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JOB REENGINEERING AND THE INCREASE OF UNEMPLOYMENT

Summary. In ancient times work was perceived negatively and performed mainly by slaves. At least since the industrial revolution work is desirable, and its absence excludes from full participation in society. It is claimed, that due to technology, many professions will be pushed out of the job market. That is why we need a discussion on a new project of socio-economic development, from which work is not eliminated.

Keywords: reengineering, technology, work, unemployment, basic income, precariat.

REENGINEERING STANOWISKA PRACY A WZROST BEZROBOCIA

Streszczenie. W czasach antycznych praca była postrzegana negatywnie i wykonywana głównie przez niewolników. Nie była ona przywilejem, a przykrym obowiązkiem. Przynajmniej od czasów rewolucji przemysłowej praca jest pożądana, a jej brak wyklucza z pełnego uczestnictwa w życiu społecznym. Wszystkiemu winien jest rozwój technologii, która wypiera z rynku pracy nie tylko pracowników fizycznych, ale przede wszystkim umysłowych.

Słowa kluczowe: reengineering, technologia, praca, bezrobocie, dochód podstawowy, prekariat.

1. Introduction

In ancient times work was perceived negatively and performed mainly by slaves. At least since the industrial revolution work, *labor* as understood by Hannah Arendt, is desirable, and

its absence excludes from full participation in society. Many contemporary observers warn that future unemployment will have an unprecedented dimension. Blame it on technology. Robots are beginning to replace even white collars, including specialized doctors.

2. Reengineering – definition

The term "reengineering" appeared in the literature through the works of Michael Hammer and James Champy. In the book *Reengineering the Corporation: A Manifesto for Business Revolution* published in the 90s of the last century, we can read that reengineering is a "fundamental rethinking and radical redesign of business processes, leading to a dramatic improvement according to the critical contemporary measures of achieving results (such as cost, quality, service, speed)"¹. It is therefore quite a new concept of business model, which aims to improve the performance of the company by introducing technical reorganization of important processes of its functioning. Reengineering is realized primarily through the use of new information technologies that replace the traditional forms of the organization: traditional organizational pyramid is flattened by the use of computer networks. Reengineering is a way of economizing the production process, which on the one hand, brings positive effects in the form of profit, but on the other as a result of restructuring generates unemployment. Thus, reengineering is a part of a wider phenomenon already described by Marx and Engels, namely in the process of replacing work by technology.

3. Technological unemployment

Marx and Engels speak here of technological unemployment, which in the times of the Great Depression was also described by John Maynard Keynes, who was not a particular expert in Marx or economic disputes around him². He presented this phenomenon as a new disease, which could soon touch everyone. Technological unemployment, as Keynes put it "Means (...) unemployment caused by inventing ways of a more economical use of labor, faster than the rate at which you can find a new job for dismissed workers"³. For most economists or sociologists question whether reengineering is a factor reducing employment is

¹ Champy J.: *Reengineering the Corporation: A Manifesto for Business Revolution*, New York 1993.

² Vide: Hobsbawm E.: *Jak zmienić świat. Marks i marksizm 1840-2011*. Warszawa 2013, p. 244.

³ Keynes J.M.: *The General Theory of Employment, Interest and Money. Essays in Persuasion*, New York 1931.

obvious. However, discussion on this topic has two sides⁴. The first line is represented by the proponents of the theory of compensation, according to which the amount of repressed jobs will be offset by the creation of new jobs through the introduction of new technologies (subject of compensation will come back later in the text). The second line shows the technological unemployment, in contrast to the proponents of the theory of compensation, as a mass phenomenon and permanent, not temporary and microeconomic⁵, leading to the predicted by Jeremy Rifkin „end of work”. Rifkin believes that fewer and fewer people will be employed in an ever modernizing economy. The result of re-engineering of jobs will be pushing outside of the job market multitude of skilled workers, who are unnecessary, since they are replaced by computers. In the middle of the twenty-first century, according to Rifkin, we will be able to meet the entire demand for goods and services, using a maximum of 5 percent of manpower⁶. However, according to forecast by the Boston Consulting Group, until 2025, thanks to automation of tasks at work, labor costs will decline by 16%, and cheaper robots will replace humans at an accelerating pace⁷.

Rifkin, building his theory of the „end of work“, refers to Robert Theobald, who in the 1960s clarified the issues that Rifkin develops. Theobald observing the technological progress of the United States and other wealthy countries came to the conclusion that their production systems will be based primarily on the strength of machines and machine capabilities, and that it will happen in the next two decades (in the 80s). “We are facing a change - wrote Theobald - replacing the man and his skills by machines will destroy many jobs and make completely useless experience of many people who currently have jobs. The possibility of finding a job in one of the few new sectors will depend primarily on the qualifications and training of applicants. As a result, the decreasing chances of starting a job will be the most severely felt by those, whose tasks are simple and repetitive, because it will be the easiest to replace them by machines. In conclusion, we will be facing a complete collapse of the current socio-economic system, whose main principle is to provide work for all in need”⁸.

⁴ Vide: Afeltowicz Ł.: Czy technika pozbawia nas pracy? Bezrobocie technologiczne w perspektywie teorii aktora – sieci. *Studia Socjologiczne*, No. 1 (184), 2007 p. 108.

⁵ Ibidem.

⁶ Vide: Rifkin J.: *Globalny Fajrant*. *Gazeta Wyborcza*, 29-30.12.2001.

⁷ Vide: Boston Consulting Group, *How to Takeoff in Advanced Robotics Will Power the Next Productivity Surge*. <http://www.slideshare.net/TheBostonConsultingGroup/robotics-in-manufacturing> [access: 12.02.2016].

⁸ Theobald R.: *Free Men and Free Markets*. New York 1965, p. 8-9.

4. Reengineering vs. capitalism

Theobald wrote these words before the liberal revolution, after which the principle of providing "work for all in need" was replaced by the principle of maximum market competitiveness, from which depend the growth and development of the economy. According to the neo-liberal doctrine, everything should be subordinated to increased competition and market rules should permeate every aspect of life. Governments that have adopted the "neo-liberal" program began to create more flexible labor market, and in order to maintain employment, they began to transfer the risk to workers and their families. Released by the paradigm of neo-liberal forces led to significant economic and social tensions (an example of which may be the crisis started in 2008). This is due to the fact that the market has become the only factor, and not one of several ones (like in the theories of Keynes) regulating economic and social relations. Neoliberalism is not only an economic doctrine, but it is also, or above all, an ideology whose objective is to capture our whole thinking⁹. John Gray, the author of classic works on liberalism, once fascinated by neoliberal thought of Friedrich August von Hayek, in his recent work equates neoliberalism to communism, treating these ideologies as messianic movements driven by faith. Apart from J. Gray also many other commentators of late capitalism, for example, Loïc Wacquant, Jamie Peck, Nik Theodore believe that neoliberalism is not born from the necessity of social and political freedom. Reengineering, as already mentioned, is part of a wider phenomenon, it is part of replacing work by technology. Replacing by technology is a situation in which innovations in equipment and organization save jobs, which in turn can produce more for less by less numerous crew. This process, which has evolutionary character, is the essence of capitalism, which, as put by Joseph A. Schumpeter, "is a form and method of economic change"¹⁰. The basic driving force of the capitalist machinery, according to Schumpeter, are new forms of industrial organization. Reengineering is such a new form of organization, described by Schumpeter as "creative demolition" or "process of industrial mutation that (...) constantly revolutionizes the economic structure from within, incessantly destroying the old one and creates a new one. (...) This is ultimately the essence [of capitalism], and it is a factor determining the conditions for the functioning of every capitalist enterprise"¹¹. Capitalism since the industrial revolution is creating new structures, new technologies, and then destroys it and replaces by new quality. „Creative demolition“ is associated with new consumer goods, new markets, and is the

⁹ Vide: Szahaj A.: Kapitalizm drobnego druku. Warszawa 2014, p. 31.

¹⁰ Schumpeter J.A.: Kapitalizm, socjalizm i demokracja. Warszawa 1995, p. 101.

¹¹ Ibidem, p. 102.

inevitable evolution¹² of successive revolution, which for example is the story of the productive farms „from the rationalization of equipment crops, plowing and soil conditioners to the current level of mechanization - in conjunction with elevators and railway lines“¹³. Until the 80s of the twentieth century, mechanization displaced mainly manual work, but after a wave of computerization, also administrative work began to be displaced, which resulted in downsizing the middle class¹⁴. Marx and Engels predicted the replacement of the proletariat by the machine, which would be a harbinger of the end of capitalism and its replacement by socialism. However, they did not foresee the emergence of a middle class, through which capitalism has not collapsed, and even developed. The mass middle class, "white collars", educated professionals, like in the second half of the nineteenth century proletariat, is now displaced by the revolution in communications technology¹⁵. Thus, reengineering has become a process, the effects of which are closely related to the condition of contemporary middle-class and a question about the future of capitalism. This question has recently been asked by Randall Collins. He says that capitalism will not survive the second wave of replacing by technology, and although capitalism has found so far five major roads to escape it, Collins believes that they lead to dead ends¹⁶. Capitalism has five possible solutions:

1. New technology creates new jobs and new professional sectors.
2. The geographical spread of the markets
3. Metamarkets in finance.
4. Employment in the public sector and investments
5. Educational inflation and other hidden Keynesianism¹⁷.

In the context of reengineering the most interesting points are 1 and 2. Let's get back to the topic of theory of compensation. Its supporters believe that new technologies create as many jobs as these technologies push out of the market. Collins points out that even if these numbers actually are balanced, certainly the new jobs do not match the quality of the old, and do not replace the lost income. Therefore, retraining programs, according to Collins, do not affect the rate of structural unemployment. It is true that information technology (IT) creates new jobs, but not for the same salary. For example, thanks to the software to remotely control computers, work day has extended. Precarious employees often do their work at home, after

¹² As capitalism is a process that is inevitable evolution, it makes the pessimism associated with new technologies vain. Examples include luddite movement, enraged English and Scottish craftsmen, who in the nineteenth century protested against modernity, breaking into factories, to destroy machines depriving them of work. The more modern example are virus writers. Hackers, who break into corporate computer systems paralyze their work to take symbolic revenge for the masses of workers driven out of the labor market by the computerization process.

¹³ Schumpeter J.A.: Kapitalizm..., op.cit. p. 101.

¹⁴ Vide: Collins R.: Koniec pracy klasy średniej - i żadnej ucieczki, [in:] Wallerstein I., Collins R. Mann M., Derluigian G., Calhoun C.: Czy kapitalizm ma przyszłość? Warszawa 2015, p. 49.

¹⁵ Ibidem.

¹⁶ Ibidem.

¹⁷ Ibidem, p. 49-63.

hours, enjoying the privilege of "homeworking", which in fact is a way to reduce costs in the workplace¹⁸. And this is just the beginning, "more sophisticated computerization is yet to come: artificial intelligence, in which the machine will take over from people higher cognitive process. When a computer program, as well as new applications will be completely created by a computer, the displacement of the middle class will almost be completed"¹⁹. The second technology displacement does not proceed evenly. The more developed the economy, the process is more advanced, though negative effects may be less visible, thanks to the capabilities (mainly financial) to ensure job security. Poland is a country in which the ability to maintain a permanent job security in the face of widespread robotics in the workplace is among the lowest in Europe. According to the report "Will the robot take your job? Sectoral analysis of computerization and robotics European labor markets "prepared by WISE, in Poland the percentage of occupations susceptible to mechanization is significantly higher²⁰. Poland is located in the end of the ranking, which according to the authors of the report indicates potentially high social costs of the adjustment process. In the upcoming 20 years up to 36% of the professions will be subjected to robotics with a probability of 65% or more (see Table 1). This means that every third Pole will be in the recent future threatened by technological structural unemployment.

Table 1

Twenty professions of the group most vulnerable to automation – Poland; 2011

Profession	the likelihood of automation	% job market	cumulated % of job market
Workers in food processing and related	0,985	1,50%	1,50%
Administrative employees and specialized secretaries	0,981	1,62%	3,12%
Employees of cash transactions	0,977	0,90%	4,02%
Domestic helpers and office, hotel cleaners	0,918	2,84%	6,86%
Workers in mining and construction	0,911	1,32%	8,18%
Railway drivers, train traffic dispatchers	0,872	0,73%	8,91%

¹⁸ Another example may be the self-service cash in hypermarkets. Here follows a shift of work from exempt assistants to the customer, which makes the price of the product de facto higher, it is increased by the work of the client, who has to do the self-service.

¹⁹ Ibidem, p. 51.

²⁰ Warszawski Instytut Studiów Ekonomicznych.

Cashiers	0,866	0,72%	9,63%
The operators of mining machinery and equipment	0,851	0,90%	10,53%
Fitters	0,823	1,55%	12,08%
Truck and bus drivers	0,810	3,21%	15,29%
Other blue collar occupations	0,784	1,03%	16,32%
Drivers of passenger cars, vans and motorcycles	0,762	1,60%	17,92%
Security services workers	0,699	2,79%	20,71%

Source: Bitner M., Starościk R., Szczerba P.: Czy robot zabierze ci pracę? Sektorowa analiza komputeryzacji i robotyzacji europejskich rynków pracy, Warszawa 2014, p. 15.

5. Basic income

Job security, due to the negative social implications, is in the interest of every government. According to many commentators, the problem of replacement by the technology can only be mitigated by governments that are not able to fully solve it. According to the influential weekly *The Economist* „The answer is not regulation or a larger state“, but introduction of high minimum wages „will simply accelerate the replacement of workers by machines. Punitive tax rates will deter entrepreneurship and scare off the skilled on whom prosperity in the digital era depends. The best thing governments can do is to raise the productivity and employability of less-skilled workers. That means getting rid of daft rules that discourage hiring, like protections which make it difficult to sack poor performers“²¹. Analysts affiliated with *The Economist* are of the opinion that at this point the most important is to ensure the widest possible access to education for people in any age group: „In future, education should not be just for the young: adults will need lifetime learning if they are to keep up with technological change“²². Just as in the nineteenth century, through education, governments allowed people to use the industrial revolution, so now the digital revolution requires equally effective actions. However, the obstacle to its realization is growing political crisis in Europe, which translates into a socio-economic relations with the rest of the world. This crisis, which is an echo of the global economic downturn of 2008 and increased migration of population, strengthens disintegration, which prevents the building of a common

²¹ Wealth without workers, workers without wealth | The Economist, <http://www.economist.com/node/21621800>.

²² Ibidem.

policy on technological risks. Thomas Piketty, author of the famous *Capital in the twenty-first century* suggests, that the solution is to move away from the neo-liberal doctrine: „Only a genuine social and democratic refunding of the Eurozone, designed to encourage growth and employment, arrayed around a small core of countries willing to lead by example and develop their own new political institutions, will be sufficient to counter the hateful nationalistic impulses that now threaten all Europe“²³. Job security can be realized also by ensuring an appropriate level of economic security. It may become the way „ex ante by providing each resident of the country legitimate right to a guaranteed income. It was postulated by the great utopians like Thomas More, Tom Paine and Bertrand Russell, it was also supported by prominent economists and other social thinkers“²⁴.

The idea of basic income has a long intellectual tradition. In 1797 Thomas Paine, penned a pamphlet²⁵ arguing that every person is entitled to share in the returns on the common property of humanity: the earth's land and natural resources. He suggested paying every citizen the equivalent of around \$2,000 in today's money—which was back then over half the annual income of a worker—on their 21st birthday. The benefit would visible to whole society, it will help to avoid creating “invidious distinctions” between rich and poor. Since Paine's proposal, this idea has attracted support from both sides of the political aisle.

Among the contemporary proponents of guaranteed income is a Dutch philosopher Philippe Van Parijs, one of the most important members of the Basic Income Earth Network. In his opinion, guaranteed income could be a solution for a technology replacement of jobs and could allow "freedom from the tyranny of the bosses, husbands and bureaucrats". A basic income is an income unconditionally granted to everybody on an individual basis, without tests or work requirement²⁶. It is unconditional in three distinct senses:

- 1) individual: the right to is independent of household composition;
- 2) universal: it is paid irrespective of any other income, which can therefore be added to the basis it provides;
- 3) free of counterpart: it is paid without requiring the performance of any work or the willingness to accept any²⁷.

²³ Piketty T. with NYBR.

<http://www.nybooks.com/articles/2016/02/25/a-new-deal-for-europe/> [access: 17.02.2016].

²⁴ Standing G.: Prekariat. Nowa niebezpieczna klasa.

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²⁵ Paine T.: Agrarian Justice. <https://www.ssa.gov/history/paine4.html> [access: 12.02.2016].

²⁶ This is the definition adopted by the Basic Income Earth Network (BIEN), www.basicincome.org.

²⁷ Van Parijs P., Vanderborght Y.: Basic Income in a Globalized Economy.

<http://www.basicincome.org/research/> [access: 12.02.2016].

6. Conclusion

The idea of a guaranteed income does not solve the essence of the problem undertaken in the article. Ensuring the security of employment or to guarantee an adequate level of economic security are not "escape routes". Work is more than just gaining a livelihood, it is a basic element shaping society. Work is "a fundamental creation of human existence"²⁸, it is therefore a prerequisite for the existence of society. Therefore, in the era of technology development and reengineering, we need a discussion on a new project of socio-economic development.

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²⁸ Marcuse H.: *Le fundament philosophique du concept economiquw de travail. Culture et societ *, Paris 1970, p. 21-60.

Omówienie

Praca to jeden z głównych tematów poruszanych przez szeroko rozumiane nauki społeczne. W czasach antycznych praca była postrzegana negatywnie i wykonywana głównie przez niewolników. Nie była przywilejem, a przykrym obowiązkiem. Przynajmniej od czasów rewolucji przemysłowej praca jest pożądana, a jej brak wyklucza z pełnego uczestnictwa w życiu społecznym. Bezrobocie urosło do rangi jednego z podstawowych problemów społecznych, ekonomicznych i politycznych.

Co zrobić w takim razie z całą armią bezrobotnych? Jedną z propozycji jest ustalenie dochodu gwarantowanego, który miałby zapewnić godne życie każdemu, niezależnie od tego, czy ma pracę. Idea dochodu gwarantowanego nie rozwiązuje sedna problemu podejmowanego w artykule. Praca to coś więcej niż zdobywanie środków do życia, to podstawowy element kształtujący społeczeństwo. Dlatego w epoce drugiego wyparcia przez technologię, którego reengineering jest jedną z przyczyn, potrzebna jest dyskusja nad nowym projektem społeczno-gospodarczym.