Is it a dream job working in ICT in Romania?

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Abstract. *This paper aims to show the latest trends in ICT working field, with some focus on the programmers' challenges in an increasingly competitive labor market. We selected only a few from a long list of complaints regarding neglected intellectual rights, unapplied Medicine Law rules, making overtime above the maximum allowed working hours, and corporate social responsibility concerning the humans' health and family.*

Keywords: labor market, ICT, intellectual property, overtime.
JEL Codes: M15.

1. Introduction

Work was defined as the specific human activity that transforms the environment according to human needs. More recently, K. Marx defined work as the way in which extra labour is used to obtain profit by the capitalists, as the difference between value added and the employees' total wages. It remains to be discussed the ratio the work is reflected by the value of marketed goods in an economy where the financial mechanisms (interest rates) are determinant in pricing and promotion is increasingly more subtle.

The purpose of this article is to answer the question: Which are the problems that ICT employees are facing? Which is the impact of their work in GDP? Is the money they earn worth for more than twelve hours per day of writing code?

2. Literature review

"ICT drove the third industrial revolution and it was adopted and used throughout the economy. There are significantly improving data insights for environmental to business analysis through the use of satellites, advanced image-processing and big-data analysis; enabling cyber security by applying artificial intelligence; improving health through immunotherapy, sensors' behavioural modification; and increasing synthetic biology output through computational modelling, big-data analysis and novel molecular biology tools". [WEF, 2016]

In Romania the gross value added in the ICT sector has impressive quotas for some of European countries such as Ireland (up to 9.7% of GDP in 2014), Luxemburg (up to 6.1% of GDP in 2015), United

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Kingdom ((up to 5.8% of GDP in 2015), Romania (up to 5.6% of GDP in 2015). Over the time the average of ICT % from total GDP was 4.4. These figures show that ICT in Romania is an active sector. (Fig.1)

In figure 2 it may be observed that in Romania the ICT sector has had a positive trend since 2013, by then having the average value within UE.

The GDP is reflected in the standard of living. The composite indicator of the standard of living (real wage index) is based on Gross Domestic Product at the standard purchasing power parity, i.e. adjusted at the level of prices of the country. The Eurostat data show that in 2014, Romania has improved the real wage index related to the standard of living. While the European average is 49 %, Romania has registered 54 %, being on the sixth place in the EU hierarchy. [Mârza, 2015]
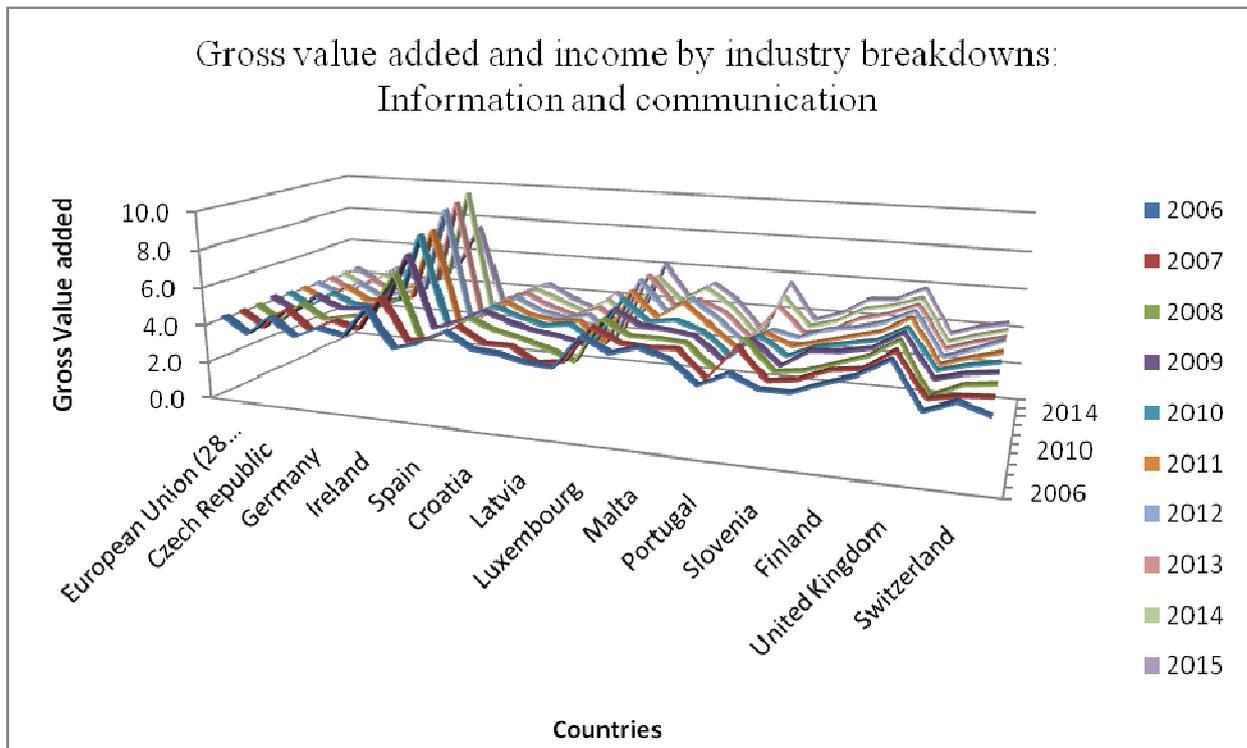

Fig. 1 Percent of ICT GDP in total GDP, (Source: Own processing of Eurostat data)
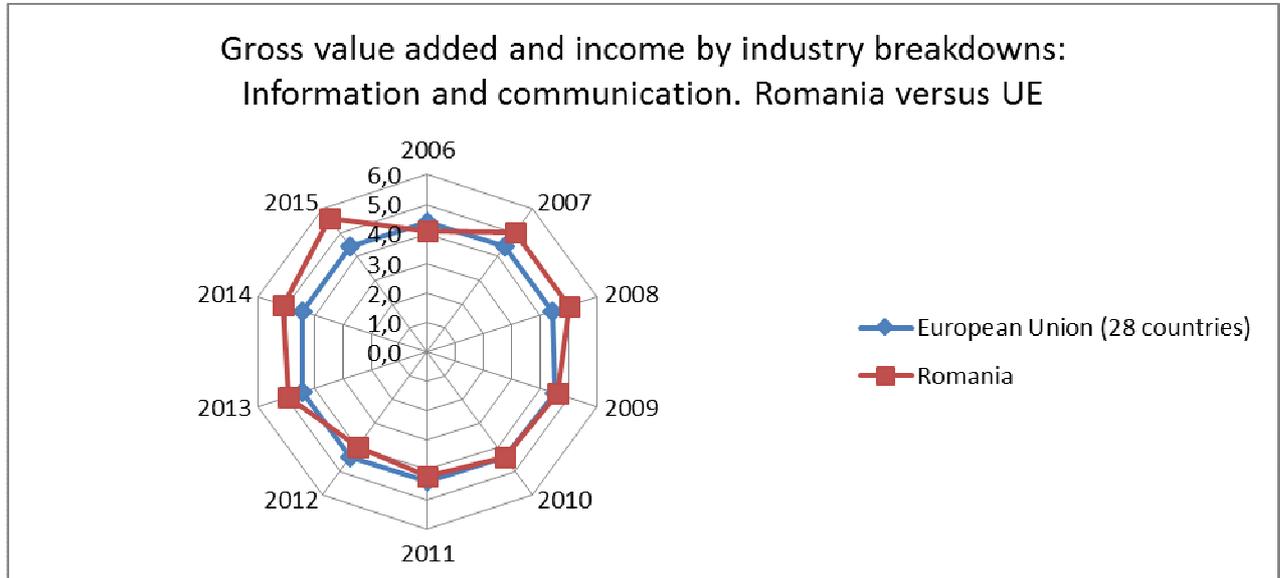
Fig.2. Percent of ICT GDP in total GDP. Romania versus UE for 2006-2015 period, (Source: Own analysis of Eurostat data)

These data are confirmed by a recent study: Brainspoting [Ciutac, 2015] and [Văduva, 2016]. It shows that around 3,000 IT job openings advertised at any given time, with approx. 100,000 ICT specialists at the national level, most of them being technical or ICT graduates, from Bucharest, Iasi, Cluj, Timisoara, Brasov, Sibiu, etc. The salaries start from EUR 500 for quality assurance juniors to EUR 3,000 for Senior Software Developer.

Most of the IT professionals request for medical insurance (64%), financial support for training (46%) because the tasks are very difficult and the companies do not invest in their staff, flexible hours of work or telework / work from home are requested by professionals (43%).

One major problem is the work on projects last 3-6 months for one programmer. "One out of 4 professionals receives a counter-offer and 50% of them will take it. However, counter-offers prove to be a short term solution as most of the candidates will still leave the employer in 2 to 12 months" [Ciutac, 2016]. The same study shows that 28.21 percent of the IT profiles have changed their job at least twice, while almost one quarter of the market (23.93%) have changed jobs three times.

In Romania the labour market in the ICT field is increasing constantly. There is a high need for very qualified employees in this field. "As any other EU member state, Romania has developed a national programme in line with EU policies, namely the National Strategy on Digital Agenda for Romania. One of the positive outcomes of the strategy is that the ICT workforce should rise to 250,000 people employed in the sector by 2020 in Romania (MIS, 2014). Moreover, the Employers' Association of the Software and Services Industry - EASSI (2013) mentions that the government also supports the IT industry growth through specific measures: 100% income tax exemption for IT specialists (software engineers, system designers, system engineers or analysts) established since 2001, public financing for development of IT innovation parks, state aid for regional development (Ministry of Public Finance of Romania, 2013), job creation and investment

support for new technologies development and 50% tax deduction for R&D related cost of operations, export promotion programme to assist companies in reaching their international customers through participation in fairs and exhibitions" [Burciu, 2015].

The employees in ICT are in fact the mind of a firm, providing most of the company intellectual property. It's a taught job, because they have to learn constantly. The problem is that usually there are no teachers or enough access to knowledge in the niche field, although the government structure is trying to support it. As we may see below there are investments in the field, but most of it is for broadband expansion, while the market demands training and specialization for the employees. Even so, ICT employees are treated as if they were ordinary workers.
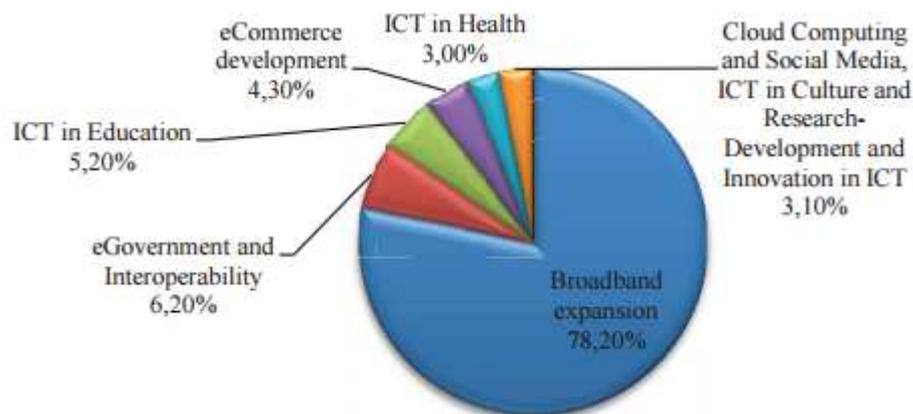

Fig.3: Distribution of money allotment in Romania (Source of data: Ministry of Information Society)

In ICT there is a thin demarcation between positive and negative traits, in the sense that a positive feature might be easily transformed into a flaw. Thus, multi-tasking and multi-qualification are viewed both as positive and negative features, the first associated with efficiency and the second with the lack of quality [Buzea, 2015], because multi-tasking is just a wishful thinking. In fact multi-tasking activities have a negative impact on human brain, causing inefficiency and reducing creativity.

Furthermore, the dual structure of the folk theories on work culture is completed by two opposite features: hardworking and laziness. Hardworking is associated with positive traits, such as cleverness, creativity, multi-tasking and laziness is associated with negative traits such as lack of discipline and sloppy work [Buzea, 2015]. The negative traits are in fact the cause of a very week middle management (project management) in the field.

3. The voice of programmers

We shall demonstrate that work in the ICT sector is under-priced, due to unfair labour laws, outdated ethics regarding work, and post-industrial inertia of production methods. The wage of a programmer is determined primarily by the law of supply and demand in the ICT sector, experience and technical level counting more as an exclusion criteria, rather than contract negotiation itself. Added value in the software development results mainly from the elimination of bugs, software customization and testing / integration of applications according to customer needs (UAT). The research and development component is still poorly represented in the ICT field of Romania.

Software development is profitable because it rarely involves any intellectual property rights (unfair contract terms) for the developers, so the employers can use the final product/service long after the programmer departure with no extra cost. In addition, the training costs for technical skills improvement

generally affect the employees' budget only; even though the certification exam tax might be reimbursed, its value is between a tenth and a fifth of the course total value. The price of labour is also affected by tax exemptions for incomes obtained in the programming field. Since the employees negotiate the net wage, the reduction of the gross wage is more competitive for the employer. The latter is granted with more government support for creating new jobs, but in fact, the best programmers that are not exported to the parent company, leave the country anyway for better wages and working conditions.

Remuneration in ICT is based on the total working time – more than 45 working hours per week, the maximum in the EU - and the number of work units allocated per employee (ticketing). Needless to explain the assigned tasks difficulty may vary in time and between co-workers so the employees' work is assessed by the two centuries ago production methods. Programming is a discontinuous activity – it tends to be seen as a support service, rather than any production activities - so that employees are not protected against the risk of being fired due to strategic or technological shifts. The programmer is often seen as a mercenary who rents hi/hers intellectual resources and skills for higher wages but in reality he trades his health (both mentally and physically) for financial stability.

Negotiating an employment contract, the employer undertakes to provide the general conditions for the smooth running of business (computers, communications, and transport) and not a development methodology to ensure the programmer against a project failure. It is widely believed that mocked agile methodologies and design patterns guarantee the project success. This is nonsense! In fact, no programmer is aware about the risks involved in accepting a project, especially when he/she joins the team in the advanced stages of the software development cycle and faces architectural problems and/or convoluted logic far beyond his skills or formal education.

A very popular trend after the financial crisis is outsourcing / stuffing, programmers being rented to other companies that show a shortage of highly qualified labour. The emergence of companies specializing in this type of activity has created somehow a vacuum in the labour law. The rented employees can no longer address the labour inspectorate or chamber to report an abuse because they work for/to a company without legal forms. They usually address their parent company that rarely settles a labour dispute against its client.

ITC employees' health is neglected by the general regulations of the Labour Medicine, which do not take into consideration the specificity of this area where the computer is the main means of production. Metabolic and ophthalmic disorders and those related to improper posture at the workstation are not considered occupational diseases, the employee being not protected in any way against these risks. Breaks indicated by doctors in using the monitor are discouraged by the clocking system, the business relationships in which the customer is privileged and team leaders focused more on control rather than on the coordination management function.

Standardization, methodology and management in the ICT sector are open issues due to bad entrepreneurs who see the programmer as an asset rather than a valuable resource, and the employees' inability to correctly appreciate the value of their work, at least in terms of years of studying technical curricula and/or attending expensive professional courses, and the burn-out which makes its presence felt before 30 years old.

Man is already competing with robots on the labour market, many specific human skills being replaced successfully by machines, and many trades have changed their content and requirements with the advent of the programmable electronic computer: e.g. for accounting (SAGA, Excel), in design and architecture (CAD), for sea and in air navigation (GPS), etc. The success of any program is guaranteed only if human mind can avoid error-prone steps in completing algorithms, improve the execution of the source code, and

identify bugs despite general and counter-intuitive messages received from the debugger. Every time the programmer must be a step ahead the machine, and merely for this reason, he/she deserves a better fate.

4. Other proofs

Techrepublic is a renowned reference site in IT filed [Posey,2016]. It comes to strengthen the above statements saying that in IT the hours are long, the personal time is interrupted, and the programmers have to deal with a lot of angry people. In IT work tends to be deadline driven, people expect to fix their home computers and the people lie all the time to hide their mess or lack of technical knowledge/skills. Usually in ICT things don't always work the way they're supposed to and the employees have to deal with lots of bureaucracy, the competition is fierce, and this kind of job tend to make itself obsolete – if everything goes well, why should you keep an expensive high skills employee?

The pay is good compared to many other professions because ICT looks more like a disaster management, but "since they pay you well, they often think they own you" [Fineley, 2010]. Even though it seems there are lots of jobs in the ICT field, many good developers have often trouble in finding jobs, because most of those positions demand very specific skill sets that are hard to acquire without direct experience. Also, even though the pay looks good, many IT jobs are temporary contracts with no benefits, and some may wait for months at a time without working.

5. Conclusions

From the Y2K bubble, ICT seems it lost its capacity to lure talented and gifted people, since more of these people work in fields like bio-agriculture, building a sustainable environment, architecture, management and education. This may be a chance for the most neglected sustainable activities to prosper with the support of present days disregarded and burned out ICT specialists.

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