

# Trends that will Shape the Professions of the Future Information Society

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In this paper we discuss the trends in present society that will have the most important influence in shaping future jobs, with an emphasis on issues related to sustainable development and an information society. We point out that based on the requirements of educated end-users, companies will have to follow the principles of sustainable development and social responsibility. In future, due to technical development, natural resources, environmental issues and demographical trends in the developed western world, the most attractive jobs will be in high technology, health and medical care, as well as the pleasure and free time industry. The most important sectors will be informatics and telecommunication, logistics, safety, healthcare and life-long education.

**Keywords:** information society, knowledge management, end-user, sustainable development, socially responsible companies, jobs of the future

## 1 Introduction

In a dynamic, modern society, everything (companies, people, relations, products, environment etc.) is under constant change. Professions also have a life cycle and are constantly evolving and it is interesting to research and recognize the trends that shape them. When thinking about which professions will be needed in the future, one must analyse the forces which influence the emergence or dying out of professions and what the present trends are in the global economy. This is undertaken not only to enable planning for personal professional careers but also for planning educational programmes ensuring a strong basis for upcoming generations to solve problems of the future world.

Throughout human history different professions have been emerging and dying out due to the level of technical knowledge and ownership. In the times of old Egypt celebrating the greatness of Pharaoh and Gods, there was a very important and well appreciated job of a scribe, who had the knowledge to write down the quantities of crops. Even today this profession still exists in countries with low literacy but will surely die out with the introduction of educational programmes. Important changes have occurred in the time of industrial revolution and with the beginning of mass production. The need for new jobs, such as warehousemen and transporters emerged. In the times of rapid development of telecommunications, some jobs, for example a telephone operator, have already been replaced by technical solutions.

As discussed (Clark, 2007) some traditional jobs still remain popular and in need despite constant changes and will never be replaced by new technologies. Such jobs include diamond cutters and jewellers, hair dressers, baby sitters and medical doctors. According to present trends some jobs, including cashiers at shopping malls, film developers, CD sellers and fire fighter pilots, are likely to die out in the near future.

The rapid development of production companies that are based on excessive use of natural resources and not on a rational use of products, lead to immense ecological and developmental problems. The issue of sustainable development is discussed in the paper of the World commission for environment and development (Bruntland, 1987). This paper pointed out that sustainable development is not only a basis for further development but also as the only chance for survival. Among others, the direct connection between economy and the environment is pointed out and that sustainable development means meeting the needs of the present generation without endangering any future generations. As discussed in the paper (Potočan and Mulej, 2007) the UNO in 2002 accepted sustainable development as the best possible basis for operation of all parts of society.

Today the world is extremely complex. It is clear that only partial problem solving, and not considering all aspects, usually leads to even bigger problems. One of the characteristics of the modern world is the immense quantity of accessible but dispersed pieces of information from which it is extremely difficult to create a big picture, but this important to be able to understand the processes

in all their complexity. This is needed when accepting the decisions that will not be soon characterized as partial short-sighted or even completely wrong. (Urbančič et al., 2006; Urbančič 2007). Possibilities offered by computer technology must be used not only for fast access to information but also for their effective analysis and use.

This paper is organized as follows. First, we present and discuss the major trends in modern economy and society that will influence the evolution of professions: from well recognised needs of educated and environmentally aware end-users, through automation, globalisation and informatisation to sustainable development and socially responsible companies. In Section 3 the need for life-long education is discussed, along with prospective industries and the most promising jobs. The most important issues are summarised in the conclusion.

## 2 Trends in Economy and Society

### 2.1 Needs of the end-user

All activities of companies are directed towards meeting and satisfying the needs of end-users, offering them products or services. End-users in accordance with their level of awareness as well as their material and social needs, expect products and services that offer greater security, comfort, quality time, use of energy saving devices, access to telecommunications and environmental friendliness.

In the developed economy, the increasing ecological awareness of end-users will increase the pressure on companies to offer more and more sophisticated products and services that will meet the expectations of consumers. In the international economy the war for resources is becoming increasingly obvious and brutal (for example, putting flags in the ocean floor where oil or gas is to be exploited in the future, Greenland, poles) where military forces are used to obtain or protect influence over natural resources. Due to the concentration of capital and therefore influence in the hands of a minority, great differences in society occur and civil groups are taking over the initiative to change processes in society. In the future the feeling of security and commodity will become progressively more important and people will search for safe shelter in the privacy of their own homes. Modern telecommunication technology will be accessible to more people and will enable them to reach all kinds of up-to-date information from their homes. This will also result in a change of working habits, with more people able to work from home. Consequently, the organization and functioning of companies will be influenced. Since people will spend more time at home, good quality catering, cleaning and health care services will be needed.

Modern economy will have to follow these trends and take into account that the products and services most demanded (Robinson, 2006) will be those based on the needs of end-users:

- rational time spending,
- reducing costs,

- ease of use,
- improved safety,
- greater reliability,
- environmental friendliness.

The demands of the educated end-users will be rational and in accordance with sustainable development. Such end-users will still be a minority for a long time, but nevertheless they will have influence through their big spending potential. The large evolving markets of China and Asia will of course initially accept a consuming mentality. In the long term, a consuming society has no chance of survival. The cost of producing enormous quantities of waste will have to be recognised and paid, hopefully before critical degradation of our natural environment.

### 2.2 Automation, globalisation, informatisation

Three major trends shape and characterise the modern economy: automatisisation, globalisation and informatisation.

- automation: introducing high technology production lines reduces the demand for a highly educated labour force in well developed western countries, one of the consequences is also moving old production lines into regions with lower labour costs,
- globalisation: due to multinational companies producing, distributing and offering their products all over the world (aiming also to exploit natural resources worldwide, lower production costs, and increase their profits) the world has really become one through logistic and communication channels. The consequence of moving services (due to English language as lingua franca all kind of services can be offered globally), is as follows,
- informatisation: the above mentioned trends are possible only through the support and extensive use of information and communication technology that enables permanent access to almost any part of the developed world. The internet plays a vital role in connecting individuals all over the world and exchange of information.

Related issues include demography, stage of development of an economy, educational system, ability of transferring knowledge into economy, safety, culture and religion of certain geographical regions. The aging population, technological development, telecommunications, energetic and environmental issues are therefore the most important topics that companies must incorporate in their strategic plans.

### 2.3 Socially responsible companies and sustainable development

Due to their capital and the influence on society they have through political channels, the multinational companies bare a great part of the responsibility for accepting and following the principles of sustainable development.

Unfortunately nowadays our economies face challenges through the excessive use of natural resources, littering the environment, endangering biotic diversity. Most companies today still think that it is enough to follow the legislation and market rules and do not accept the concept that they must, in addition to the needs of the company, meet the needs of the environment: both natural and social. Nevertheless, there are already companies that have accepted the concept of sustainable development and they understand that they must bear part of the responsibility for the development of society and actively contribute to reaching a common goal.

Research has shown (Kralj, 1999) that there is a direct correlation between the socially responsible behaviour of companies and their success as their better reputation contributes to better business results. The concept of socially responsible companies is very narrowly connected with the concept of sustainable development. Environmental issues must become part of the strategic plan, incorporated in the very heart of a company's value system.

If owners of the capital will not recognise the need to give up part of their extra profits in favour of preserving natural resources and the environment, in more distant future the environmental conditions will become more severe. Radical changes in ecosystems can occur, and regions where the majority of food is produced could be severely damaged. If consensus on the broadest international scale is not reached, the excessive use of natural resources could lead to a struggle for pure physical survival.

### 3 Educating for the Future

In an extremely fast changing environment the only way to stay competitive, have the chance of being successful and in the most extreme situations, to be able to survive, is to accept the life-long learning concept.

As Bauman points out in the chapter titled *Learning to Walk on Quicksand* (Bauman, 2005), in a liquid modern setting, for education and learning to be of any use, it must be continuous and indeed life-long. No other kind of education and/or learning is conceivable; the "formation" of selves or personalities is unthinkable in any fashion other than that of an outgoing and perpetually unfinished reformation. Bauman also points out that the consumer is the enemy of the citizen, and stresses that over the "developed" and affluent part of the planet, signs abound of people turning their backs on politics, of growing political apathy and a loss of interest in the running of the political process is becoming more obvious. It is becoming increasingly clear that democratic politics cannot survive for long in the face of citizen's passivity arising from political ignorance and indifference and that citizen's freedoms are not properties acquired once and for all; such properties are not secure once they are locked in private safes. They are planted and rooted in socio-political soil and it needs to be fertilised daily as it will dry out and crumble if not attended to day in, day out by the informed actions of a

knowledgeable and committed public. It is not only the technical skills that need to be continually refreshed and not only the job-focused education that needs to be life-long. The same is required, and with still greater urgency, by education in citizenship. Bauman concludes the discussion with the following thought: "We need lifelong education to give us choice. But we need it even more to salvage the conditions that make choice available and within our power."

For life long-learning, as pointed out by authors (Awad and Ghazir, 2003), the accessibility of information and communication technology is of utmost importance and therefore it will be absolutely necessary for workers in all professions to be able to use it. The educational system must teach people "how to learn", how to generate, seek, use and transfer knowledge.

Regarding the development of the new technologies, demographical trends, safety issues and the demanding and educated end-user, the most promising jobs will be in the following sectors:

- safety and comfort of the home,
- healthy life style,
- care of senior citizens,
- pleasure and free time,
- craftsmanship
- informatics and telecommunication,
- transport and logistics.

Projections (Collste et al., 2006) show that in 2012, in the developed Western World, 7 out of 10 new employments will be in the health and care sector as the baby boom generation reaches their senior stage of life. Those jobs cannot be replaced by technology or automation, but can be greatly supported by information and communication technologies. It is expected that for 8 out of 10 new employments in that time, a level of higher education will be required.

Swiss research institute Prognos has published research analysing those jobs which will be most sought until the year 2020. The following jobs were ranked very highly (after the research of Prognos Institute published in Focus, 2004, [www.focus.de/finanzen](http://www.focus.de/finanzen)):

- industrial engineer,
- hospital manager,
- air flight control,
- IT project manager,
- re-insurance specialist,
- auditor,
- legal advisor,
- logistics expert,
- programmer, software developer,
- system administrator,
- aircraft engineer,
- mechanical engineer.

The list of prospective jobs also includes: truck driver, medical nurse, sustainable development consultant, experts for holography, database managers, dental assistants, physiotherapists, personal trainers, home assistants, caterers, and eco-layers.

Some analyses attempt to foresee the development of entirely new professions based on new technologies, environmental demands and demographic trends. Forbes magazine discusses the following new jobs as something becoming very normal in the future:

- quarantine specialist,
- specialist for managing submerged cities and coastal areas,
- mechanic for home robots,
- animal sitter,
- space excursions guide,
- manager of hydrogen power stations.

## 4 Conclusion

As the research has shown (Potočan and Mulej, 2007) companies need radical change and innovative management style, including the ethics and actions of all participants to accept and follow the principles of sustainable development. The companies will have to find a new balance between their own interests and the interests of the community.

Sustainable development should be studied, researched and taught at universities and research institutions. Answers to open questions should be found and transferred into the economy. Universities and researchers can contribute by publishing findings, influencing the new generations of managers who will understand the importance of the principles of sustainable development and incorporate them in everyday activities of the economy.

It is important for long term quality that these principles are accepted worldwide and incorporated in global values. A very important role is played by the education institutions at all levels, and researchers who create new knowledge should not forget the importance of information and communication technology in the process of creating and spreading new knowledge.

Therefore, it is of utmost importance that experts of all professions are educated to develop, use and spread knowledge into all pores of society. Besides the knowledge, a crucial role in the future will be played by personal engagement, focus and commitment of professionals.

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**Trendi, ki bodo oblikovali poklice v informacijski družbi prihodnosti**

V članku obravnavamo trende, ki imajo v sodobni družbi najpomembnejši vpliv na razvoj poklicev v prihodnosti, s poudarkom na vsebinah, povezanih s trajnostnim razvojem in informacijsko družbo. Ugotavljamo, da bodo zaradi zahtev osveščenih končnih uporabnikov podjetja pri svojem poslovanju prisiljena upoštevati načela trajnostnega razvoja in družbene odgovornosti, v prihodnosti pa bodo zaradi napredka tehnologije, usihanja razpoložljivih naravnih virov, okoljskih zahtev in demografskih trendov v razvitem zahodnem svetu, najbolj iskani poklici v visoki tehnologiji, negi in zdravstvu ter zabavni industriji. Pomembni sektorji v gospodarstvu pa bodo informatika in telekomunikacije, logistika, varnost in udobje, zdravstvo in izobraževanje.

**Ključne besede:** informacijska družba, upravljanje z znanjem, končni uporabnik, trajnostni razvoj, družbeno odgovorna podjetja, poklici prihodnosti