"The impact of digitalisation on the world of work in the metal, engineering and technology-based industries, by European sector social partners"

An industriAll Europe & CEEMET joint position

Brussels, December 8th 2016 - Digitalisation of the metal, engineering and technology sector is a challenge for European industry – for both employers and employees – but its positive potential can become a reality if addressed and properly managed together. The discussion around digitalisation of industry tends to be product and process focused, but the discourse on emerging technologies should also be about work organization, human potential and the value it unlocks.

Digitalisation will change occupations and organisation of work in the MET industries. It will change how and where people work, individually and collectively. It will also lead to changes in business models and management. Digitalisation will prompt questions as to whether the legislation that today regulates working life is fit for the future.

The focus of this joint position is the impact of digitalisation on the world of work in the MET industries. This impact is an important area for social dialogue and an opportunity to shape the ongoing technological change, so as to maximize the benefit for our industry in terms of growth and jobs. The ability to successfully manage this change will be central to whether the MET industry can keep it's (cost and non-cost) competitiveness and capitalise on the digital transformation for the better.

This joint position is a starting point for discussion, and sets a preliminary vision of what the issues presenting themselves to the MET sector and to MET social partners may be. Its content will be further developed over time.

THE DIGITALISATION OF INDUSTRY IS A MAJOR TRANSFORMATION OF THE MET SECTOR, DESERVING DISCUSSION AT EUROPEAN LEVEL

The digitalisation of industry is a multi-faceted phenomenon. As a matter of preliminary analysis, the social partners of the MET sector have identified that it encompasses the following important aspects:

1) The inclusion of ever-increasing information processing capacity in industrial products (based on electronics and software);

2) The networking of all processes in the company (design, production, logistics, sales, maintenance), and between companies along the value chain, and the automation of tasks, including of

intellectual tasks (design, simulation & testing), with machine learning capacities based on big data being used more and more;

3) a transformation of work, which includes the technical possibility:

    a) to work remotely, at any time (although the areas of work that cannot be made more flexible must not be overlooked)

    b) to collect larger volumes of work- and worker-related data than before

    c) to engage in individualised contractual relationship between companies and workers.

Many agreements have already been already signed in European companies of the MET sector, and several discussions held at Member State level. However large disparities across Europe remain in the level of awareness of the phenomenon, and in the way it is managed at State, regional or company level.

The purpose of this document is to list the issues that they jointly consider as relevant and of interest, and on which they may wish to work in the next few years (2016+).

> *Social partners in the MET sector consider that the consequences of the digitalisation on the MET sector deserve being discussed jointly by social partners at European level.*

THE DIGITALISATION OF INDUSTRIAL PROCESSES IMPACTS THE VOLUME OF EMPLOYMENT AND ITS SKILLS CONTENT

Numerous academic studies have been attempting to anticipate the effects of digitalisation on employment volume. The results regarding the net effect of gains and losses are extremely varied. The only consensus among scholars seems to be: transformation is deep and fast. The net effects on employment volume of the potential productivity gains resulting from digitalisation, as well as the principles that should govern the distribution of these gains in society, remain points of discussion in the academic field, and between social partners.

The susceptibility of workplaces, companies and sectors to digitalisation is highly contrasted: some will be totally transformed, while others will remain essentially untouched. The digitalisation of products and processes, but also of work organisation, specifically changes the demands in workforce skills and competences. On the one hand, more digital skills are needed: programming, usage of abstract interfaces with digitally-enhanced machines, etc. are becoming more relevant at all levels. On the other hand, demands for skills other than digital also emerge, as happens with all technological development, e.g. understanding and creating business models for the digital world, advanced critical and analytical skills (to make sense of data generated from sensors and platforms), and cybersecurity skills, but also the ability to communicate, cooperate, take decisions, and take responsibility in dematerialised, remote and asynchronous working processes.

While some basic skills, such as literacy and numeracy will retain and even increase their relevance in a digitalised work environment, other components of existing skills sets can be made obsolete by digitalisation, threatening the employability of some workers and the competitiveness of some companies. This has often been the case with technological change in the metal, engineering and

technology industry. The effects are therefore not unknown but with digitalisation there is an increase in speed and scope.

Digitalisation renews the relevance of anticipation of change and of strategic skills planning: at company level or at sector level. Because of speed of development, avoiding turmoil requires foresight on bridging the chasm and ensuring timely provision and uptake of appropriate competences.

Technological developments are not isolated from other, broader societal developments. The impact of digitalisation on employment and skills has to be considered together with demographic development in Europe and in particular with the development in MET industry (specifically: the higher average age of workforce).

> *The main challenges in education and training can be summarised as:*
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> - *identifying skills*
> - *adapting skills & curricula*
> - *ensuring the link to training providers*
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> *None of these issues are revolutionary for the sector.*

THE DIGITAL TRANSFORMATION OF WORK IMPACTS THE EMPLOYMENT RELATIONSHIP

The technical possibility to work remotely, at any time, with mobile devices, challenges the unity of time and space for work, and the notions of "working time" and of "work place".

Monitoring by the contracting company of the work carried out is legitimate (to control the execution of the task, and for the sake of Occupational Health & Safety), but, considering the technical possibility to permanently collect large volumes of work- and worker-related data at short time intervals and at very low cost, some rights and limits could be further discussed between social partners.

The technical possibility to engage in individualised contracts at very low transaction costs creates potential challenges to, and opportunities for, collective bargaining.

Both employers and trade unions need to reflect on their roles and whether these may need to evolve.

Existing labour laws may need to adapt to these new challenges, with the overall prospect of promoting dynamic and inclusive labour relations. It is however also the task of social partners to flexibly make use of their room for manoeuvre to uphold this autonomy.

> *In a process full of challenges and opportunities, respect for social partner autonomy is crucial.*

DIGITAL TECHNOLOGIES TRANSFORM THE SKILLS REQUIREMENTS AND THE MEANS TO DELIVER SKILLS

Ensuring that we have the right skills, knowledge and competences is potentially one of the biggest challenges we as an industry are facing with digitalisation. Whatever the content, one key challenge will be to develop education and training systems able to deliver training that meets the rapidly evolving labour market needs, specifically when companies are engaged in the deep and fast process of digitalisation. Overall, we need to think about whether the models we use today for delivering education and training will be relevant in a more digitalised society. Considering the speed of

technological development, we believe that cooperation between education and training providers and industry will be crucial in achieving good quality (vocational0 education and training. The importance of lifelong learning and learning in the workplace will also grow in the MET industry, not least to address the change being anticipated during strategic skills planning under the pressure of digitalisation.

This challenge can be summarised as follows: How can Member States and Regions (with the support of the European Union when appropriate), education and training providers (including vendors of ICT technologies and solutions), and social partners in the MET sector deliver training that will meet the emerging demands, both in the existing workforce as well as in the education and training systems as a whole?

Training and ongoing qualification of employees has in many countries kept pace with all the technical developments in the recent decades and is not new. What arguably is different now, with the emergence of the digitalisation of work in the MET sector, is the speed and scope of the development.

The most pressing challenges in terms of education are arguably the lack of digital skills and competences among teachers themselves, as well as the lack of resources for technological equipment and for updating these teacher qualifications at educational institutions. Unless there are resources to teach digital skills at school, no progress is to be expected with curricula etc.

> *MET social partners need to play a role in the design and development of courses, whether at school, college or university to ensure that the needs of our fast-moving sector are met.*

Many social partners in the MET sector at national level across Europe are dealing with the challenges of identifying skills, adapting curricula and linking to training providers – in Germany, Denmark, Slovenia, Sweden and Italy to name a few.

>> VET

There is no need to create completely new VET skills and competences – while some new skills needs will arise, the already existing skills and competences should be interlinked and adapted to the demands of a digitalised industry. It is therefore necessary to identify and develop additional qualifications and qualifying components that should be taught in VET. This is the task and strength of industry itself. Here work-based learning and continuous vocational training carried out in and by companies is vital to ensure that training systems are well prepared to respond to the skills developments.

In VET, IT skills and digital literacy should be taught through all professions and levels of education. This is also a responsibility for social partners where they are involved in governance and curricula definition.

>> Higher education

Higher technical education will need to be developed to solve the competence demands in industry that come with digitalisation. Engineering courses will need to put emphasis on fundamental

engineering knowledge, such as ICT, programming and systems design, but also focus on how this knowledge can be applied in real systems and products, with an integration of project management skills, communications and business acumen.

>> Continuing education

Generally, the responsibility for ongoing vocational training should be shared as a function of benefits and interests. As a rule, employees and companies benefit equally from ongoing training. They should therefore both participate appropriately in the effort and accept responsibility.

Digital delivery of content provides new methods for training at the work place, with better adaptation to time and location constraints of professionally active learners. However, distance learning needs close tutorship and assessment of learning outcomes, in order to prevent drop-out. Its results should be recognised on the labour market.

DIGITAL TECHNOLOGIES ENTAIL SPECIFIC OCCUPATIONAL HEALTH & SAFETY OPPORTUNITIES AS WELL AS RISKS

New technologies generate opportunities in the field of ergonomics (using digital simulation of work processes) and thus in preventive healthcare at the work place. Similarly, the increased use of digitally-controlled assistance systems can relieve physical and mental stress, improve level of employment for older workers and for performance-impaired people.

Individual responsibility for Occupational Health & Safety (OHS) increases with greater employee autonomy. The requirements of OHS at fixed, established workplaces cannot be transposed one-to-one to mobile work stations and home offices. This transposition could therefore be the purpose of further discussion among social partners.

People use the same digital technology (computers, smart phones) in their private lives as they do professionally. This raises questions regarding the overlap between what people do in their private and work lives.

Research must not only be geared to dangers, but must also look at realising potential in maintaining or improving people's employability and in making companies more competitive.

> *Social partners need to identify the OHS related issues concerning the emergence of collaborative robots or "co-bots".*

Autonomous machines or vehicles, whose actions may depend from input by a broad set of independent entities, may elicit new risks of accident, and new issues for compensation.

NEXT STEPS

The issues identified in this joint position are likely to emerge in the MET industry in the near future and will need to be dealt with and shaped in order to meet the interests of both the employers and

employees. In that sense industriAll Europe and CEEMET will strive to exchange good practices, put these issues in to context and issue joint views and recommendations.

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