Cyber-production avatar

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Abstract. To prognosticate a crisis in the small and medium entrepreneurship engaged in technological product manufacturing may lead to creation function expandable platform to control a cyber-production. A cyber-production is a separate technological aggregate physically isolated as a device class. A cyber-production avatar is a system administrator to control the control modes and inter-machinery interaction. The cyber-production technical park area provides the item manufacturing from the idea to a serial sample. To control aggregates within being regulated parameters, which is normally done through the production office functioning center requires from the avatar strong technology and cyber-tools grasp. The labor functions are defined as much as cyber-production operator requirements as an Industry 4.0 worker. The working conditions and system of labor relationships are defined, which are valid for the Industry 4.0 cyber-production as an employer 4.0.

1. Introduction

Domestic and foreign scientists attention is paid today to the new partnership model between the business and the State research, which is a response to the Industry 4.0 defiance [1, 2]. To apply new knowledge field of a technological segment made the problem stronger because of the workforce shortage and revealed the new labor market demand tendencies. New production operational models formation requires from the staff a high level of computer domination and a lot of engineer skills [3, 4].

To learn new technologies is called by the education sector reform, which propose new education programs and courses when the highly monotonous occupations are about to be eliminated (windows of possibilities), which sublime knowledge of business-economy and business-informatics [5, 6]. With cross branch competences the prepared specialists could realize new and very profitable business models, which concentration is on the digital data transformation into a physical product with cyber-physical production [7, 8].

Deeply rooted in common mind today technological traditions are a part of contradiction with advanced labor standards, which view an employee as a free agent of labor relationships interested in digital company labor with remote interaction between the employee and the company [9, 10]. Such labor and employment model meets the worker expectations is with the industrial cyber-production practical application, which inter-branch components are shown as a plurality of construction and
technological processes, which let the company personnel gains the maximum material profit and labor moral satisfaction from the digital technologies abilities [11, 12].

The production mechanical transformation and personnel working places change with the means of automatizing, which sometimes are far beyond the human possible abilities (for example, a dangerous production with some bad health factors), which from the labor conditions point of view creates new communication tools between the personnel and technological machines [13, 14]. Humans and machines remote cooperative work based on the cyber-object of the smart net concept sees a worker as the digital production avatar controller whose qualification plays a leading role for the business models profitability in the Industry 4.0 direction [15, 16].

A cyber-production automatizing transforms soon enough the labor market and creates new work forms for the employees with an ecosystem, which skillfully combines the human analytical abilities and digital assistant capabilities [17, 18]. The employee virtual labor functions legal aspects in telemetry systems and cyber-production office assistance today is a subject of many discussions but to ignore objective advantages of the industrial revolution is pointless now. The career planning physical popularization for persons who are interested in the technological sphere innovations is reflected in the new occupations atlas, which is an integral part of the human life in the innovative Society 5.0[19, 20].

2. The cyber-production avatar operator as an employee 4.0
The digital cyber-production avatar operator is a new type of creative worker with some strong positions in the labor market and with a balanced technical and humanitarian mind at the same time. The avatar operator professional competences are concentrated on the technical systems wide class maintenance (machine and technological base of the world level) engaged in some science production business to control normally and without alarms the technological aggregates load.

The modern cyber-production is a system of united computer nets with connected self-controlling technological objects with different functions. To maintain such industrial systems means avatar operative reaction for emergencies episodes and also failure elimination works (technological support) and throwing away some non-planned idling in production.

The fourth phase to organize the work relations from the cyber-production occupation features point of view is characterized with following primary properties [21, 22]:

- the avatar operator remote work subject is defined electronically as some digital data generated with informative processes in the protected technological environment;
- the avatar operator remote work means are defined electronically as some digital gadgets (tablet computer, laptops, smartphones and other) to support cross channel communications;
- the avatar operator remote work result is defined electronically as some digital product objects (models) synthesized in the production informative environment;
- the avatar operator remote work payment is defined electronically as some payments of smart contracts where the employee payment size is dependent on their individual results.

The avatar operator, who is a smart net aggregator, employee competences profile and their professional requirements as new type of working places have the following labor functions [23, 24]:

- the technological aggregates condition monitoring and classification (the product being manufactured and production machines data reading out and processing);
- the company profit increase factors hidden dependencies business analytics to tie up the company production orders and its adaptive capabilities to the market defiance;
- the inventory reports generation with cyber-production shift and day status and commercial products being manufactured;
- a multi-nomenclature order production electronic specifications monitoring into an algorithmic form, which is the company intellectual capital;
- virtual team work of the cyber-production cloud infrastructure same rank users and other.
Flexibility increase of the working labor conditions for the avatar operator has some requirements increase to the occupation because the person should grasp a lot of competences adequate for the forthcoming revolutionary industrial changes. This labor market segment first sees the human knowledge as innovative economic product.

3. Cyber-production as an employer 4.0
In the Industry 4.0 conditions to make some social stability they need to mobilize the capital in urbanized areas and new product consumption markets opening approximated for an individual consumer. The post-industrial society innovations are justified with competence pressure consolidation for the manufacturer, which can be seen today as the global digitalizing. Form the Industry 4.0 role position the regional competence centers economy there is an innovation tide to develop a cyber-production with some useful for society effect creating the intellectual property market where the labor sphere norms and rules are defined with the human and machine digital interaction balance.

Science and industrial facilities related to the modern cyber-production conditions to manufacture commercial goods certified with ecological standards. Requirements increase to the production ecological state proves the industrial segment implementation the specialist of in science inter-sections knowledge and skills. The labor resources differentiation creates the flexible work shifts and conditions to form new rules of social-labor and economic population behavior.

Many aspects how innovations appear significantly change and expand the cyber-production human labor potential capabilities. The production sphere qualified cadres necessities delete the labor world known limits and make the labor relationships constructors see in a new way the job being done ergonomic features. Highly perspective projects where the profit creates new man and scientists intellect, which is reasonable to be realized in the good welfare conditions created by the relationships system «knowledge-human-environment-equipment».

Axiom approach to develop the innovation support institutes with the Industry 4.0 features forms the necessary redundancy of scientific discoveries by the mechanism of the population creative potential engagement and creates the base to transform the industrial society into the informative Society 5.0. The specialists self-realization with innovative activity let the economically active citizens sharpen their theory inventions to the stage of their practical application to provide different human necessities. The cyber-production direction requires the labor engineering to be a process of overcoming some specific difficulties, which is finished with an innovative idea to become a smart product.

The Industry 4.0 development technological logic in prioritized scientific ways requires the application of mechanization means in the first place and advanced robotic technics into cyber-production segments where the requirements are [25]:

- collective application of scientific equipment to give to the market a technological innovation;
- the technology investment commercial profit receiving where the hard physical work or a monotonous work is required;
- the self-employed population business activity increase with some designing capabilities and a lot of perspective ideas, which are added to the specialist technical potential;
- advanced ideas for the new labor forms creation and automatized working places, which are actual for the domination center in critical technologies where the business competition is the innovation redundancy and other.

4. Conclusion
To develop a new occupations atlas in the international labor division system reflects a multi-direction of the Industry 4.0 becoming common innovations. The cyber-production specialists occupation choice grasps the potential workers attention on the personal career trajectory with maximum personal profit gained including the labor results moral satisfaction from the new remote way of social and labor relationships. The staff mobility and the digital company innovative tools grasping becomes additionally actual in the industry segments where the technological machines changes the human labor.
The cyber-control trends show the labor resources additional requirements. The universal approach to the labor digital organization reflects the industry revolutionary situation solution and which is to make closer educative, scientific and technological component, which influence the population employment with a wide consumer range interested in a good job and secure labor conditions.

Long-term coordinated business relationships to attract innovative companies capital (technological leaders) is the base of the Industry 4.0 national development projects matrix. The scientific export provision is a new form of the commercial product circulation to synthesize the equal connections of inter-State trading and the global economy in general. To reconsider the statements of social and labor relationships in a cyber-production will be a base for the business investment tools improvement for most resources into the advanced equipment, which will be controlled with an avatar.

Labor processes digitalizing is of equal importance for the managers and for the specialists interested in market and labor conditions radical change, which is primarily based on the technologies. Required by the companies today vacancies show the existing fragmentation of digitalizing tools and ministry (branch) cyber-production and cyber-services components dissonance, which call the market demand. Target incubation of innovative ideas and solutions requires the traditional labor relationships model global reconsideration, which must be developed as close cooperation of industry men associations and professional unions organizations.

A lot of researches of the labor market changes in the stage 4.0 show that the cyber-production technical re-arming first investment must be accompanied with subsidiaries donation from the State, which could be a direct form of the small companies financial help of science and technical sphere or maybe as not so rigorous customs regulations (acquiring an imported equipment) and good tax preferences. When the State takes the brunt of the company technological re-equipment financial load is a motivation for potential investors who may co-finance good and services logistics chains from the intellectual idea until the end consumer product.

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