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# Effects of Technological Applications on Human Resources

## ABSTRACT

There are two tasks the human resources are entrusted with. The first one is to increase productivity, and the second is to increase qualification of professional life. At the beginning of 1990s, personnel management left its duty to the human resources management. The human factor gains a strategic importance as the result of developments in communication and information technologies. Human resources started to develop strategies and plans for to reach the suitable target of organisation in a short way using the information technologies. Information technologies and computer usage caused achievement and comfort in every sphere such as reduction of workload, increase the power of competing . Information systems create a data base in the information technologies in human resources management to organise human resources and to have proper and effective decisions being possible by using this data base and information systems. In the sphere of human resources management it has affected directly, the structural and functional qualifications of the organisations, it users in diversity in the production of goods/services. These developments have caused a lot of jobs and professions to disappear, on one hand, and on the other hand, they have caused new professions to appear.

**Key words:** *human resources, strategies, plans, data base , information technologies and information systems.*

## 1. Introduction

Definition of Human Resources: It is one of the resources any firm or organisation is using in order to create product or services. In other words, it is the name of a number of processes that arrange employee-employer relations. When we coin the term Human Resource Management, it concerns with gaining qualified and motivated employees in quest for sustainable superiority in market competition. Thanks to the fusion of Human Resources and information technology, it's used with a very considerable progress in time saving and faster decision-making. Technology has opened up new horizons in Human Resources.

In conclusion, it's necessary to facilitate general working conditions and to ameliorate economic conditions in order to maximize productivity and increase quality of work life, besides human-centeredness, valuing of people, facilitation of working conditions, and proper motivation of employees, identification of staff with organization and creation of peaceful environment.

## 2. Transition Process From Personnel Management To Human Resources

Activities in organizations pertaining to their personnel started in the 1930s. The task of personnel units at that time was to keep registers on the firm's employees. After the Second World War the number of researches on personnel increased. When looking at 1960s and 1970s it's possible to see changes in the sphere of personnel management, and that ability and specialization came to be expected from a good personnel manager. Nevertheless, up until the 1960s the area of personnel management was within the traditional framework of organization management. (Buluç, 1998) From the beginning of 1990s onwards, the term Personnel Management was replaced by Human Resources Management.

There are two important differences between Human Resources Management and Personnel Management.

- Human Resources Management is focused on people.
- It includes attempts to expand the terms of organization environment and circle.

It comes as of no surprise that we can reach the standard of our epoch called Information Age, only with well-educated people and well-managed organizations. (Buluç, 1998)

### 2. 1 Definition of Human Resources

It can be defined as a discipline consisting of activities in development of strategies and policies that help organizations to create talented, loyal and well-motivated workforce in its quest of sustainable supremacy in the market competition.

### 2. 2. Causes of The Need for Human Resources Management:

An efficient workforce is a prerequisite to formation and development of organizations which plays an important role in societies' well-being and in fulfilment off social responsibilities by them. Organizations with the necessary workforce need to own human capital which is the most important component of their capital, too. Organizations with capital and human force possibly gain upper hand in competitive environment; create differences; gain a larger share from the market; and increase their productivity and quality of their work, when they fulfil such function as development of their products. In order to do so, it's necessary to use human resources with utmost efficiency and, as well, to gain from its developments in information and talents. It concentrates on human resource management and control for to enable the organization to reach its strategic targets.

### 2. 3 Objective of Human Resources:

Human resources Management has two main objectives: increasing productivity and raising quality of work environment.

Functions that constitute Human Resources Management are: planning, staffing, valuing, prizing, training, developing, industrial relations. Studies under the category of each functions point to the fact that Human Resources Management reaches its objectives as long as they create positive results in terms of productivity and quality of work life. Otherwise, human resources failed in their objectives and became unsuccessful.

It's highly impossible for a human resources not to reach its targeted vision which accepts as its basic motto "Making investment to the person who provides a proper human input"; and which offers to its employees opportunities for development by continuously observing workforce productivity, developing the firm's vision into its employees' vision and forming within the firm a rising personnel with dreams about better future.

To give you an example: even before centuries those individuals, responsible for organizing, leading, and managing, faced a need to, however unsystematically and ad hoc, fulfil the tasks of education, motivation, leadership, and prizing. Most of them resulted from military, economic and social crisis. From another angle, the movement of scientific management and developments in industrial psychology contributed to development of today's human resources management perspective.

On one hand, human resources management has a strategic character, and on the other hand, it includes traditional functions. Therefore, human resources function has become more significant within the organizational structure.

### **3. Human Resources Planning**

Human resources planning, a component of human resources management includes a number of subparts. To mention briefly, they are:

- Human resources planning, the task of staffing
- Evaluation of applications for developing sources of supply
- Employment decisions and suggestions
- Employing and orientation
- Promotion-transfer and lay off.

Human resources planning which is an integrated part of the firm's strategic planning process puts forward the analysis of today's and future workforce needs

There are two main purposes in the Human resources planning.

- Employing staff at the optimum level, and not to have personnel more or less than needed. Otherwise, latent unemployment emerges and labour expenses rise.
- Having maximum benefit from employees enables the firm to use its human resources in a way so as to gain high performance

**We can enlist the reasons for human resources planning in what follows:**

- Internal changes and constraints in the area of human resources
- Training and development of the existing personnel
- Timely announcement of empty vacant positions
- Supply and employment of new employees
- Estimation of labour expenses
- Adapting to the fast changing conditions in the society
- Answering technological advances and market conditions
- Behaving in accordance with legal arrangements, law and even court decisions

Human resources needs are to be properly, efficiently and carefully planned. Otherwise, it becomes impossible systematically accord to organisations' expected periodic work deficit to its internal and external workforce supply; as a result the organisation cannot catch its vision. All efforts and attempts become useless. Most importantly, it causes lose of time.

Unfortunately, such kind of situation has no recompense. Taking these risks into account, human resources should be envisioned and planned in details. Moreover, the mission formed as result of careful planning should walk step by step towards the determined vision, to reach all targets one by one and to achieve the vision.

Talentless managers of Human Resources Management occupy today's general managers as one of their most important problems. Clough Limited Company's president, Horold Clough, asserts about it: 'we believe that a firm's future value and success depends on its people's quality and intellectual ability.' (Bingöl, 2013) Today the one and the only source of competitive superiority is no longer raw materials, capital and technology, but its talent.

Talent is the most critical qualification which is looking for in those individuals who are to work as managers in the human resources department. The human resources manager should be equipped enough to make short-, middle- and long-term decisions in accordance with the organization's vision with the aid of his/her experience and reasoning. His/her talent is the cause of the organization's ultimate success.

The aim of Human resources planning is to make a right decision in a right place at the time and to make available the necessary and the most qualified workforce. Because human resources activities are hard and complicated, the planner's decision depends on his/her own knowledge and quality and quantity of this knowledge.

At this point, we cannot pass without underlining the following fact: the information technologies of human resources ensure the use of proper information in terms of quality and quantity. The information technologies of human resources contribute to selection and employment of new employees by employer, by attending a whole range of activities from filling out forms to evaluation of curriculum vitae and their entry into the system. They contribute significantly to selection of candidates to fill vacant positions

### **4. Data, Information Technologies and Systems Related to Human Resources**

The use of computer, which makes one of human resources information technologies, has increased the firm's quality and decreased workload. It's also enabled organisations to gain power in international business arena. In the sphere of human resources information technologies reflect database. To put it differently, they reflect the totality phenomena, facts and principles that human mind can attain. It's a fact that has been grasped by observation. (Bingöl, 2013)

#### **4.1. Data in Human Resources**

It is a raw information or informational raw material that can be analysed and used for advanced operations. It attains the status of information when used to meet certain needs. Information is turned into results by processing data in accordance with an end.

It includes the process in which information gained inner environment and outside are combined to the decision making process in the human resources department. Informational environments whereby information is organized, systematized, shared and combined are named as "information systems".

Application of these information technologies helps to carry out all activities of human resources management, make decisions related to these activities and make plans; corollary, human resources information system attracts attention, and human resources managers can reach faster and more efficient decisions. (Bingöl, 2013)

Human resources information systems constitute approaches organised to measure and evaluate the success of human resources and activities. Evaluation systems are used to determine whether human resources specialists and others efficiently use data and information, and whether human resources activities are efficiently carried out.

#### **4.2. Human Resources Information Technologies**

They regularly provide information necessary for making decision by managers, for planning, controlling and evaluating their activities, and for registration and reporting. Managers, thanks to these systems, can make faster and more efficient decisions. They also have an opportunity to get healthier feedback.

Human resources information systems as a subsystem of management information systems fulfil a unique function. They are systems used in the Information Age to supply, analyze, use, examine and distribute information for increasing the efficiency of human resources.

Human resources information systems are defined as a combination of computer application of databases and equipment and software necessary for collection, registration, storing, management, organisation and operating in human resources. (Bingöl, 2013)

##### **4. 2. 1 Information System in Human Resources**

**Human Resources Information System is a model which includes 8 components:**

- Strategic integration
- Estimation and planning
- Organisational vision
- Staff development
- Communication and integration
- Registers and compatibility
- Human resources analysis
- Information management

Elements we listed above are sharing 3 basic characteristics:

- Each component affects the other synergically.
- The model is complicated to include all components of human resources information systems.
- Components should be made compatible with the organisation's culture, industry and strategy.

##### **4.3. Human Resources Information Systems and Their Basic Activities**

Management of human resources requires a high volume of data and information. In collecting, storing, preserving, evaluating and sharing these data, information Technologies or informatique are used today. We observe a fastened transition from human resources information system where all information is insecurely kept in files and changes are manually typed, to computer-based one. It causes an over-trust in computer and information technologies.

We know that human resources information systems aren't limited with computer-based human resources software, but it includes employees, policies, data, forms and different perspectives.

In fact, computer technologies alone don't qualify for successful human resources information system. Nevertheless, computer-based information system serves human resources application by turning them interoperable. (Bingöl, 2013)

## **5. Applications and Management of Information Systems**

**5.1. Technology:** It's hard to estimate advancements in technology. From this vantage point the fact that technological advances find areas of application in business complicates the human resources planning. As new technologies, on one hand, cut down demand for workforce in such units as accounting, on the other hand, they increase it in some others (*bilgi işlem*). Intensive application of information systems to human resources causes layoffs. This situation will quantitatively affect human resources planning. It becomes necessary for the firm or human resources to put in use a new technological advance. A new technology in use will increase the demand for employees and, thus, qualitatively affect human resources planning. (Dolgun, 2010)

Internet has facilitated searching reaching information on an unprecedented basis; it also made available such opportunities as to reach firms and organizations worldwide and their activities, planning and programming. Information gained by this way and later evaluated in human resources open a way for new decisions and, thus, helps time saving.

Before the revolution in information technologies, in the area electronics constituents called triodes were used. Besides, with analogue systems being replaced by the systems based on quantitative technology, micro operators are preferred over software previously associated with computer. They started to be highly used particularly in management and human resources. As mathematical methods previously used in designing analogue systems left their place to computer-based quantitative solution methods, as a continuation of this development, a theory quantitative signal processing showed the important progress and singularly became the only tool for problem solving. Consequently, computer and communication technologies that have been developed as two separate disciplines, started to combine under the rubric of "Information Technologies".

### **5. 2 Definition of Information Technologies**

We need to take a look on analogue and quantitative technologies for to understand the information technologies.

#### **5.2.1. Analogue Technologies**

Before the Industrial Revolution there were few areas of specialization. For example, a person who was interested in astronomy studies maths, and then chemistry and biology. At the point we reached each branch of science started specialization. New departments were estab-

lished. As a result, attempts to deter this trend of specialization and formation of disciplines have been aborted. Neither nature nor human thoughts are permanent and continuous in reality, so data are always studied and analyzed within certain time frames.

### 5.2.2. Quantitative Technologies

The method of finding the result by collecting data at certain time intervals, making additions on these numbers without defining is called a quantitative method. In 1980s the quantitative technology gained impetus and ushered in new perspectives to old problems. (Bingöl, 2013)

For example, ultrasound enabled us to collect data with methods like sound or infrared. "Information technologies" refer to the totality of technologies that automatically ensure with the aid of electronic optic, etc. the collection, study and storing of information and its transfer/retrieval to/from any certain place; as satellite technology has shattered the concept of distance in data collection activity.

### 5.3. Effects of Technology on Human Resources

Thanks to the information technologies defined above data collected in human resources can be developed into plans and determined target after being processed and translated into output. The success that follows will be due to active use of information technology. We can argue that information technologies occupy an important place in human resources, and even form the key function of human resources.

Without such functions as collection, processing and storing of data, there would have been no achievement in human resources. It would have been impossible to plan any program for the organization's future vision. Firms and organizations would have failed in reaching the targets determined by human resources. They wouldn't have the power to compete with domestic and international adversaries. Finally, we wouldn't be talking about managements and their human resource. We should accept the fact that all of these and similar achievements became possible thanks to information technologies.

The storing and preservation of the collected and processed data is of great importance for human resources. Management or organisation can get hold of previously gathered information and data (and other elements displaying informational quality); building up new findings and data on them; and do planning and programming on this new foundation. From a certain viewpoint, the stored information plays the role of a management's locomotive. Information technologies, as we've emphasized so far, are key to human resources.

### 5.4. Expected Benefits from Information Technologies

Success depends on proper use of information technologies. Any individual will continuously be trained in the context of human resources and he/she will become qualified as looked for, popular workforce. Automation of production, trade and all sorts of activities will revitalize the whole society. As a consequence, any individual will have a heightened creativity and go beyond the domestic markets, searching for jobs and job opportunities in the world markets. A country full of productive individuals will sustain a lively economy. A country with a strong economy will witness progress in as diverse as areas as GPA levels, business relations with foreign countries, and its competitive force vis-à-vis surrounding neighbours.

The proper and efficient use of information technologies increase productivity, whereas it's improper and ignorant may turn our environment into a grave of junk information technologies. TV broadcasts for distant training in Turkey remain limited due to a lack of interactive communication. A model of education based on interactive use of computers can easily eradicate such limitations. From the pret-a-porter sector to car production, labour-intensive and design-based production industries increasingly turn into computer-supported and robot-based ones. (Ceyhun & Çağlayan, 1997)

In consequence, today's progress in various industries and sectors foreshadow a future society where technology will decrease the demand for human labour down to the level of nothing and over-increase the supply of qualified and overqualified workforce.

### 5.5. Technology From the Perspective of Human Resources

Fast advancing technology resulted in changes in human resources management. It has a direct effect on production of goods and services. It, in addition, brings about diversification in production of goods and services. These developments cause the disappearance of many jobs and occupations; reversely, they create new job opportunities and occupations.

The terms "new technology, advance technology, micro technology and information, and technology" are used interchangeably today. Products and goods that we couldn't have imagined a few years ago are being mass-produced now. Consequently, tasks and responsibilities of all managers both increase and alter.

Contemporary technological developments and the resulting new jobs and occupations require a qualified labour force. It's not always easy to acquire the labour force capable of doing these new jobs, which considerably affects human resources management. (Ceyhun & Çağlayan, 1997)

From the viewpoint of human resources management, technology and process of organisational changes it ushers in imply important changes in organisational motivation and arrangement of workforce. Technology introduces radical changes into human resources management. We should also emphasize that it's actively used in formation of human resources management information systems.

Computer technology used for efficient management of human resources includes two elements;

#### 5.5.1. Computer Equipment:

Such appliances as printers, disc drivers, monitors, scanners, and keyboards. Main computers are of lesser importance today. Instead, mini computers and their ability to develop local networks lessen the organization's workload. Laptops make more data and information available and usable to greater number of people.

#### 5.2. Computer Software:

Include program instructions for software. Human resources managers and general managers of organizations can achieve higher number of and more important tasks thanks to the power of contemporary equipment and software.

## Conclusion

The transition from industrial society – which has already undergone a transition from personnel/staff management to human resources – to information society and modern technological advances have facilitated the development of human resources information systems. Human resources have developed in parallel to the progress in industry and manufacture. As a function of tendency to reform them, occupational organizations have started giving more emphasis on human resources management.

In a nutshell, human resources make a combined approach to workforce management. Human resources management takes the personnel as a human resource and capital rather than an element of expense. Managements/organisations should have the necessary elasticity in order to adapt to fast changing and developing conditions of work environment. It can be achieved thanks to three components.

- Developing easily adaptable human resources systems
- Creating a capital pool replete with a labour force with high ranges of abilities
- Increasing the behavioural elasticity between employees

It's become a must for organisations to develop plans and approaches in accordance with their strategic aims. Human resources planning explain when and where to find an amount of workforce displaying certain abilities and qualifications; in doing so, it taps into two sources.

- Inner environment
- Outer environment

The main aim of the workforce search is to select and employ the most qualified candidates.

The main of human resources information systems helps both the human resources manager and the line managers decide. Therefore, human resources information systems should be able to reproduce any information and data related to the organisation's strategic aims and targets. Technology gives to departments of human resources opportunities to eliminate expenses and to develop strategic partnership. Equipment and software are two components of computer technology.

Database of human resources information systems acquires, stores and evaluates the abovementioned raw data. Then, it translates the collected raw data into information to be reported. Human resources management information systems have important functions in all applications and areas.

They facilitate proper decision making, such activities as human resources planning, personnel acquirement, training and development, career management, performance evaluation, wage management, waging based on performance.

The Technology and information systems quickly collect human resources, it will be developed in parallel. Information technology revolution the tube without any location when using the analogue digital technology such as left by the previous software to computer such as location-specific technologies, such as micro-processors. In 2013-2014 and 2015 the following tools, previously not frequently used as used today, became a part of modern life: e-mail, the brand mobile phones, e-commerce, e-mail, facebook, twitter, skype, internet, google, google chrome, it is impossible to abort all this and to go back to usual communication tools. The human resources in both the direction, as well as in decision-compared with the previous years, was more and more moving forward and modernized.

2023 – 2030 and next years when it come to the location of all communication tools that we have mentioned above, perhaps much more quickly moving the beam to eliminate the concept of time will switch to, that is to say : the French physicist Alain aspect in 1980s, it worked on since the beginning of quantum physics (study on Irradiation), has made a drastic change in the world of Science. Here, the goal is to save time, and more importantly, the concept of Speed has been.

How Alain aspect has achieved tangible successes in the work done, although it is continuing its efforts. The rule of quantum physics is successful when the air, land and sea transport to lose the importance of time and speed, will be achieved a great success in will be saved in a serious way. Also all these developments from the perspective of human resources Communication, Information sharing, accordingly, decision-making, save time and decrease in costs, all such issues now rather than later will be gone. This technology in terms of human resources, is an expression of degree of importance.

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