



THE HUMAN DRIVE OF THE FUTURE SHOE INDUSTRY



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Protection

Facilitation

Aesthetics



3500 BC

Human needs,
invention
and knowledge

Today



Workers

Sports

Fashion

Protection

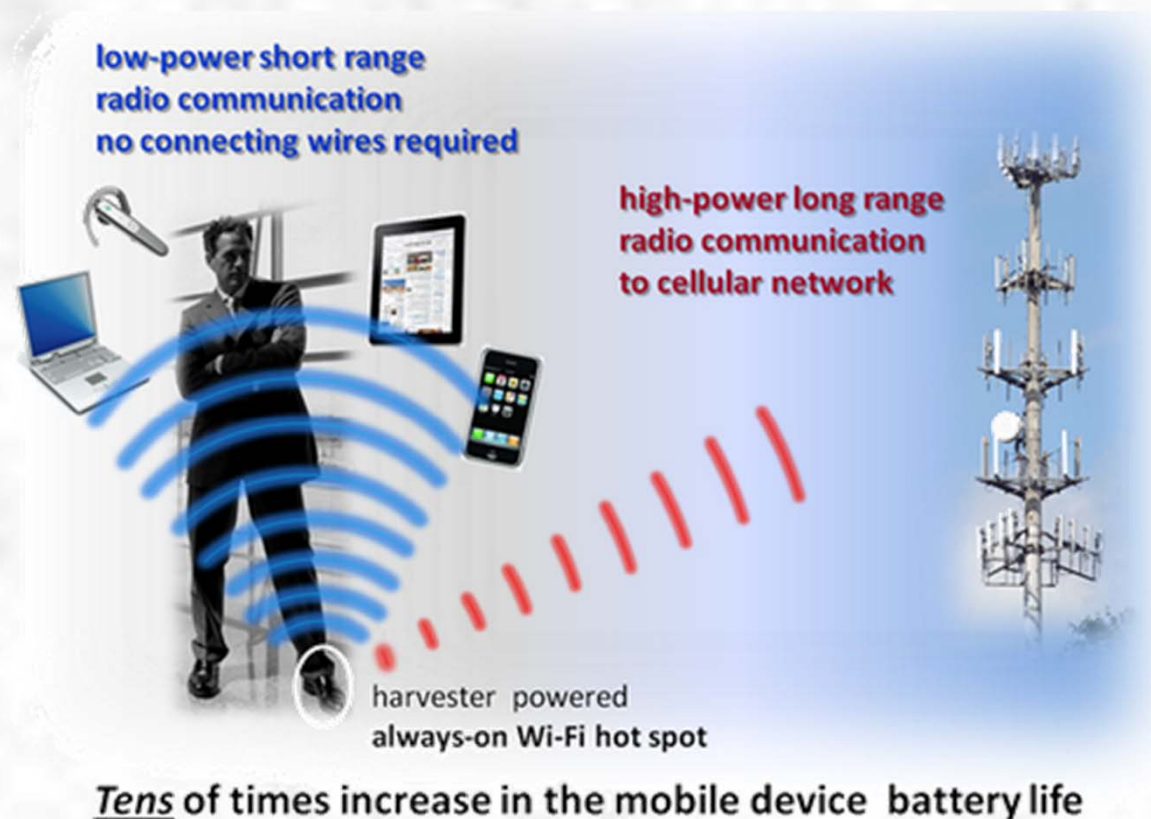
Facilitation

Aesthetics

FUTUR FOOTWEAR



Energy generating footwear



shoe technology development



Manual



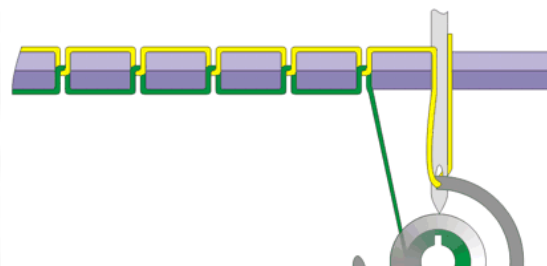
Mechanized



Automated



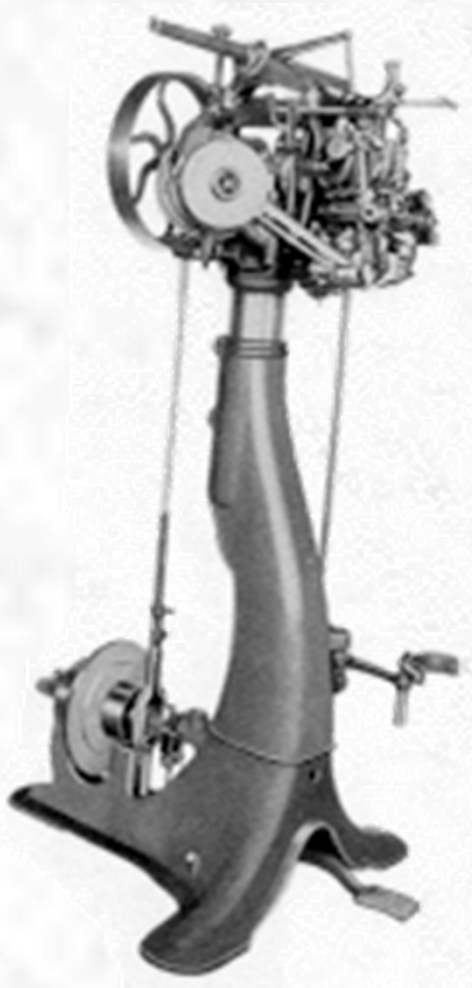
Sewing machine „development”



Shoe lasting



Until 1950



1940-1990

Smart materials

one or more properties that can be significantly changed in a controlled fashion by external stimuli/conditions.

Type/features	Footwear
Conductors conduct substance or flux differently depending on	Comfort
Piezoelectrics produce a voltage when stress is applied or a sample will produce stress with the sample.	Functional, orthopedic
Thermoresponsive are thermoresponsive which as deformation is covered through temperature changes.	Sports, comfort, orthopedic
pH responsive swell/collapse when the pH of the surrounding	Workers (protective)
Thermoresponsive materials undergo change in response to temperature.	Winter
Chromic materials are commonly used materials which change color as a result of changing acidity.	Fashion, dress
Chromic systems change color in response to optical changes.	Fashion, dress
Rheological fluid is a liquid which changes its viscosity in response	???

TO BE(come) COMPETITIVE ON THE [GLOBAL] MARKET

cheap product
lower(er) price

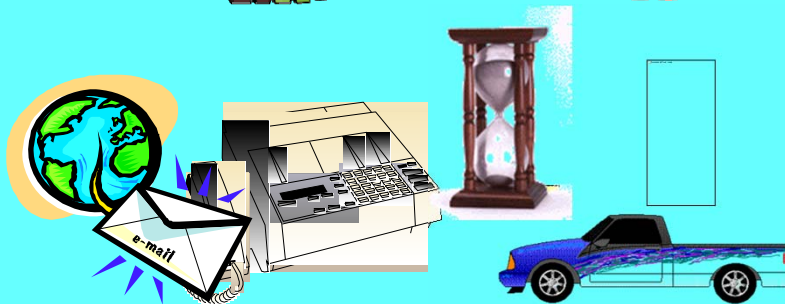


innovative product

monopoly → extra profit

good service

conformance to specification,
consistent and timely delivery, quick
response to reorders



aggressive promotion

old product is still necessary



Development trends

Products and services

- *Specialization*, product and market focus

Outsourcing and **logistics** **concentration**

Use of **information technology**

- CAD/CAM/CIM, virtual reality

- Real-time/on-line production management systems

Application of **smart/intelligent materials**

Application of **nanotechnology**

Integration and **automation** of operations (e.g. 3D printing)

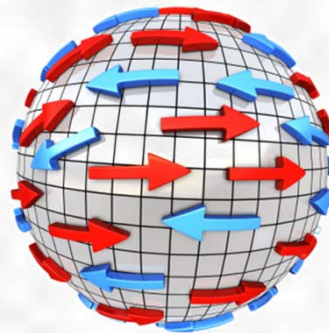
Social aspects

- Pollution control (waste management)

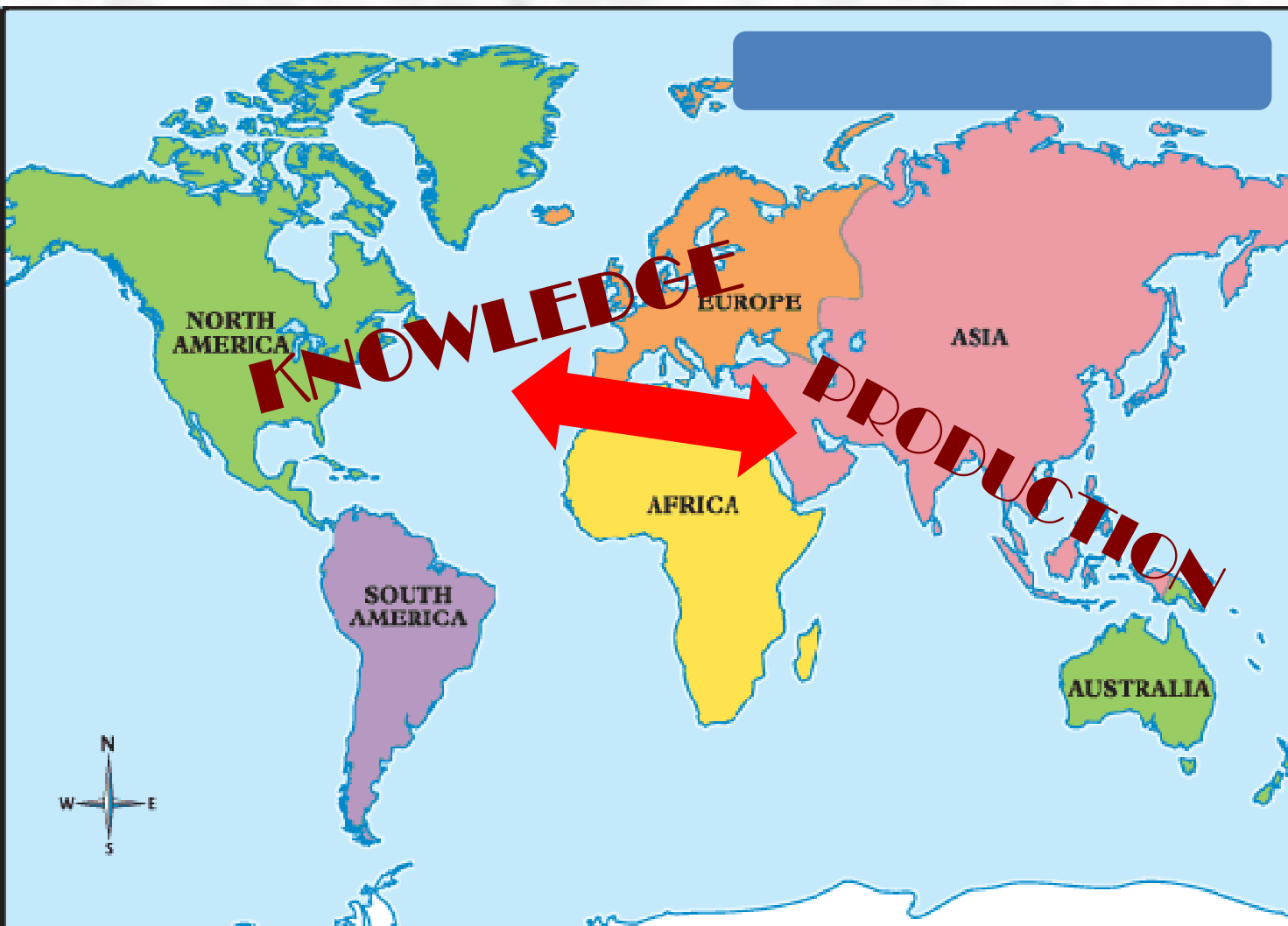
- Occupational safety and health (OSH)



GLOBALIZATION



KNOW-HOW ↔ PRACTICE



PROBLEMS OF PRESENT TRAINING SYSTEMS

Geographic unbalance: Europe ↔ Asia

Requirements in knowledge and skills: teaching full professions.

Objectives/levels: traditional 3 steps

- apprenticeship → operator,
- college → technician,
- higher education → engineer.

Durations: years/months are unaffordable.

Methodology: imitation, trial and error.

Communication: bad perception/publicity.



The FUTURE of PROFESSIONAL EDUCATION & TRAINING



Modularity



Self/Distant

e-Learning



Publicity

