists for the future.

Manufacturing Today

- The Problem -

- All developed nations in Europe and globally are experiencing a **decline in the number of young people entering science, engineering, technology & manufacturing careers**, when in fact the exact opposite trend is required.
- **Critical shortage** of skilled manufacturing technologists, **particularly CNC machining specialists.**
- Despite high unemployment in throughout, young people are not attracted to careers in manufacturing technology !!
- In over 100 countries, where Haas does business, customers tell us of a critical shortage of qualified **CNC manufacturing technologists – Estimated 30% global shortage by 2015.**

Manufacturing Today

- European demographic problem -

- **Aging workforce** – smaller future workforce.
- Europe needs many **more young people** entering engineering & manufacturing.
- Urgent need to involve **women** in engineering & manufacturing – **CNC technology enables careers for women** in industry.
- Need to **retain 'Hi-Tech' / high value added industries** in Europe.
- Shortages of critical skills in Europe will result in **manufacturing moving to Asia / India**.

A PRACTICAL SOLUTION

Haas Technical *Education* Centers

- HTEC -

- Cooperative **partnership** initiatives between **Haas – Haas distributors – Industry Partners – Technical schools.**
- **New concept of CNC manufacturing technology training.**
- **Changing the image** of manufacturing – the ‘Hi-Tech’ educational experience.
- **Projecting the reality** of highly interesting, well-paid **careers** in manufacturing technologies.
- **HTEC – projects future manufacturing environment:**
 - *‘Hi-Tech’ - Inspiring*
 - *Pleasant - Stimulating*
 - *Attractive to young people / females*



- HTEC INDUSTRY PARTNERS -

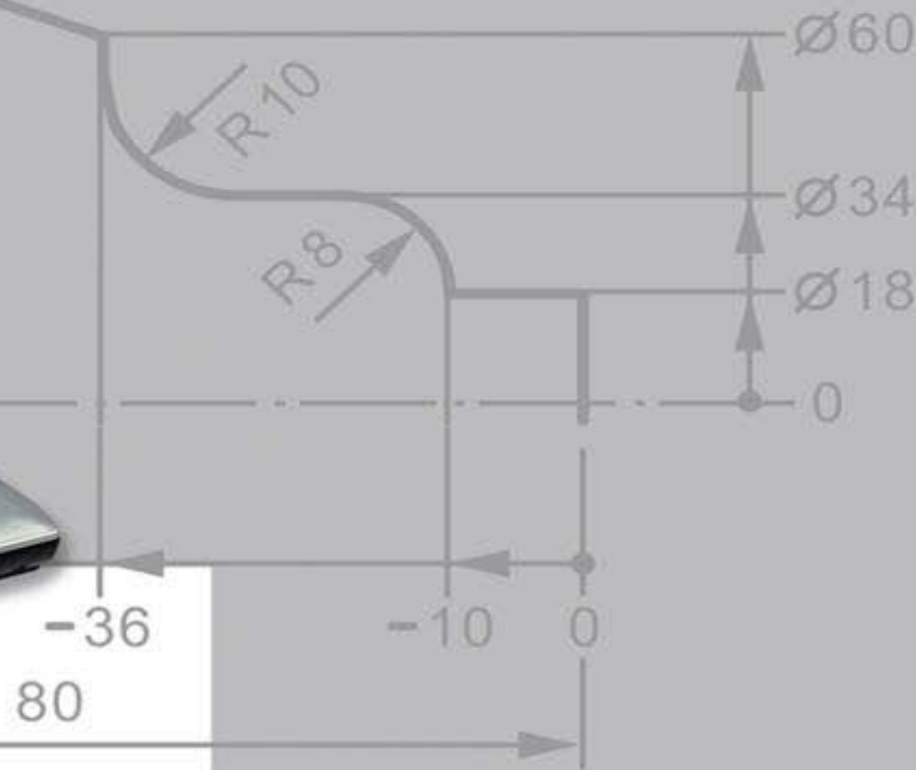
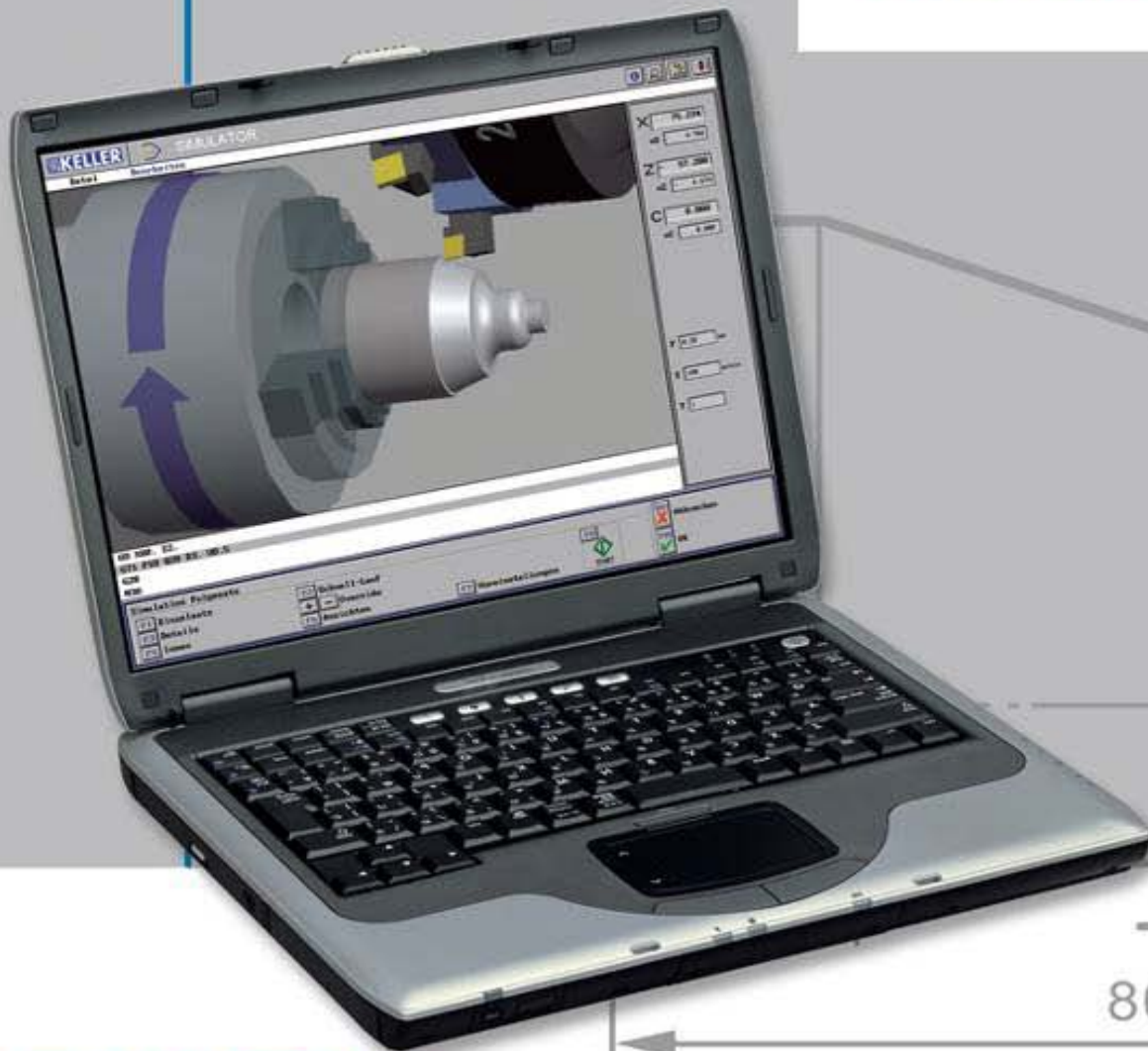


CNC Machining Critical Technologies

- **KELLER** = CNC didactic software / CAM
- **Renishaw** = Probing / measurement technology
- **Sandvik Coromant / URMA** = Cutting tools
- **ESPRIT / MasterCAM** = comprehensive CAM software
- **Hainbuch / Schunk / Chick** = Workholding technologies
- **Blaser** = Coolant technology
- **Air Turbine Tools** = High speed spindles

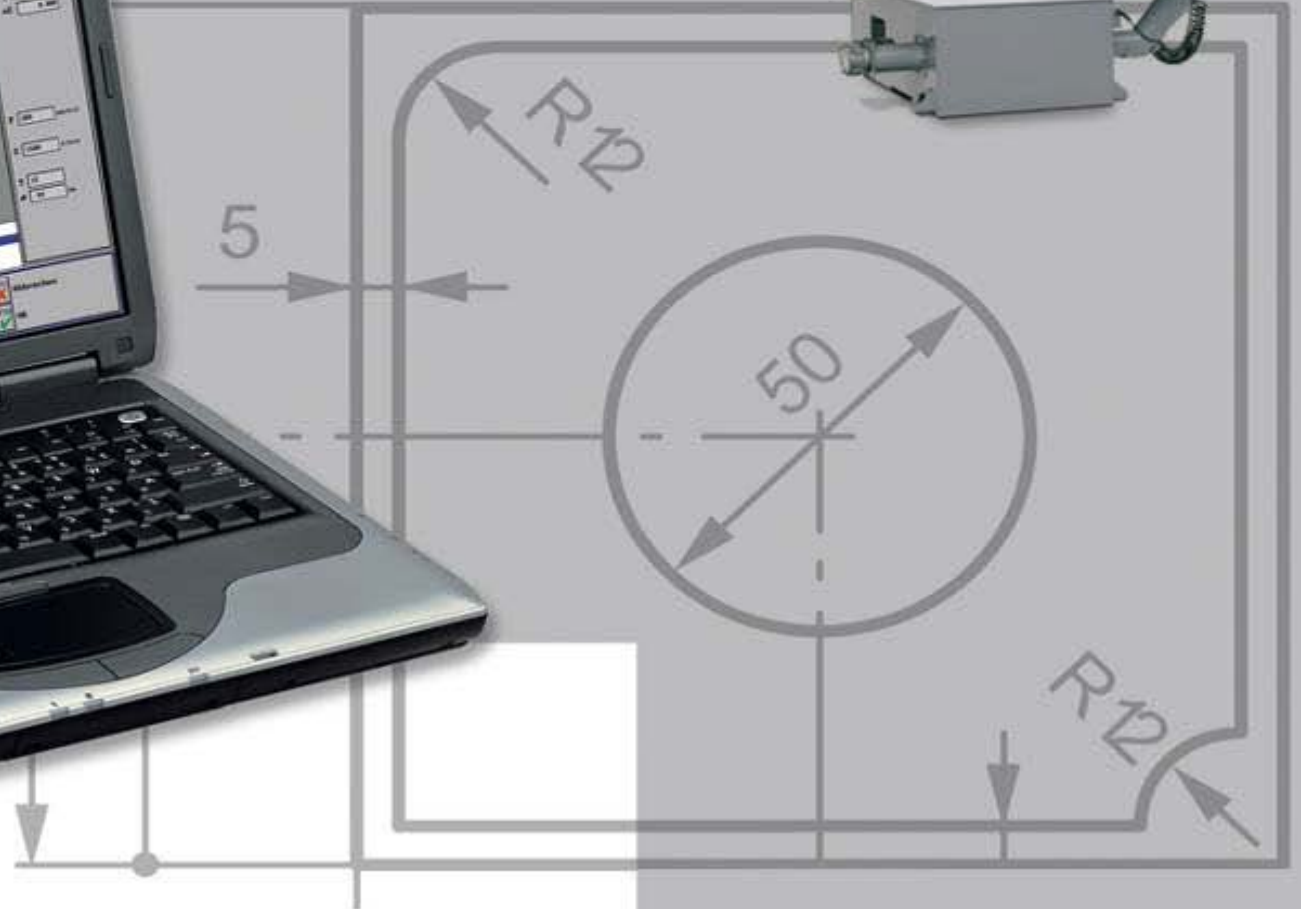
Turning

CNC *plus*
TRAINING



Milling

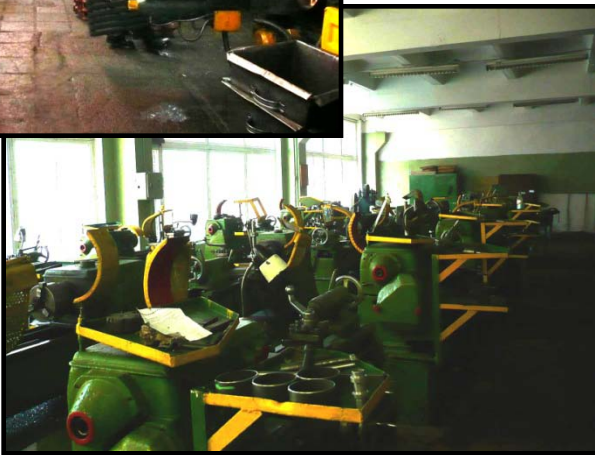
CNC *plus*
TRAINING

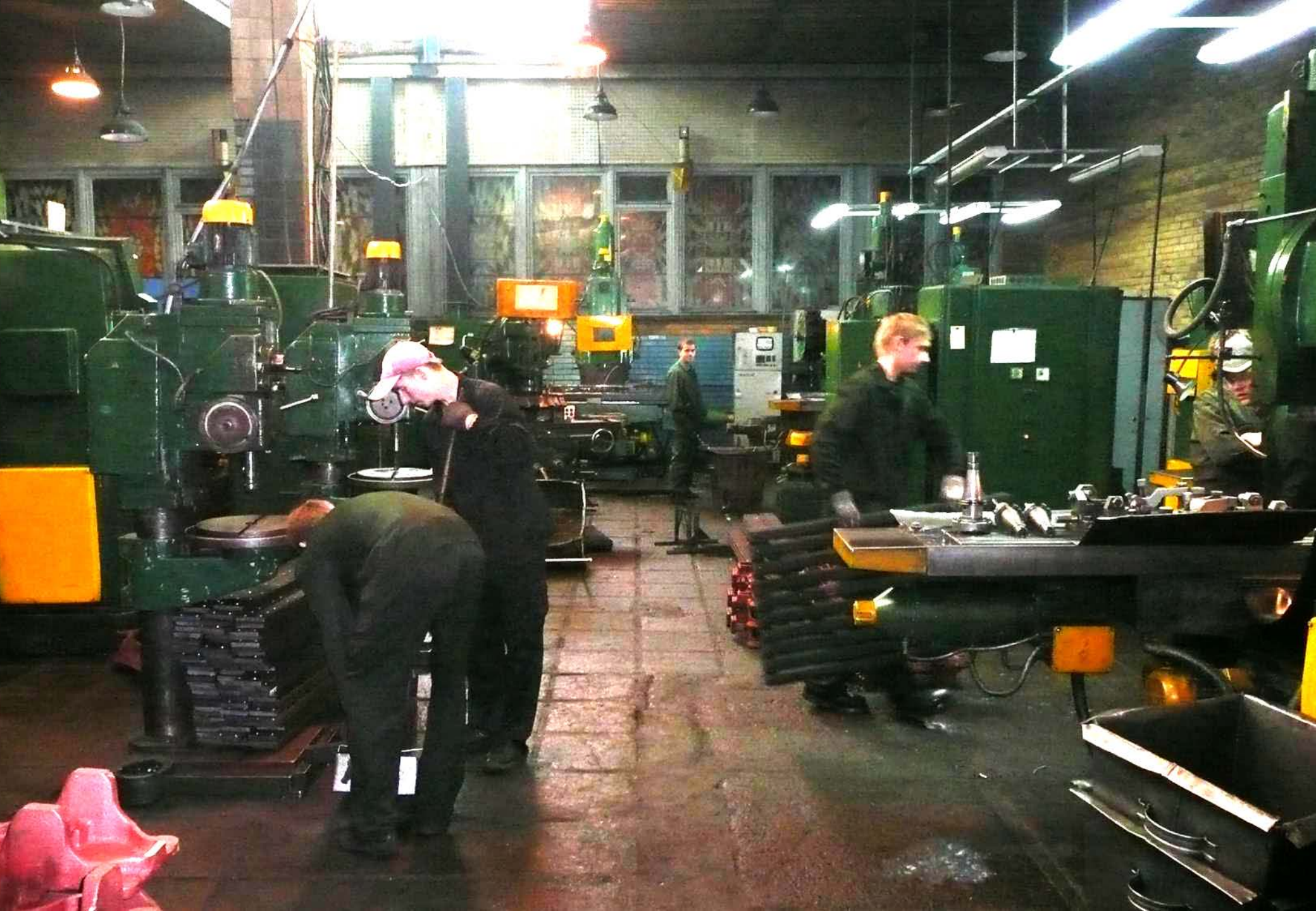


SERIOUS DISCONNECT

- Concerning State-of-Art Manufacturing -

PERCEPTION IS NOT REALITY













TEC

Haas Technical Education Center





Belgium



Belgium



Belgium



Portugal



Portugal



Austria



Ukraine



Ukraine



Poland



Belarus



Belarus

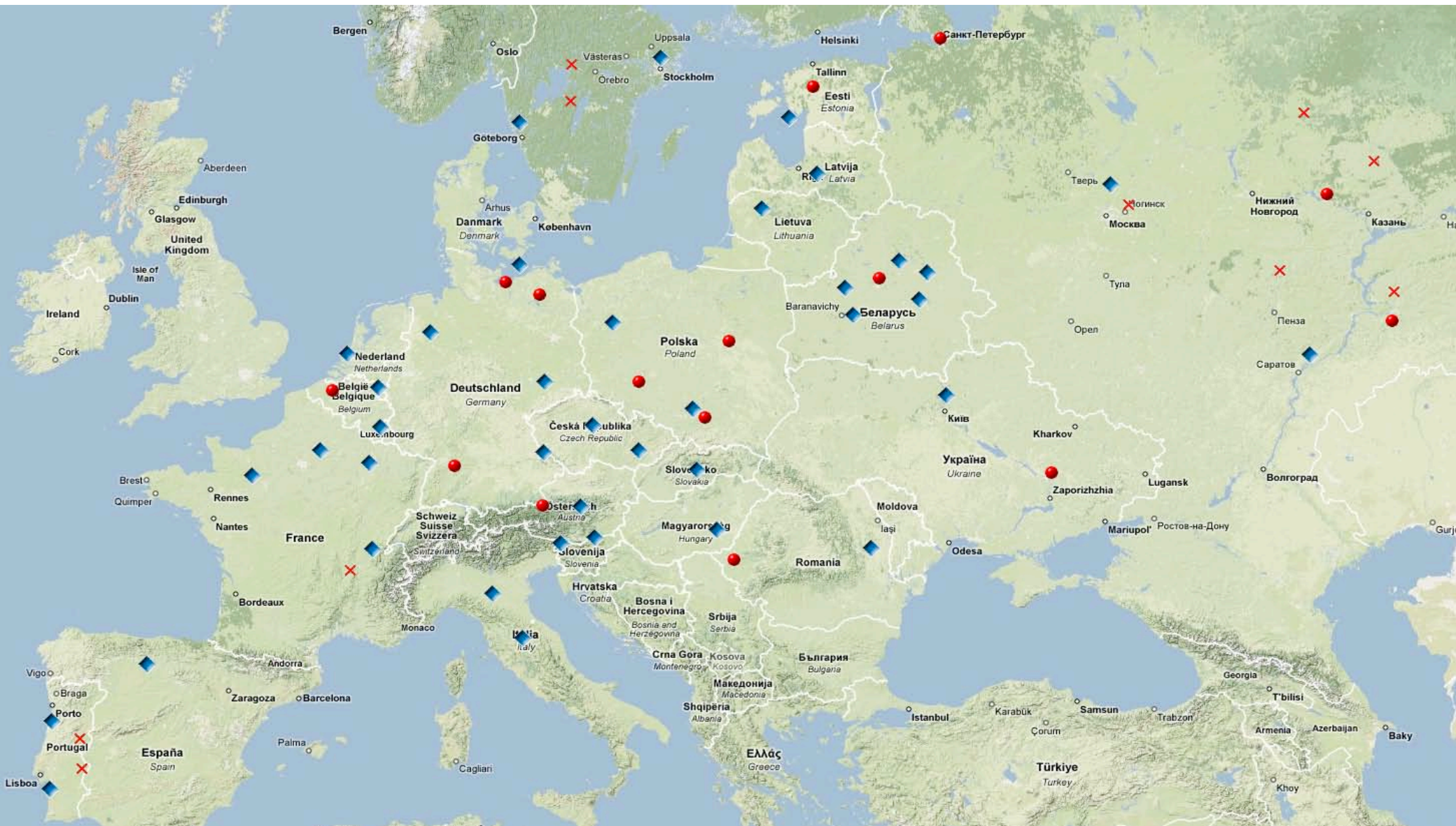
Haas Technical Education Center (HTEC)

ACCOMPLISHED

Year 2008:	Total	15 HTEC's	in 9 countries
Year 2009 YTD:	Total	9 HTEC's	in 3 countries

PROJECTED

Year 2009 Q3-Q4:	Total	16 HTEC's	in 9 countries
Total 2008-2009:	Total	40 HTEC's	in 12 countries
Total 2008-2015:	Total	200 HTEC's	in 28 countries



TOTAL European HTECs by end 2008: 15 (in 9 countries)

TOTAL European HTECs by end 2009: 40 (in 12 countries)

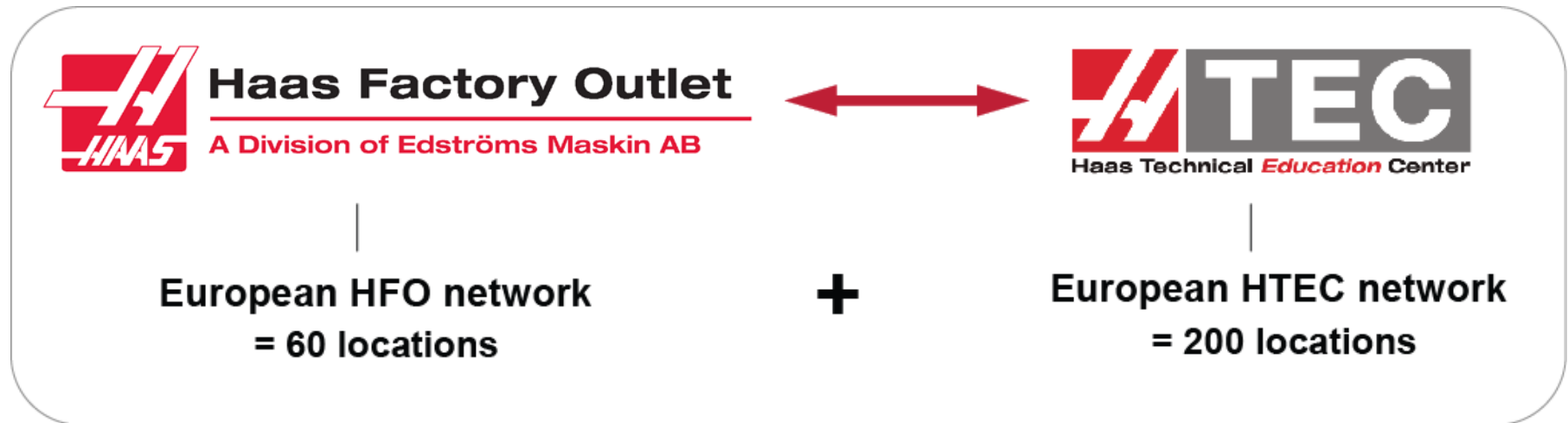
TOTAL European HTECs by end 2012: 200+ (in 28 countries)

● HTECs opened -- 15

✗ HTECs opening to May '09

◆ HTECs planned by end 2010

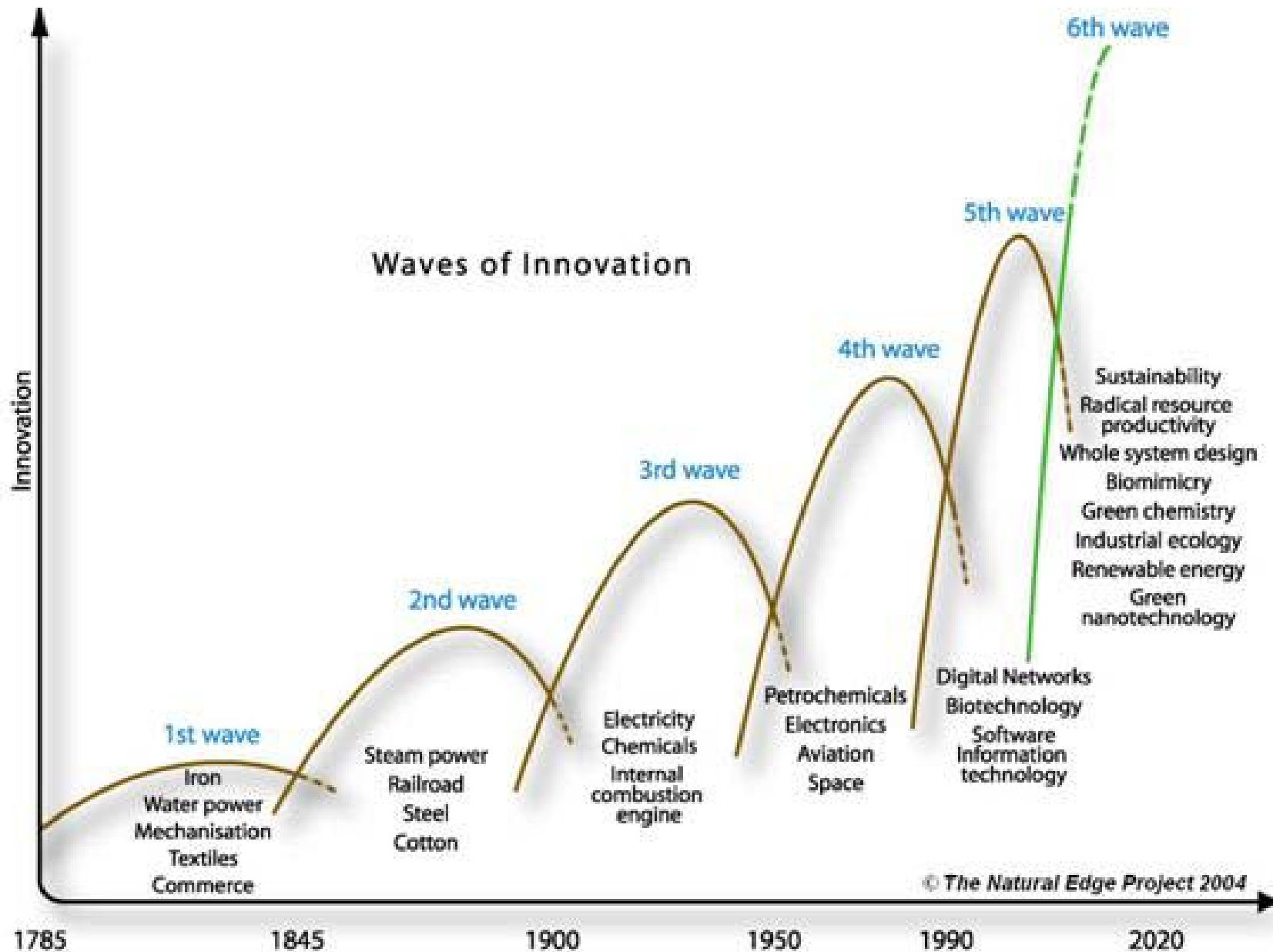
HTEC Concept



**** Haas, with the HFO network, is the **only** machine tool manufacturer having such a powerful technical education concept and capability to implement it on a global scale ****

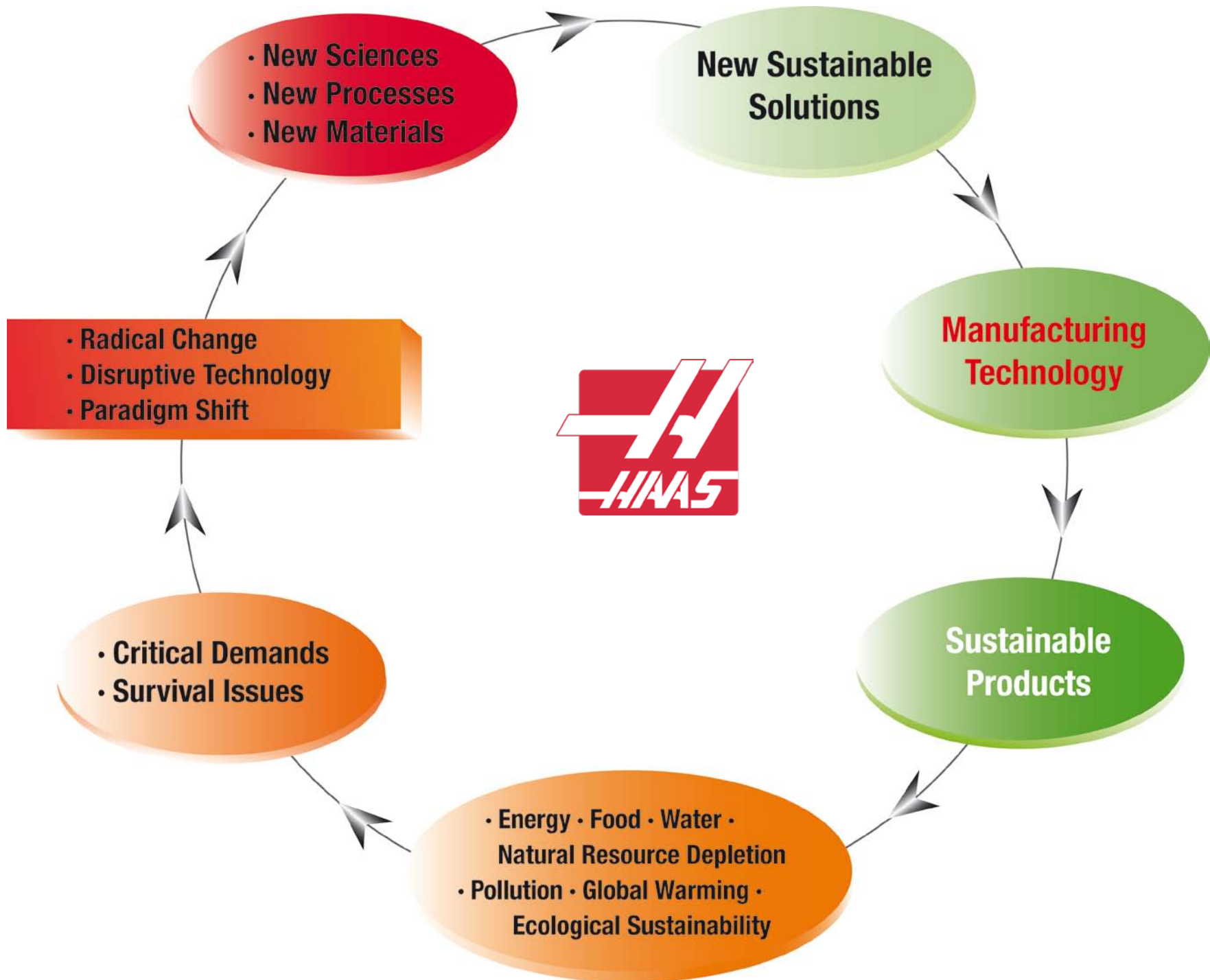
We have entered the “Third Industrial Revolution”

- “The **Third Industrial Revolution** is the **end-game** that takes the world out of the old carbon and uranium-based energies and into a non-polluting, sustainable future for the human race.” - J. Rifkin (2008)
- **The limits of growth and sustainable existence, using current technologies and energy paradigms, are in sight (2050 possible critical point).**



We have entered the “Third Industrial Revolution”

- **Science, technology & manufacturing** provide the only hope for mankind to attain a sustainable existence on earth.
- Countries that address their manufacturing industries most effectively will enjoy growth, the highest standards of living and become the **most successful economies**.



- RADICAL IDEAS
- NEW SCIENCES
- RAPID INVENTION
- RAPID DEVELOPMENT
- DISRUPTIVE TECHNOLOGIES

REALIZATION



ALL HUMAN MATERIAL NEEDS

- ENERGY
- FOOD
- WATER
- INFRASTRUCTURE
- TRANSPORTATION
- CONSUMER PRODUCTS
- SUSTAINABLE ENVIRONMENT

KEY
RESOURCE
CRITICAL LINK
FOR SUSTAINABLE
LIFE ON OUR PLANET

The Future of CNC Manufacturing

- **Manufacturing** is the key industry that enables development of the **sustainable technologies that can protect mankind from environmental catastrophes.**
- **CNC machining** is a fundamental critical technology, required in all manufacturing industries.
- **Young people** need to be aware of the career potentials in manufacturing.
- When young people realize how they can contribute to the world around them as manufacturing technologists, many will rise to the challenge.

The Future of CNC Manufacturing





Thank You