

Knowledge and management knowledge in road transport organization

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Abstract. The scientific work presents a concrete research carried out by the authors in order to implement some concepts of a technical and economic nature so that the readers can become aware of a certain way of presenting the problems regarding knowledge and management knowledge in road transport organizations. It proposes a study, carried out from a managerial point of view with engineering nuances, so that the concept of sustainable development in the addressed field can be viewed in a global context. The work as a whole is intended to be a theoretical approach with correlations in the field of engineering and management, essentially aiming at the sustainable development of road transport. Finally, some conclusions and further research directions in this direction are presented.

Keywords: *knowledge, management, organization, road transport, implementation, electromobility.*

1. Introduction

Since his appearance on planet Earth, man has sought to develop his cognitive abilities to act, create and decide what is good and what is bad for himself and those around him. He created ideas and added value in the field of knowledge by developing his wisdom. Wisdom defines man's superior ability to understand and judge things. It is represented by the human ability to think and act by using acquired knowledge, experience, understanding, common sense. It also represents the way in which people understand cause-effect relationships in a specific "insight" context [1], manifested by moderation, prudence, temperance. All these aspects are determined by experience and foresight. Wisdom and acquired knowledge are strongly linked, but by always learning it gained new understandings which, in turn, created a new cycle of learning. The wisdom is part of qualities of impartial judgment, of compassion, of self-knowledge and experience, of non-attachment [2, pp. 1254-1266], of qualities such as ethics and benevolence [3, pp. 215-241], [4, pp. 178-293]. Starting from this idea, the organizations are increasingly interested in accumulating knowledge, which are seen as resources necessary for survival and training in an environment based on the criterion of economic efficiency. This led to their recognition of the importance of knowledge management in order to become competitive on the market. Within the society in which they operate, the entities with an organizational structure create material goods or services necessary for people's daily living. The organization exists and functions through the association of a group of people who have common conceptions, concerns and ideals, united, in accordance with the provisions of a regulation or a statute, in order to carry out organized activities. Therefore, the organization includes a group of people who

have a baggage of knowledge and who work together to achieve common goals, with the aim of obtaining a product intended for the client [5, p. 1]. The concept of knowledge-based organization appeared for the first time between the years 1984 - 1988 and recorded, after this period, different phases of development. Nowadays, road transport organizations, communication ways and transport systems have become so important that they are an integral part of the everyday life. Through the development of the production forces, the social division of labor increased, and the movement of people and goods determined a rapid development of this type of organization, so that today they represent an independent entity. The road transport organization differs from all the other organizations by the specifics of the activities carried out and achieves remarkable results if it knows how to capitalize on its knowledge and if it relies more on the intellectual assets and knowledge held by employees than if it relies on the material assets. In an organization, regardless of its profile, it may have the highest level of endowments, if the existing staff does not value their knowledge to use the technology in the endowment, that organization functions with syncope or can not function. That is why the creation of knowledge within the organization is essential, it is in fact the greatest capability of a company, especially because it leads to innovation [6]. In our view, knowledge management in the field of road transport represents a branch of managerial knowledge that is closely concerned with the implementation of knowledge actions. These actions include organizing, blocking, filtering, collecting, storing, sharing, disseminating and the use of knowledge objects, which are identified as information, data, experiences, evaluations, analyzes or initiatives *in the addressed field*.

2. Knowledge and the knowledge typology

Drucker said about organizations that, nowadays, they started to rely more and more on intellectual assets and less on material ones [7].

Starting from these statements, he believes that the knowledge management systems have become the foundation for building and supporting the intellectual capital. Their use is necessary to create economic value for the organization [7].

The success of a knowledge-based organization lies in the optimal utilization of employee knowledge that is acquired while they are gaining experience in the workplace they have, but can be lost if they leave or are removed from the organization. This is where knowledge-based management must intervene, which can catalog and at the same time correctly manage the knowledge of the staff, even after some employees leave the organization.

In our view, *knowledge* represents the totality of information that the employees of an organization possess, have and are acquired as a result of a learning and education process. They are located according to figure 1, at a higher level than information. They come from information when the user has the ability to understand the patterns based on the information. They can be used immediately or in the future.

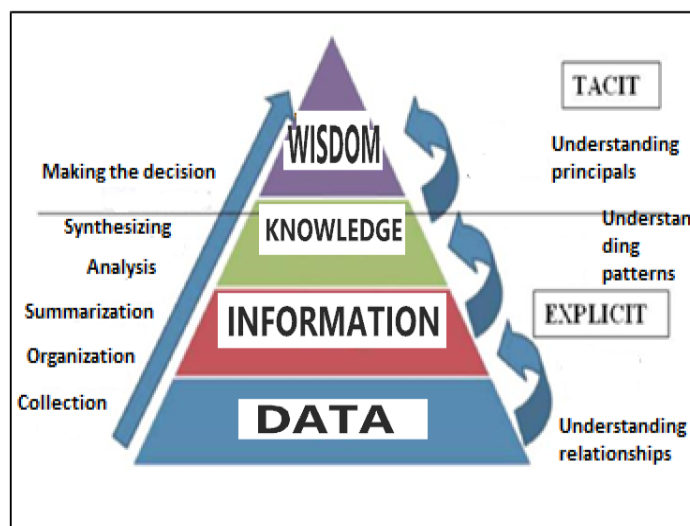


Figure 1 Knowledge typology and the knowledge creation process [9, p. 172].

Many specialists argue that the top of the pyramid is occupied by the concept called *wisdom*, which represents the ultimate stage in the evolution of all other concepts.

It specifies the aspect related to the implementation within an organization of the tacit knowledge that brings the *know-how* (knowing *how*), which represents the most difficult objective to achieve, this type of knowledge can be measured and at the same time capitalized when a decision can be made by an individual, then observing the consequences. This decision is represented by the ability of people to act in a certain way depending on what happens in the environment in which they carry out their activity, of course if the possible results of the decisions taken are taken into account. To be successful in a business, it sometimes requires a lot of intelligence and experience in a certain field on the part of individuals, to transpose the information they have into knowledge and decisions oriented towards success.

The authors Davis and Botkin stated that the essence of knowledge is actually the ability to learn from the learned [8, pp. 165-170].

For the correct understanding of the typology and knowledge management, according to the data presented in figure 1, we carry out an analysis and further define the concepts of knowledge, information and data, to clearly distinguish what is the difference between them:

- Data represents the properties held by goods. They can come from some context and have no particular meaning taken as such, but when they can fit into that context, or have a certain meaning, sometimes they even become information. We identify them at the base of the pyramid.
- The information represent the accumulation of some data in a logical order, are identified in the section immediately above the data and have a smaller section than the data. They come from data that we can use in a useful way.
- *Knowledge represents the totality* of information that the employees of an organization possess, have and are acquired following a learning and education process. These are located at a higher level than information. They come from information when the user that uses it has the ability to understand the patterns based on information. They can be used immediately or in the future.

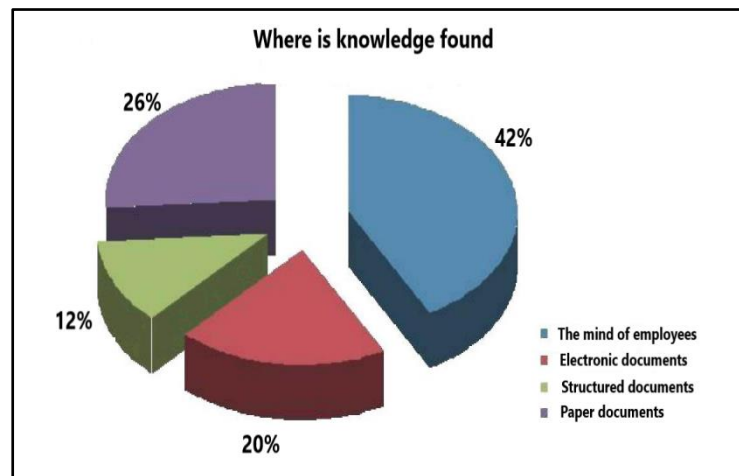


Figure 2 The place where knowledge is found in an organization [9, p. 173].

Figure 2 shows the place where knowledge is found within a knowledge-based organization, according to [9, p. 173].

It's considered that it is not always enough for an organization to have the necessary knowledge and be successful. It is necessary that the use of knowledge is directed to the needs and requirements of the customers.

3. The concept of knowledge management in road transport organizations

The concept of knowledge management in road transport organizations is premised on capturing the knowledge in the place where it is created, then disseminating it to the entire staff of the organization and finally, implementing it in the process of transporting goods or passengers. Knowledge management involves the dissemination of knowledge and the use of human capital with maximum efficiency, and this must be done when motivation, participation and sharing of knowledge are almost instinctive and are an integral part of the daily activities of the road transport organization at work.

Knowledge is also obtained from the experience of the members of the organization or from the experience of others [10].

In the specialized literature Ovidiu Nicolescu it is also shown, that knowledge must be implemented to fulfill the organization's purpose [10].

If the society of knowledge in the field of road transport is analyzed in a general sense, it can be stated that it represents the peak of the development of human society, in which the knowledge specific to the field of road transport is the last and major source of social strength, following other sources that have shaped the development of mankind namely, force manifested through violence and money representing wealth and richness. They say that without money you can't do much. With money you can buy anything. At the foundation of any road transport organization, among other resources, are financial resources. They constitute the starting point of any element in this field. Without these resources you cannot move the means of transport, in order to produce the money necessary for the continuous operation of the road transport organizations.

Many wonder if there is still a connection between the financial resources of a road transport organization and the knowledge resources possessed by the employees of that organization. However, it can be said that there is a great connection. It is certain that without financial resources you cannot organize meetings and staff training in this field. The body of knowledge in the field of human capital is also defining in the field of road transport.

In the field of road transport, the knowledge that the specialist in the field accumulates throughout their life and acquires and then masters, is divided into three large categories, namely:

- *Explicit* (which can be expressed by words and numbers, which can be easily communicated and distributed within the road transport organization, in the form of scientific formulas that are the basis of fuel and lubricant consumption calculations, economic-financial calculations, codified procedures regarding the activity of transporting goods or passengers, universal principles underlying the operation of road transport means, databases regarding the carried out transports, documents or files that can take a physical form, transport charts, etc.);
- *Tacit* (personal and difficult to formalize, take the form of knowledge, are dependent on the accumulated experience and the characteristics of each individual within the organization, internal, cannot be physically measured and are formed over time through the experience accumulated by managers at all levels, by the economic and administrative staff, by maintenance personnel, by coordinators or dispatchers, drivers, etc.);
- *Implicit* (stored in entities that depend on the practical context – vehicles and motor vehicles, technologies mounted and installed on vehicles or on motor vehicles, road transport planning and organization processes, the entire process of transport logistics, the process of maintenance and repairs of motor vehicles, etc.).

According to what was previously presented, regarding knowledge, within the road transport organization, it is still considered that from this point of view, the basis of any organization is represented by the three types of knowledge possessed by the human capital. Without the professional training of the existing personnel in its state of functions, the road transport organization cannot function. Of course, financial resources are the basis of professional training.

In any road transport organization there is a professional training plan. Today the technology in this field is evolving rapidly and organizations need to keep up with the technology. People have to be trained and upskilled in the field. Organizations allocate huge financial funds for these trainings and improvements. The money is transformed into the knowledge of the human capital, which is then applied by the people in the transportation process, and following this process the money returns to the organization again in the form of financial income which is then transformed into the profit of the organizations. In this way, added value is brought to the road transport organization, and it becomes prosperous in the road transport market. Indeed, transport services are perceived from this point of view as high consumers of energy and financial resources, but their value is included as a value that is added to the final price of the transported merchandise or goods. So in the end, the value of the

transport is paid by the consumers, that is, by us, who purchase the material good, the object moved by vehicles from the property of the road transport organizations.

For example, in the case of passenger transport, the value of the transport is given by the quality of the transport services, the comfort of the passengers and last but not least by the satisfaction of the individual who benefited from the respective transport service. Public transport passengers pay the price of a travel ticket. Most of the ticket price paid by the traveler goes to the account of the road transport organization. The transport organization, in turn, pays a salary to the driver who, in fact, through the exercise of the function, has put into value the knowledge acquired, those accumulated during the training course and those accumulated as a result of their professional training.

The knowledge society opens new horizons for the learning process, which does not need to take place only in educational institutions, but also within road transport organizations. In this context, each organization will become a school, within which each training method organized at this level is a current way of accumulating new knowledge. Here we can mention: staff training; working in teams; participation in planned training courses; participation in brainstorming; participation in advanced training courses; study or professional training visits; individual study, etc.

Drucker, said about organizations that nowadays they started to rely more and more on intellectual assets and less on material ones [7].

Starting from these statements, we agree with the author who believes that knowledge management systems have become the foundation for building and supporting intellectual capital (Drucker, 2002).

Drucker, also states that their use is necessary to create economic value for the organization [7].

In this sense, the knowledge possessed by the members of an organization allows them to improve their performance in terms of creating, storing, sharing and exploiting knowledge. Knowledge management in the field of road transport improves the performance and experience of groups within the projects that the organization runs and eliminates failures.

According to the teacher's statements Brătianu, knowledge management it is an exciting field of study through its spectrum of ideas and a fundamental pragmatic field in organizational management and leadership. The performance of any company directly depends on how this knowledge management was understood and implemented [11, p. 2].

4. The importance of knowledge management implementation in road transport organizations

Knowledge management is the link between operational and strategic management. It represents the main part of the managerial process in road transport organizations and we can say that it cannot replace classical management. We specify all this because operational management is time-dependent, it is specified from the annual calendar point of view, while strategic management is strictly about decisions that will be made in the future.

In his book the author Brătianu specify: therefore, more or less developed aspects of knowledge management are found in many organizations, but without gaining the necessary coherence to define a new managerial process. When we talk about the implementation of knowledge management, we refer to the organizations in which knowledge becomes dominant resources, and their management must constitute a specific, coherent field and with new responsibilities [11].

The implementation of knowledge management in a road transport organization is supported by the existing, up-to-date technology. This introduction, mostly, encounters some difficulties in implementation, bumping into the strong impact it has on people, the organization itself and management, down to the strategic level. Most of the time, the obstacles that appear are not of a technical nature but of a social, cultural and organizational nature. Knowledge management at the organizational level must be implemented taking into account certain aspects related to space and time when the essential notions specific to the organization of the transport activity changes essentially. The changes take place on: hierarchies (new hierarchies of subordination are created), networks (new connecting networks are created) and theories (they are reformulated in another form).

The difficulties that arise in the case of piloting a knowledge management system result from the multidisciplinary of the field, because it refers to people who possess knowledge and belong to

different organizations, cultures and contexts, it involves the formalization of knowledge (creation, validation, experience, formalization, protection, dissemination) and requires the mastery of sophisticated technologies [12].

Figure 3 shows the processes and conditions necessary to implement a knowledge management system, according [12, p. 28].

To implement a knowledge management system at the level of the road transport organization, it is necessary to act simultaneously on three levels. The first level is the technology that has the role of converter, catalyst of the change. The second level is strategy which has an important role in change. The third level is the very content of the project that generates the dynamics of change.

Roman says that the dynamics imprinted on the system will have to have three speeds of action: exemplification - to be able to demonstrate the concrete benefits, pedagogy - to learn how to do the coercion - to overcome the last resistances [12].

The implementation of knowledge management in a road transport organization has a strong impact on the organization, human capital, existing technology within the organization, management and strategy. This impact is primarily due to the change, and secondly to the way the methods are organized. It is based on the technological factor and the way it communicates at the level of the organization. It involves an accumulation of information of any nature.

In order to implement knowledge management at the level of any road transport organization, the following stages must be completed (text adapted after [12]): designing an action plan specific to the field of transport; formation of an implementation group consisting of managers and specialists in the field of transport at different levels of the organization, to present the main actions; the purchase of means of transport, equipment, installations, etc., ecological, efficient and modern, competitive on the competitive market; creation of a guide consisting of procedures, laws and regulations specific to the field of transport, resulting from organizational experience.

If these stages are taken into account, the expenses and investments necessary to implement a knowledge management project at the organization level are immediately recovered, of course if a large number of specialists and managers within the organization participate in the action.

After going through the previously presented stages, you must act in two directions at the same time, as follows: 1. Ensuring the necessary conditions; 2. Establishing the path to be followed for the implementation of knowledge management, by developing real projects related to each process.

According to the model proposed by some authors, the stages and factors that facilitate the creation of knowledge in an organization, a model that is very easily adapted to any road transport organization, which we present in the following, are [13], apud [12, p. 28]:

a. Stages of the knowledge creation

- Sharing tacit knowledge; 2. Creation of the concepts; 3. Justification of the concepts; 4. Creating an archetype; 5. Correlation of the levels.



Figure 3 The processes and conditions necessary to implement a knowledge management system [13] apud [12, p. 28].

b. Factors that facilitate the knowledge creation

1. Vision; 2. Autonomy; 3. Fluctuation; 4. Redundancy; 4. Diversity.

Knowledge in the addressed field is created by members of the road transport organizations, regardless of the hierarchical scale on which they are located, and knowledge management has the role of connecting all these members with them.

Roman that: in an organization everyone must participate in the creation and dissemination of the knowledge. This is not a domain reserved for gurus. Managers must understand that the tacit and explicit dimensions of the knowledge are not disjoint, but rather combine and complement each other. The development of knowledge is a specifically human activity and will only progress through dialogue [12, p. 30].

5. Knowledge management in the field of ecological road transports

Knowledge in the field of electromobility is directly defined by the emergence of new technologies in the field, requires new ways of thinking and perception of the people, and their management involves new concepts regarding the the automobile of the future.

In order to re-adapt to electromobility [14], people must learn to accumulate new knowledge in the field, because the new propulsion system, the electric motor, the electric charging stations, the electric accumulators, the electric car with its entire structure, the way it is driven, maintained or it is repaired, it represents a new field, a field in which people's knowledge we consider to be somewhat limited.

Knowledge management in the field of electromobility is the process of managing the knowledge, data and information held by a person or an organization about the electric automobile, its logistics and service infrastructure.

Knowing and knowledge have always been quite difficult to manage, and we believe that their management in the addressed field will improve considerably in the near future, as the classic car will lose its popularity, people's tenacity towards electromobility will diminish, and through information they will acquire the necessary knowledge to understand this field, they will know the place, the role and the benefits that the electric car brings them in the society and in their lives. Some authors and specialists argue that the knowledge management should not be done individually, but at a corporate level.

Knowledge has always been managed, but not in the way it is done today, and its management will probably improve in the near future, but it should not be done at individual level, but at corporate level [15, pp. 17-26].

However, my opinion is that in the case of knowledge in the field of electromobility and its management, the managing must be done both at individual, organizational and corporate level. All this is justified and I affirm that the field of electromobility is a newly emerging field, and the population and related organizations, through their reluctance and indifference, have little data, information and knowledge about the electric automobile, its logistics, maintenance and service infrastructure. Although the issue of reducing environmental pollution through the decarbonization of transport and the depletion of fossil fuels has been discussed and is still discussed, the European authorities have legislated the field of electromobility, but they have acted insufficiently and done little to make it as efficient as possible attractive and popular among people and road transport organizations.

Of course, electric vehicles are still unattractive and have a low popularity due to the autonomy of the electric batteries defined by their capacity, the charging time, the supply infrastructure (charging) which is quite deficient in some European countries, but also due to the purchase high price. But to provide services in the field of road transport, you need people trained in the field, who have the necessary knowledge to provide quality services to the customers, in order to meet their needs and requirements.

Some authors argue that: Knowledge-based theory approaches the organization as a market structure, whose resource is knowledge, the main activities focusing on their production, protection and registration in order to obtain economic performance [16, p. ii].

Today, the road transport has become an indispensable element for the human being, satisfying their needs for mobility, communication with their peers, perception, assimilation and satisfaction of the multitude of needs offered by the contemporary civilization. The humanity depends on mobility at this time, and the electric automobile does not currently live up to our demands the way the classic automobile does. It creates discomfort, delays, the insecurity of a fluent, fast and efficient transport. This is where the innovation in electric vehicle technology has to come in.

6. The definition of knowledge in correlation with the ecological - clean concepts

The identity of the words *ecological*, *ecology* derives from definitions such as *friendly to the environment*, *friend of nature*, in the sense of behaving and acting correctly, according to some rules of civilized conduct towards the flora, fauna, ecosystems and the habitats in which we live and coexist. If we think about the origin of the word, we will inevitably come across its meaning, which comes from the Greek language *oikos* - house and *logos* - science, that is, in free translation, the science of the house. In this sense, the house represents itself, the ecosystem or the habitat, in relation to the home, the village, the commune, the city in the country, the continent on the planet Earth, and science means knowledge. To know our house, to know everything about it.

An unwritten rule of the universe shows that a certain person belonging to a group of people, who live and coexist within an ecosystem, habitat, through the actions they undertake, bears the responsibility of each member of the respective ecosystem, habitat. This law is governed by the principle: *do unto others as you would have them do unto you*. In this case, the change must come from each of us, and if it also comes from the authorities of a state, then the ecosystem, the habitat will live and develop in perfect harmony, considering the fact that the ecology provides the premises a sustainable development of society and the natural environment in general, leading to the reduction or even the definitive elimination of the factors that create global warming.

But in order to define an ecosystem, an ecological habitat, everything must be done to preserve and keep it clean. An unpolluted environment is important for people's health and the well-being of the habitats in which we live. Cleanliness within the ecosystem means its health and that of the inhabitants who live together. The noise and vibrations produced by the road transport seriously affect the environment and human health. The changes that have occurred recently from a climate point of view, the thinning and destruction of the ozone layer, the destruction of biodiversity and the soil produce serious effects on the human health. Technology plays an important role in this case. The development, implementation and use of modern technologies in the field of electromobility will ensure an efficient, sustainable and durable mode of transport from the point of view of energy, environmental protection and human health.

A special role in the sustainable development of ecological auto transport is played by the sources from which the electric power comes from.

In this sense, our opinion regarding the sources of electrical energy is the following: to prove its total efficiency in the transport market, the ecological automobiles must be powered and use green energy, electricity from renewable sources. Otherwise, they are considered to be polluting similar to automobiles with classic engines. The green energy is a term that refers to renewable and non-polluting sources of energy. Electricity generated from renewable sources is at this time an easily achievable wish in our country. The geographical position, the climate and the relief allow us to do this. The provenance of green energy is very important for powering electric automobiles. Whether it comes from a wind power plant, a source generated by wave energy, tidal energy, hydropower or the sun, the important thing is that it is transported and directed to the fueling stations of ecological automobiles, to be later stored in batteries and converted into mechanical work by their motors, thus satisfying people's mobility needs in a more ecological, cleaner and efficient way.

By choosing renewable energy sources, consumers can support the development of green energies, clean, which will reduce the impact on the environment associated with the generation of conventional energy and which will ultimately lead to the increase of energy independence.

Renewable energy sources of wind, solar, hydroelectric, seas and oceans, geothermal for the electric means of transport, then the biomass and biofuels for means of transport with thermal engines, constitute the basic alternative to fossil fuels and define the basic support of ecological and clean automobile transport.

If we associate these two terms, we notice that they have common features, there is some interdependence between them, their essence derives from renewable energy sources. Green, clean energy represents the triumph of human development against chemical noxiousness and road noise.

7. Conclusions

Knowledge management involves spreading knowledge and using the human capital with maximum efficiency, and this needs to be done when motivation, participation and knowledge sharing are almost instinctive and are an integral part of daily activities in any organization, at the workplace.

Knowledge management improves the performance and experience of teams within any organization. Within the daily activity or the projects that the organization carries out, it eliminates the failures and develops the path to success.

The current developments in the economic environment with an orientation towards the development of the knowledge-based economy have been permanently accompanied by attempts to explain the levers and mechanisms that underlie them, but also to create new models, new tools and new concepts to allow everyone to react promptly and understand the new current challenges of the contemporary society.

The road transport organizations do not produce material goods. They produce transport services with vehicles or motor vehicles. Due to this, their achievements are measured in abstract units, but, in fact, productive processes in the field of movement of goods or people are carried out inside them.

The knowledge acquired, accumulated and appropriated by the members of any organization enables them to improve their performance and facilitates their skills and potential for creativity, storage, sharing and exploitation of the knowledge throughout their life.

By having the necessary knowledge, most of the time, if we talk about performance, small organizations achieved remarkable successes, which in a very short time managed to capitalize on the information they had at a given time all other organizations together. Of course, the basis of the success was the transposition of the informational baggage into viable solutions for everyone's needs.

Through the management of knowledge in road transport, the most important resources are developed that contribute to the smooth running of the processes necessary for the safe movement of the goods or passengers. They increase the performance of the organization and eliminate what is old and outdated. If an organization in the addressed field achieves that performance of identifying, applying and exploiting certain knowledge more quickly within it, success on the road transport market is guaranteed.

At the level of any road transport organization, in order to implement an efficient and effective knowledge management system, elements from the past or present can be taken as an example because there are elements from the past that can be taken as an example to ease our present and anticipate easier the future, although the connection between the human factor and the technological factor cannot be broken.

In the near future, the innovation and technology will have their say in the issue of the autonomy of electric batteries, charging times, powers and the existence of electric charging stations on traffic arteries, and people will become more and more interested in electromobility. All other issues regarding infrastructure, purchase price and charging times will no longer be an obstacle to the accumulation of new knowledge, data and information in the field addressed. Of course, all this involves additional costs and expenses that decrease the popularity and make the electric automobile unattractive. It all depends on the state of the standard of living and the socio-economic situation in that region or country. To solve these problems, the state authorities must intervene to support the population and transport organizations. The population must be trained and educated in this regard.

If people will have knowledge about electromobility and protecting the environment, then they will become much more interested in the electric automobile, and the road transport system will become truly green, clean, sustainable and durable.

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