The Model of Influences of Electronic Commerce on Cadres in Organisations

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The purpose of this article is to present the dimensions of the influences of e-commerce on the most important component in organisations: cadres. This is a hot topic in current debates on the information society. With a selected mode of analysis and modelling, and with a method of abstraction in the background, we can form a universal model of e-commerce and cadres in organisations. By confronting them we also get the model of the influences of e-commerce on cadres in an organisation. Into these models we can insert the particulars of a specific organisation, revealing their applicable value either at the level of concrete organisation projects or at the level of further theoretical study of this professional field.

Nowadays rapid and various or complex changes occur in all fields of society. It holds good especially for the information and communication technology (ICT), which affects the entire society, organisations, and individuals. Modern information systems such as e.g. business, banking or also administrative information systems – when connected and open, can simply be called e-commerce. They exceed the limits of an individual organisation and thus communicate on the national (they actually cover all fields of social life and operation), European and world wide level, in effect resulting in their globalisation. Therefore, if we place this (globalised) e-commerce into society, we can also speak about the information society.

Starting Points of this Article

What is hiding beneath the notion "e-commerce"?

Electronic commerce (EC) appears as an uncontrollably wide field. Technical-technological and legal-organisational components of EC are intertwining among themselves in a way that is barely distinguishable (Toplišek 1998:1). In the widest sense, EC includes the use of all forms of ICT in business relations among trade, production and service providing organisations, bidders of data, consumers and state administration (Gričar 1997:245).

How does all that affect modern organisations?

Organisations are increasingly interconnected through ICT, creating networks of partners, who are in turn interconnected and synchronise their operations. New forms of organisational structures are appearing, which are supposed to be more dynamical and adaptable to the needs of the market (Keen and Knapp 1996:28).

As we speak of virtual organisations, we could say that work is distributed from offices to the information system, where IT plays the main role. The more an organisation is virtual and the more its units or included companies are geographically separated, the greater the importance of IT for communication support (Adams, Morris, and Van Scotter 1998:8).

What does EC mean for an organisation?

It means an opportunity for a review of efficiency of the internal operation of an organisation, disclosure and management of e.g. procurement and sale markets or its environment, and a more exact monitoring and implementation of legal regulation. Recently international studies have shown that the gravity of main EC problems is moving from technical to non-technical problems (legal and organisational issues) (Toplišek 1998:1).

What does EC mean for the employees of an organisation?

It promises a change of working procedures, abolition of paperwork, faster operation, less errors, more time to work with clients.

The Purpose And The Goal of this Article

This article has several purposes: to define an overall model of "EC" as well as of cadres in organisations, and to confront the two models, thus defining the influences of EC on the cadres in organisations, and to present that as a model as well.

Problems and limitations

Both studied objects, EC and cadres, are very complex, dynamic, and unpredictable. The problem lies within the preparation of a proper analytical basis as an instrument, serving to identify their components, based on which we will afterwards study the influences of EC on cadres. More specifically, in the research of both objects there is a danger of becoming entangled in pure technicalities of EC or in the sociological and psychological characteristics of the employees, especially in the light of the organisational and procedural complexities. Therefore, we will have to identify a proper level of abstraction and then confine our discussion to it. On this basis, we will also develop the goal model of the influences of EC on the cadres in organisations, present possible modes of use of the model and then also try to indicate the main directions of the development of EC and the cadres in organisations for the future.

The Components of Electronic Commerce

EC is an important component of development and an important factor of a successful organisation. It offers a good opportunity for the rationalization of processes in economic societies and also administration. The current modes of business are changing with EC; the modes of organising the business are distinctly changing with the use of ICT between organisations and individuals. It also requires considerable mental, organisational and technological preparation.

Preparation of the analytical EC model

The notion "EC" or the EC system is very complex. We can present it on more levels for the purpose of this research:

1. *Normative regulation* – preparation of all the necessary legal acts and executive regulations:
- The Electronic Commerce and Electronic Signature Act,
- Acts on registers and Records of organs in administration,
- The Protection of Personal Data Act,
- The acts on employment relationships,
- The rules on internal organisations and systemisations;

2. *Factors that affect the introduction of EC into an organisation:*
- Organisational changes,
- Working and other processes,
- Management,
- Logistics,
- Technological infrastructure,
- Standards and protocols,
- Planning and development,
- Education,
- Information management,
- State administration,
- Geographical characteristics; (Gričar 1999:163–169)

3. *Types of communication:*
- Between companies (Business-to-Business),
- Between companies and customers (consumers) (Business-to-Consumer),
- Between customers (consumers) (Consumer-to-Consumer),
- Between companies and the State (Business-to-Government),
- Between customers and the State (Citizen-to-Government),
- Between countries (Country-to-Country);

4. *Developmental cycle of an information system or the cycle of the introduction of EC* includes the following phases:
- analysis,
- planning,
- implementation,
- introduction; (Center Vlade za informatiko 1999:29)

5. *Concrete components of ICT*, such as:
- networks,
- hardware,
- software,
- individual applications,
- other information services.

Understood this way, the notion "EC" can be treated as an EC model in an organisation, namely as a universal (or parametric) model, which can be used in any organisation (company, administration) by inserting concrete contents of the organisation in it.

Together with the model of the cadres in the organisation, this EC model will serve as a basis for the construction and survey of the model of influences of EC on cadres in organisations.

Cadres in Organisations

If we want to analyse cadres, we can establish that it is not enough for an organisation to exploit material sources to reach the set goals, but it is also necessary to take advantage of the people and their capabilities, for cadres are a condition that is essential for the existence and development of an organisation.

The activity that deals with it is called Human Resource Management, and with such activity we wish to obtain connectedness with the (strategic) planning in an organisation.

For a correct understanding of the place and the role of the cadres in an organisation, it is necessary to look at the notion "cadres" from at least three points of view, namely from:

1. the point of view of cadre processes in the organisation,
2. the point of view of individual characteristics of particular cadres in the organisation,
3. the working point of view.

These three points-of-view also constitute the model of cadres in the organisation on the first level. A more detailed analysis of these points-of-view follows in the continuation of the text.

Cadre processes in the organisation

If we derive from the fact that the organisation's system is composed of subsystems, such as: production (or service-providing), financial, cadre, procurement, sale, and technical subsystem, then it is possible to further divide the cadre subsystem for the purposes of this research. We can also call it a process-system model of a cadre function (or sub-system) in the organisation.

Therefore, the first part of the cadre function in the organisation are cadre processes, namely (Florjančič and Vukovic 1999:57–82):

• normative process (determination of the rules of the organisation and protection of the individual's rights),
• division of work (means the totality of goals, tasks and functions, implemented by individual workers),
• planning of cadres and education (adjustment of cadre needs to the goals of the organisation, eventual placements and transfers and planning of education and qualification (Jereb et al 1998:435)
• process of cadre selection (which is always necessary, when a new company or an organisation is established by investing capital or by decision of the founder, or when the need for new cadres is established with a cadre plan),
• process of cadre admittance (a permanent task of the cadre service at planning, analysis, selection and occupation of workplaces),
• introduction of the newly admitted cadres (acquaintance of the newly admitted personal with the organisation, its goals, tasks and

functions, and with the working groups, where the personal will work),

• process of permanent education (a net of events and activities for the development of individual capabilities of persons),

• education of managers (a process, with which the managers gain experiences, develop their predispositions, capabilities and skills, and thus become and remain successful managers of their organisations),

• motivating and awarding employees (money is also one of the motives, with which we can satisfy many needs. Money is often the prevailing factor, when the employees are deciding whether to continue working for the same employer or to choose another one). (Jereb et al 1998:254).

Cadre characteristics in the organisation

Human personality can be comprehended as the organisation of one's characteristics. Various properties and traits must be considered when studying an individual and his personality. We could ask ourselves: how many characteristics do we have, and which of these need to be explored and surveyed when we study a personality? When we analyse an individual as an element of an organisation, we can study five groups of personal characteristics, namely, physical and biographic characteristics, personality characteristics, capabilities, motives and motivation, and perception. (Treven 1998:67–68)

Work analysis

Work analysis is a process of determination of the work properties that are essential for its successful implementation and a process of determination of the conditions in which the work is implemented. It is every objective procedure of acquisition of information on work, working tasks, working roles that are or will be implemented. It contains the following components:

- definition of the organisation, systemization and workplace (work components),
- planned (standard) working achievements,
- selection of the proper rating technique, rating, and use of the results of rating of working achievements. (Jereb et al 1998:80–95)

Often the particular methods for the implementation of work analysis contain already prepared questionnaires, with which we can gather information on individual work in a particular organisation.

We can treat such an elaborated model of cadres in organisation as a universal (parametrical) model that can be used in any organisation (company, administration) by inserting the concrete contents of the organisation.

Together with the previous EC, this model of cadres will be used as a basis for the construction and survey of the model of influences of EC on cadres in organisations.

Influences of the Electronic Commerce on Cadres in Organisations

Introduction of changes in an organisation

Introduction of EC can be characterised as the introduction of changes in an organisation. Since the most important component of an organisation are its employees (people), EC can also be the cause for changes affecting employees in the organisation, or, to put it differently: the influence of EC on cadres in an organisation can be studied. And this is exactly the essence of this research.

However, change is a process, making the course of the so far existing actions and operation to take another way.

The success of a particular information project will depend on the acceptance by the users. Even the best solutions are destined to fail when they are not positively accepted by the users. Therefore, the implementation of this kind of projects requires dedication of special attention to their acceptability, which is influenced by two factors:

personal advantages, brought to the individual by the project, and advantages, brought to the *organisation* by particular subsequent social and psychological factors, such as the need for security and stability, fear of losing one's workplace, acknowledgement and identification needs, and sympathy or antipathy.

If we include the user – with all his concerns and needs – in the project at the very beginning, a significant step towards acceptability has been taken. But we should be aware of the fact that mere training and qualification are not enough. The user needs to feel that even after the project is finished, he will always have someone available to help him in the maintenance phase to the same degree he was helped in the introduction phase. (Jereb, Jereb, and Gradišar 1997:28–34)

Series of changes occuring within organisations can be of various types:

- *restructuration:* because of the structural changes of the market and the competition, and because the life cycles of the products are getting shorter, the organisations (companies) introduce new programmes and they even unite themselves among them in new organisational structures,
- *optimisation of business processes:* because of the competition, the organisations (companies) shorten the periods of flux and development and integrate the procurers in their business processes,
- *reorganisation:* means the change, with which the organisations wish to improve the communication flux of information, increase the productivity and orientate themselves more towards customers. Reorganisation is the change that in its development most directly affects the people and their management.

If we summarise: introduction of EC into an organisation brings about changes in the organisation and the individuals in it.

Introduction of changes with the individual

The process which occurs with the individual with the introduction of changes, is as follows:

1. denial of changes: the employees do not accept the new programme, and they still try to validate the old one,
2. taking a defensive position: typical for this phase is the attempt to defend the old workplace as the programmes of changes become more and more realistic,
3. abandonment of the old: employees are enabled to try the new systems. They detect the reality of the changes, they become more open and begin to accept the novelties,
4. adjustment: individuals are prepared to accept the new working modalities and to help,
5. stabilisation: members of the organisation can form a new system and a new process, reinstated new relations, a new working environment.

With the process of introduction of changes with the individual, we need to be aware of the fact that negative reactions also may appear, such as fear of changes and resistance towards them.

With the influences of EC on cadres in an organisation as a consequence of the introduction of changes, the role of management is very important. It needs to consider the principles of introduction of changes in an organisation and the process that occurs with the individual, and choose a proper approach for encouragement of the employees, if the organisation wants to achieve the set (strategic) goals. Only complete knowledge of all the influences of EC on all the cadres in the organisation enables an active introduction of EC. Therefore, in the following text we survey the model and the analysis of the influences of EC on cadres in organisations.

Elaboration of the model of influences of EC on cadres in organisations

We obtain a model of influences of EC on cadres in an organisation by confronting the EC model and the model of cadres in an organisation.

In view of their extent and complexity of components, we can survey it on the first, second, third, etc. level of analysis. For the technique of the survey, we will use a table (see Table in Appendix).

In the table juncture of EC and organisation cadres components, "x" means that the influence exists, while an empty square represents the lack of influence.

We must emphasise that the influences are analysed in the direction EC→cadres, but the analysis of the influences of cadres on EC is not the subject of this study.

Also this model can be treated as a universal (parametrical) model, which can be used in any organisation (company, administration) by inserting particular types of influences.

Types of influences of EC on cadres in organisations

As we've now reached a model of influences of EC on cadres in organisations (the points, where EC influences the cadres), we can also classify the influences.

In the previous chapter we defined the influences of EC on cadres in an organisation as the introduction of changes into the organisation and at the individuals. For the purposes of the analysis of this model we can use the following classification of influences:

1. a division according to types of an *individual's feelings*, both internal (psychological, mental and emotional), and external (physical perception of the working environment, working conditions and general development);
2. a division according to the *phases of the process of introduction of changes* with the individual (described above in "Introduction of changes with the individual").

3. a division according to the types of changes that occur in the organisation (described above in "Introduction of changes in an organisation").

Since we only marked in the model whether there is an influence between an individual component of EC and a component of a cadre in an organisation, we have left this model open for further studies.

If we would insert concrete data on individual classified types of enlisted influences for a certain organisation, we would undoubtedly exceed the purpose of this study; the model would become very extensive and complex, therefore the technique of construction, survey, and simulation should be changed by using computer tools.

Final Findings
Directions of further development of cadres in organisations
On the basis of the surveyed model of influences of EC on cadres in organisations, from which we first of all detect only the existence or the non-existence of individual influences, we can already suggest that the (managers of) organisations dedicate special attention to:

- planning of cadres and education,
- selection of cadres,
- permanent education and qualification,
- preparation of all standards for workplaces already in the sense of EC, on basis of which they would be able to monitor easier, faster and better the results of work of the employees, which would also used for motivation, awarding or reorganisation of workplace,
- also the structures (communication) in the organisation and its environment are changing because of EC,
- of course it is necessary, on account of the properties of both studied object, for EC and people, to permanently verify and maintain the exact structure of both models, so both can display all the components that are necessary for management of a modern organisation.

Directions of further development of EC in an organisation

The surveyed model of EC in an organisation is a very extensive and complex one. The world trends in the field of ICT are headed towards "system integrations", and the organisations will continue to connect into global information systems (such as chains).

This leads to a decrease in the number of instruments and equipment, and an increase in simplicity and friendly usage. It would be especially useful to limit the number of non-technical components of EC, thereby perhaps reducing the overall number of EC factors. One of the components however requires special attention, namely the preparation of the necessary legislation on electronic commerce, electronic signing, security and protection of data.

However, since the ICT field is subject to rapid changes, a continued process of custody over the strategy ICT or EC must be present in an organisation, including long-term directives and short-term concrete ICT standards, protocols, and recommendations. An organisation therefore needs to implement all the information activities on unified methodological bases, specifically because of a unified management of projects, development or renovation, or integration of applicative systems of the organisation. The second important field of ensuring a proper infrastructure for EC is represented by unified ICT standards, which are currently based on the principle of object modelling, data warehouses and network computer science and the relevant communication networks.

Conclusion

The subject studied in this article is currently a hot topic. The global trend of the operation of companies and administrations and the most important resource within them, cadres, indicates a considerable need for thorough knowledge of all the properties of the introduction of EC into an organisation.

At this point we can establish, on the basis of the previous chapters, that the purpose and the goal of the research have been reached in this work, since both studied subjects (EC and cadres) are clearly determined

and surveyed simply for the modelling of the target model, with which we want to indicate the dimension of the way employees operate in new conditions in organisations, dictated by global technological trends, such as EC. We also considered methodological problems and limitations (such as the complexity, dynamics, and unpredictability of the objects of study), since we concluded the analysis and the survey of the three models at the extent and the level that led us to the transparency of the models, their universality and controllability, and to the way they open further possibilities to study possible points of view of this type of problems.

Final conclusion: we constructed three universal, parametric models, applicable to any organisation (also to an administration), which can be further subdivided and filled with concrete contents (data) of particular organisations. This article is therefore useful for concrete projects from the following fields: development and introduction of information systems, planning, ensuring and management of cadres, organisation and optimisation of processes and procedures, connecting of the organisations with the environment. It can be used for companies, administrative and other types of organisations.

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APPENDIX

Table: The model of influences of EC on cadres in organisations on first and second level

EC components/cadre components	1. CADRE PROCESSES	1.1 normative process	1.2 division of work	1.3 planning of cadres and education	1.4 selection of cadres	1.5 admittance of cadres	1.6 introduction of the new-admitted cadres	1.7 permanent education and qualification of managers	1.8 motivation and rewarding of the employees	2. CHARACTERISTICS OF CADRES	2.1 physical and biographical characteristics	2.2 personal characteristics	2.3 capabilities	2.4 motives and motivation	2.5 perception	3. WORK ANALYSIS	3.1 organisation, systematization and workplaces	3.2 planned (standard) working achievements	3.3 use of results of rating of working achievements
1. NORMATIVE REGULATION OF EC		x	x	x	x	x	x	x	x				x	x			x	x	x
2. EC FACTORS																			
2.1 organisational change		x	x	x	x	x	x	x	x				x	x	x		x	x	x
2.2 working and other processes		x	x	x	x	x	x	x	x		x	x	x	x	x		x	x	x
2.3 management		x	x	x	x	x	x	x	x		x	x	x	x	x		x	x	x
2.4 logistics		x	x	x	x	x	x	x	x					x			x	x	x
2.5 technological infrastructure		x	x	x	x	x	x	x	x				x	x	x		x	x	
2.6 standards and protocols		x	x	x	x	x	x	x	x				x	x	x		x	x	x
2.7 planning and development		x	x	x	x	x	x	x	x		x	x	x	x	x		x	x	
2.8 education		x		x	x	x	x	x	x		x	x	x	x	x		x	x	

2.9 information management	x	x	x	x	x	x	x	x		x	x	x	x	x		x	x	x
2.10 state administration	x	x	x	x	x	x	x	x				x	x	x		x	x	x
2.11 geographical properties	x	x	x	x	x	x	x	x		x	x	x	x	x		x	x	x
3. TYPES OF COMMUNICATION																		
3.1 between companies (Business-to-Business)	x	x						x		x	x	x	x	x		x	x	x
3.2 between companies and customers (Business-to-Consumer)	x	x						x		x	x	x	x	x		x	x	x
3.3 between customers (Consumer-to-Consumer)																		
3.4 between companies and the State (Business-to-Government)	x	x						x		x	x	x	x	x		x	x	x
3.5 between customers and the State (Citizens-to-Government)																		
3.6 between countries (Country-to-Country)																		

4. CYCLE OF THE INFOR-MATION SYSTEM DEVELOP-MENT																	
4.1 analysis	x	x	x	x	x	x	x	x			x	x	x		x	x	
4.2 planning	x	x	x	x	x	x	x	x			x	x	x		x	x	
4.3 implemen-tation	x	x	x	x	x	x	x	x			x	x	x		x	x	
4.4 introduc-tion	x	x	x	x	x	x	x	x			x	x	x		x	x	x
5. COMPO-NENTS OF ICT																	
5.1 networks	x	x	x			x	x				x		x		x		
5.2 hardware	x	x	x			x	x				x		x		x		
5.3 software	x	x	x			x	x				x		x		x		
5.4 individual applications	x	x	x	x	x	x	x				x	x	x		x	x	x
5.5 other information services	x	x	x	x	x	x	x				x	x	x		x	x	x

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