THE EFFECT OF GLOBAL MEGATRENDS
ON OCCUPATIONAL HEALTH AND SAFETY

IOE GOSH MEETING
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EXECUTIVE SUMMARY

• The global macro-economic environment is characterised by megatrends
• These megatrends will impact on trends in occupational health and safety (OHS)
• Megatrends will also have an impact on the nature and characteristics of the future organisation
• Organisations and workplaces of the future will differ substantially from existing organisations and workplaces
• The nature of “occupations” or work (what we do and how we do it) will change and hence will have an impact on OSH requirements, training as well as the culture of organisations and the behaviour of individuals
EXECUTIVE SUMMARY

• A variety of research topics have been identified that provide an indication of OHS challenges that companies and service providers need to address

• Companies and OHS service providers need to understand megatrends and the resultant OHS trends

• The services (consulting, training and auditing) that NOSA provide is aimed at assisting companies to deal with current and future challenges in terms of OHS and risk management

• NOSA is a global service provider that can assist companies in terms of auditing, consulting and training to address their current and future OHS needs.
MEGATRENDS

• Urbanization: mega cities, mega regions, mega corridors, smart cities
• E-mobility
• Social trends: geo socialisation, generation Y and reverse brain drain
• Virtual world: fluid interfaces and haptic technology
• Innovating to Zero: zero emission technologies, zero harm
• Robotics and autonomous systems
• Health, wellness and well-being
MEGATRENDS CONTINUED

• SPACE JAM: congested satellite orbits
• World War 3: cyber warfare
• RoboSlaves
• Emerging Transportation Corridors
• Complexity science and swarm theory

MEGATRENDS CONTINUED

Automotive HWW Technologies: Key Features List, Global, 2014–2025

- Outside ambient air quality monitoring
- Pollen/allergen level monitoring
- Drunk-driving prevention
- Heart rate monitoring
- Blood pressure monitoring
- Breathing rate monitoring
- Glucose level monitoring
- Comfort/ease of access/egress
- In-car ambient temperature monitoring
- In-car ambient lighting monitor
- Driver workload estimation

Source: Frost & Sullivan
MEGATRENDS CONTINUED

Global Mega Trends

- Urbanization – City as a Customer
- Bricks and Clicks
- Future Infrastructure Development
- Smart is the New Green
- Innovating to Zero
- Health, Wellness and Well Being
- Social Trends: Gen Y, Middle Bulge, Sheconomy, Geosocialization
- Future of Energy
- Future of Mobility
- Connectivity and Convergence
- Economy: Beyond BRIC: The Next Game Changers
- New Business Models: Value for Many

Source: Frost & Sullivan analysis.
MEGATRENDS

- Big data
- Analytics
- Automated robots
- Simulation
- Horizontal and vertical integration
- Industry Internet of Things
- The cloud
- Additive manufacturing
It is not unusual to see a single employee working in a remote location;

Anytime, anywhere and on any device;

Employees want to be there instead of assuming they need to be there - rise of individualism;

New behaviours entering the workforce;

Ideas and innovation comes from anywhere;

Future organisations runs in the cloud;

Increasingly women will become the decision makers and consumers;

Communication and collaboration flows up, down, and side to side;
11 Values of employees need to align with that of the organisation and shared through telling the stories of the organisation;

12 Use of collaborative technologies to learn from colleagues anywhere and anytime;

13 People work for things such as employee health and wellness, community involvement, sustainability and making a positive impact on the world;

14 The organisation (and the functions with the organisation) needs to adapt to the future employee and future manager.

TRENDS IN OSE

Spinoffs of megatrends

• Pervasive technologies and increased levels of mechanisation and automation
• Rise of big data and internet of things/tactile internet
• Predictive analytics to prescriptive analytics
• Health, safety and environment interrelating with productivity
• Increased importance of occupational and psychosocial wellness
• Experiential workplaces and training become increasingly virtual and visual
• Wearables as a new form of personal protective equipment
• Auditing moving beyond commonalities to extremities
KNOWN TRENDS IN OSH

- Population aging
- Migration
- Stress at work
- Workplace violence and harassment
- Health of women at work
- New technologies in green jobs
- Privatisation of health and safety provision
- Women exciting the workplace mid-career
- Climate change
- Migration of refugees into Europe
- Sustainable energy
- Nanomaterials
- Globally Harmonised System of Classification

European Agency for Safety and Health at Work (2014)
CHALLENGES IN OSH

1 Impact of information and communication technology

2 Impact of globalisation of trade on managing work

3 Impact of financial crisis on the nature of work

4 Impact of changing location of work

5 Trends in human resource management practices affecting worker well-being

Source: European Agency for Safety and Health at Work (2014)
1 Impact of information and communication technology on work and occupational health and safety

Emergence of new technologies which may affect how people do their job e.g. wearables
Growth of existing technologies e.g. mobile IT devices
How technology enables organisations to structure themselves and to organise work

- Automation and the greater use of robotics
- Too much trust in the infallibility of technology
- Ethical concerns regarding the monitoring of employees
- Use of customised, individualised HSE prevention software
- Work becomes highly individualised and socially isolated
- Mobile handheld devices lead to disruption of work life balance
Impact of globalisation of trade on managing work and occupational health and safety

Possibilities for trade across geopolitical boundaries and product markets extend beyond country borders
Firms are selective in deciding where to locate their workplaces
Firms are more likely to use migrant workers in high and low skilled work
Decline in manufacturing and replaced with growing segment of a knowledge economy

- Exacerbates competitive pressure and may resultant in reduced spending on HSE
- Relocation to countries with lower labour cost and through lowering standards including OHS
- Parent company not subject to national OSE regulations
- Supplier selected on price and not on compliance
- Working time affected by increasingly globalised operations with sophisticated ICT
2 Impact of globalisation of trade on managing work and occupational health and safety

EU-OSHA (2015) states: “The effects of companies permeating traditional borders is to make economies of different countries more connected with each other, more interdependent and a network of ownership and influence that has the potential to shape decisions about how HSE is managed.”
3 Impact of financial crisis on the nature of work and occupational health and safety

Changes to levels of employment and employment contracts including working time
Changes in the types of firms growing/declining
Changes in the nature of work and structure within existing firms e.g. resulting from downsizing

- Insecure and flexible contracts with unpredictable hours and volumes of work
- Affected development of HSE policies and management systems e.g. level of resourcing for HSE has decreased
- Lower investment in inspections and decreased focus on risk management
- Outsourcing services, SME’s, self-employed companies attach lower importance to HSE and have less knowledge of HSE risks and challenges
- Downsizing leads to psychosocial health risks on various levels
CHALLENGES IN OSH

4 Impact of changing location of work on occupational health and safety

The type of environment and location where a worker performs their job role.

Increase in number of locations where people work
Exposed to a diverse range of hazards and difficult to trace any source of harm
Effect of ICT on the location of workers and increased globalisation affected less travel but altered working time patterns
Increased needs and demands of commuting to work

• Contradictory trends in the growth of office-based jobs in service sector versus the increased flexibility of “working on the go” (difficult to assess HSE risks)
• Difficult to monitor, meet or support people’s basic physiological and psychological needs
5 Trends in human resource management practices affecting worker well-being

HRM is the function through which the organisation can gain increased organisational performance and competitive advantage via the selection and deployment of workers. Relationship between workers and employers are becoming increasingly individualised.

- Increasing prevalence and scope of psychosocial hazards
- Target recruitment and selection of safety conscious employees (HSE professionals within companies partnering with Human Resources Departments) to screen candidates for positive health and safety values
- Increased workforce diversity (age, cultural and nationality)
NOSA PRODUCTS

1 SAMTRAC

2 Advanced SAMTRAC

3 Psychosocial wellness

4 Health and safety for mechanised mines

5 Fatigue risk management
- SAMTRAC International is a product of NOSA ([www.nosaworld.com](http://www.nosaworld.com))
- NOSA is a wholly owned subsidiary of MICROmega Holdings Limited, a company listed on the Johannesburg Stock Exchange
- NOSA is a global provider of HSE services with operations in China, South America, New Zealand, and across Africa
- SAMTRAC was developed by NOSA in the 1960's and over the years has been enhanced to incorporate critical aspects of HSE management
- The course has been the cornerstone to the development of the HSE profession in a number of countries
- Converted from a classroom based course to an interactive e-learning platform in 2012 and 2013
- Over 4,000 students trained annually
SAMTRAC International provides the learner with both foundational and fundamental knowledge critical to occupational health, safety and environmental (HSE) management. SAMTRAC International covers the integration of HSE management and students are taken through the practical process of implementing and managing an HSE management system using the PDCA cycle.
ADVANCED SAMTRAC

Advanced SAMTRAC equips the learner to use the knowledge gained from having attended SAMTRAC or an equivalent health and safety management course to implement a fully operational Integrated Management System (IMS) with the required aspects of health and safety, environmental and quality.

The course consists the following seven modules:

• Module One: The Integrated Management System (“IMS”)
• Module Two: Applied Operational Process Mapping for an IMS
• Module Three: Improve the Effectiveness and Efficiency of an IMS
• Module Four: Implementing the IMS as an Operational Plan
• Module Five: HSE Ethics in an IMS
• Module Six: Workplace Risk Assessment and Control in an Effective IMS
• Module Seven: Individual assignment – Design an IMS for your company
PSYCHOSOCIAL WELLNESS

To increase awareness of positive health behaviours;
To motivate employees to voluntarily adopt healthier behaviours; and
To provide opportunities and a supportive environment to foster positive lifestyle changes through understanding of a workplace wellness program with the focus on Psychosocial Health Aspects.

1 Day Workshop for general workforce; and 3 Day Workshop for Managerial levels (HR/supervisory staff/ Peer Educators/wellness coordinators)

Modules:
• Overview of Wellness in the workplace
• Overview of Psychosocial Wellness
• Psychosocial Disorders (general)
• Psychosocial Health in the Work Environment
• Management of Psychosocial Risks
Mechanisation of mining activities introduces new risks into the working place that need to be identified and controlled, based on sound risk management principles.

The aim of this training course is to equip the OHS practitioner with the necessary skills, understanding and management process needed to eliminate or reduce the inherent risk associated with mechanised mining equipment, thus eliminating or reducing the occurrence of:

- fatalities
- injuries
- damage, and
- near miss or close call incidents
HEALTH & SAFETY FOR MECHANISED MINES

Modules covered in the course:

• Module 1: Foundations of OSH for mechanised mines
• Module 2: Controlling mechanised mining hazards
• Module 3: Human or man-machine interface
• Module 4: Updating the OHS management plan

The course content are applicable to and can be customised to any mechanised or automated environment.
This invaluable and comprehensive Fatigue Risk Management Course contains specifically developed content that will equip OHS Practitioners with the knowledge, understanding and tools required to manage and thus mitigate the risks associated with human fatigue. Fatigue risk management is not only applicable to mine operations but to any industry that utilises a shift roster system.

Modules:
• Module 1: Why manage human fatigue
• Module 2: The Fatigue Risk Management System process
• Module 3: Making it work – risk control
• Module 4: Implementation
Thank you

Any questions?

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