WORKING ENVIRONMENT CHALLENGES OF THE FUTURE

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NRCWE, Denmark

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The changing workforce .......

Source: G. Pellizza da Volpedo, The Fourth State, 1901
The changing workforce .......... 

Source: Mario Ceroli, The Fifth State, 1984
Facts on Safety and Health at Work

Each year about 2.3 million men and women die from work-related accidents and diseases including close to 360,000 fatal accidents and an estimated 1.95 million fatal workrelated diseases.

Hazardous substances cause an estimated 651,000 deaths, mostly in the developing world.

In economic terms, roughly 4% of the annual global GDP, or US$1.25 trillion, is siphoned off by direct and indirect costs of occupational accidents and diseases such as lost working time, workers’ compensation and medical expenses.

In the year 2000, the costs of occupational accidents in EU15 was 55 billion euro a year.

It does not cover costs of work-related diseases that cause 1.6 to 2.2 times more days of temporary incapacity than accidents.

Source: FACTS ON safety and health at work, ILO, 2009; Decent work, Safe work, ILO, 2005
1700
First organic treaty of Occupational Medicine

End ‘800
First accident insurance regulations
First associations and movements for the protection of workers.

1906 – ICOH
1919 – ILO
1948 – WHO
1965 – IARC
1970 – OSH Act USA
1975 – Dublin Agency
1978 – First directives UE OSH
1995 – Institution WTO
1995 – European Agency - Bilbao

2007 – Workers Health Declaration

Changing World of Work and Health and Safety Politics
Human Resources in OSH in Italy

- Labour safety inspectors: 5,300
- Local Health Units: 1,500
- INAIL employees: 12,000
- ISPESL employees: 1,200
- Occupational health Physicians: 7,500
- Safety representatives of employers: 600,000
- Enterprise safety managers: 500,000
- Occupational hygienist: 2,100
- ENFORCEMENT
- RESEARCH
- PARTNERSHIP
- IMPLEMENTATION
- COMPENSATION
OSH in Europe

- Stabilization Regulatory Framework
- Changing World of Work
- Technological Innovation
- OSH Critical Mass and Infrastructure
- Research
- OSH Crisis
"Lost In Translation"
Insufficient turnover of OSH professionals

Downsizing educational academic programs

Downsizing of research infrastructure

Limited access to the opportunities in innovative techniques (diagnostic in occupational medicine)

Limited resources and specific OSH topics in research fund (EU Framework Programs)

Limited perception of changing research priorities

Limited resources and specific OSH topics in research fund (EU Framework Programs)
Challenges and Opportunities for Planning OSH Research Priorities - MAIN DOMAINS

1. Workforce changes and gaps
2. Innovation
3. Work Life Balance
4. Economic Dimension
Workforce

- Aging
- Working time
- Migration
- Gender
- Restructuring
Ageing of workforce in the EU

Absolute size in millions of young and old age groups for EU25, 1995-2030

Source: Eurostat; onwards: 2004 Demographic Projections (Baseline scenario)
24 hours Working Society
Hours Worked per Week (% of workforce)

Source: Dept. of Labor Quality of Employment Survey NIOSH Quality of Work Life Survey
192 million people living outside their place of birth, which is about 3% of the world's population.

28 million migrants; 5.6 coming from European population (Eurostat, 2007).

80% of population’s increase in 1994-2006 is due to migration.

32% of migrants do not come from European population, 22% from Africa, 16% from Asia, 15% from America.

- 3 million (ISTAT, 2007)
- 90% of increase in migrants in the five years 2002-2006.
- 49.6% from Europe, 22.3% Africa, 18% Asia, 9.7% America, 0.4% Oceania.
The ERM recorded a total of 721 cases of restructuring between 1/1/2009 – 31/3/2009. These cases involved 219,390 announced job losses and 89,625 announced job gains.

**Top five cases of announced job reduction (national)**

<table>
<thead>
<tr>
<th>Company</th>
<th>Jobs</th>
<th>Location</th>
<th>Restructuring type</th>
<th>Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>PKP Cargo</td>
<td>9,000</td>
<td>Poland</td>
<td>Internal restructuring</td>
<td>Land transport</td>
</tr>
<tr>
<td>Police nationale</td>
<td>4,800</td>
<td>France</td>
<td>Internal restructuring</td>
<td>Public administration</td>
</tr>
<tr>
<td>Metro Group</td>
<td>4,000</td>
<td>Germany</td>
<td>Internal restructuring</td>
<td>Retail</td>
</tr>
<tr>
<td>Alitalia</td>
<td>3,650</td>
<td>Italy</td>
<td>Merger/Acquisition</td>
<td>Air transport</td>
</tr>
<tr>
<td>Petrom</td>
<td>3,000</td>
<td>Romania</td>
<td>Internal restructuring</td>
<td>Manufacture: non-metallic mineral products</td>
</tr>
</tbody>
</table>

**Top five cases of announced job reduction (international)**

<table>
<thead>
<tr>
<th>Company</th>
<th>Jobs</th>
<th>Location</th>
<th>Restructuring type</th>
<th>Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Motors</td>
<td>47,000</td>
<td>World</td>
<td>Internal restructuring</td>
<td>Manufacture: auto</td>
</tr>
<tr>
<td>Caterpillar</td>
<td>20,000</td>
<td>World</td>
<td>Internal restructuring</td>
<td>Manufacture: machinery</td>
</tr>
<tr>
<td>Nissan</td>
<td>20,000</td>
<td>World</td>
<td>Internal restructuring</td>
<td>Manufacture: auto</td>
</tr>
<tr>
<td>Anglo American</td>
<td>19,000</td>
<td>World</td>
<td>Internal restructuring</td>
<td>Mining of metal ores</td>
</tr>
<tr>
<td>United Technologies Corp.</td>
<td>18,000</td>
<td>World</td>
<td>Internal restructuring</td>
<td>Manufacture: machinery</td>
</tr>
</tbody>
</table>

Source: ERM, 1 Jan – 31 March 2009
Challenges

- The work-ability preservation of workers affected by chronic-degenerative diseases in view of the ageing workforce.
- Shiftwork involving night work had been classified as a “probable carcinogen” by the IARC.
- Impact of company restructuring on occupational health.
- The evaluation of working life overall wellbeing also in a gender perspective.
Innovations

Challenges & Opportunities
Innovations as Challenges

**Nanotechnology**
Global forecast of products sold incorporating nanotechnology

<table>
<thead>
<tr>
<th>Year</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>Selective deployments proliferate</td>
</tr>
<tr>
<td>2005-2009</td>
<td>Commercial breakthroughs open market</td>
</tr>
<tr>
<td>2010-2014</td>
<td>Nanotechnology becomes commonplace</td>
</tr>
</tbody>
</table>

Source: Lux Research Report, 2004


3. SELIKOFF IJ et al. Asbestos exposure and neoplasia. JAMA 1964;188:22-26

4. First ban (with exceptions) on all types of asbestos (updated in 1996) in Iceland, 1983

5. 42 National Asbestos Ban worldwide, 2006

All mesotheliomas

Pleural mesothelioma

Peritoneal mesothelioma

Asbestosis

Source: Ro-Ting Lin et al., Lancet 2007
Lesson learned from mobile phones

1999

IARC launched Multicentric Case-Control Study (INTERPHONE) including 13 countries

Source: Wireless Intelligence, September 2005
Innovations as an opportunity

New biological matrices for biomonitoring:
- Exhaled breath condensate
- Induced sputum
- Saliva

New tools:
- DNA determination in plasma
- DNA microarrays
- Proteomic analysis of plasma
- Molecular fingerprint of exposure
- Cyogenetic analysis (FISH, micronuclei assay, spectral karyotyping)
Work life balance
Social determinants

- Environment
- Health system
- Genetic heritage
- Lifestyle
- Health

Social determinants
Work Related Stress affects more than 40 million individuals across the European Union…

…costing an estimated €20bn a year in lost time and health bills

It is the second most commonly reported cause of occupational disease and illness by workers

Source: European Foundation, 1996
Commuting Time

Commuting time is a measure of how long people spend travelling to work, by whatever means. It could be by foot, bus, car, boat, train, bicycle or other means. The world average commuting time is 40 minutes, one-way. This is the average for people that work.

In Thailand, with the longest commuting times in the world, a total of 37 million hours is spent travelling to work everyday. If this number is doubled the total time commuting each day in Thailand can be calculated. The average working person living in Thailand spends 2 hours everyday travelling to and from work.

The shortest journeys to work are in Malawi, taking just 2 minutes.

Territory size shows the proportion of total time spent travelling to work worldwide that occurs there.

“Currently, the average travel speed in central Bangkok during peak hours is just 7 mph for this lively city of 7.5 million.”

Bridges Magazine, 2005
Economic dimension
Absenteeism & Presenteeism

Absenteeism is the term generally used to refer to unscheduled employee absences from the workplace. If such absences become excessive, they can have a seriously adverse impact on a business's operations and its profitability. There are some hidden cost factors associated with absenteeism:

- Lost productivity of the absent employee;
- Overtime for other employees to fill in;
- Decreased overall productivity of those employees;
- Any temporary help costs incurred;
- Possible loss of business or dissatisfied customers;
- Problems with employee morale.

In contrast to absenteeism, presenteeism discusses the problems faced when employees come to work in spite of illness, which can have similar negative repercussions on business performance. Presenteeism can have catastrophic effects on a company's output:

- hidden long-term costs;
- wider social problems beyond the enterprise.
- an employee who arrives at work despite illness may only operate at a fraction of his normal capacity despite requiring the same expenditure in wages, social contributions and taxes as an employee operating at 100%;
- they may also be more prone to mistakes;
- they may transmit the illness to fellow employees, causing a larger fallout in work efficiency.
Conclusions

CULTURE OF PREVENTION

FORECAST

INNOVATION

COMMUNICATING TO STAKEHOLDERS AND DELIVERY TO SOCIETY

RAMAZZINI APPROACH