

The Information and Communication Technologies impact in Urban Process

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1 INTRO

The effect of Information and Communication technologies progressively covers the entire spectrum of the enterprising and administrative transactions that take place in the urban tissue and offer new innovative operational activities.

With the development of internet, digital technology and telecommunications

- most enterprising operations today tend to be electronic.
- geographical and temporal limits in operating an enterprise are diminished,
- new market forms are created,
- new hybrid products are created,

while, simultaneously,

- the nature of goods becomes, more and more, indistinguishable from services.
- changes in the hierarchies of importance of products.
- new dynamic relations developed between customers and companies.

The base of electronic activities is supported by the capability of:

- recognising and ordering products from distance,
- organised mass central assignment to the consumers of services, with direct impact to the reduction of transportation pressure and parking spaces.
- diversification of nature of products by material and immaterial, with disproportionate requirement of land and thus impact in the function of urban space.
- expansion of abilities of immaterial administrative solutions for material products.

The changes that take place in the structure of an enterprise activity, with the application of informative solutions, are drastic and interact with the exterior world in sectors as:

- 1) Supplies,
- 2) Sales,
- 3) Relations with customers and suppliers,
- 4) Management of relative information and negotiations,

and they expand in depth and width and acquire readiness and speed.

A) E-BUSINESS

A radical transformation is realised in the enterprising world.

- Electronic transactions,
- creation of electronic markets (e-markets), and
- electronic enterprising communities (networked business communities),

will bring down the traditional enterprising models.

The "Decapitalisation" of enterprises constitutes, potentially, the most important element of new enterprising model, as the enterprises create "external networks", diminishing considerably the corporate operations that are carried out inside them. This renders the entire urban tissue a place for operational activities when it does not exceed the government owned limits.

B) E-COMMERCE

It should be pointed out that real electronic trade is something more than simply selling products in web. Two basic categories of activation can be observed, which also create different enterprising processes.

- a) To electronic trade addressed to the consumer,
- b) The electronic trade extended to business resources and processes

C) E-PROCUREMENT.

The management of supplies via Internet is a basic component of electronic business. It provides important possibilities for reduction of expenses and offers new chances for profitability, both basic strategic elements for planning business in the New Economy.

D) E-GOVERNMENT

It changes the way that National and Local Governments serve the citizens. The era of electronic governing has already begun. Its simple expression concerns the use of technology so that the means of access and services to the citizens are enriched, as well as the enterprises in the frame of its operational way to a "client-central" approach.

E) E- MARKET PLACES.

The term e-marketplaces means electronic markets structured in order to serve B2B operational trades^{1[3]}

2 THE URBAN PROCESS TRANSFORMATION FACTORS.

The up today expressed theories of space explain land use distribution with reference to:

- distances from the markets,
- the available means of transports,
- simultaneous formulation of thematic and spatial hierarchies of services for the creation of markets, and the
- general functional aspect of space,

These allocation theories arise directly from the application of various types of economy (rural, industrial, services...) in space. This means that the allocation of the economic activities, in urban tissue, is mainly influenced by these functional factors.

Such elements, beyond political, social, and tax factors, are usually capabilities for:

- individuals transportation,
- communication,
- Information,
- products transportation,
- products distribution,
- goods storage,
- products processing,
- networks infrastructure e.t.c.

The spotting of type, place and function of **constitutive elements of urban structure** opens theoretically the way for the interpretation of nature and way cities operate. The basic constitutive elements concern mainly human activities taken place occasionally in urban tissue.

The differentiation of the "**human activities nature**" in the development of information and communication technologies (I.C.T.) has implications on the "**basic nature of cities**". This differentiation is expressed initially in the function and in continuity in their form.

a) The classic factors of allocation of activities in the regional and urban space were up today mainly of "**material nature**". And more specifically:

- the accessibility,
- the cost of energy,
- the cost of labour,
- the markets place,
- the appropriateness of natural infrastructures etc

b) This consideration is progressively supplemented with corresponding allocation factors "**immaterial nature**", as

- knowledge resources,
- culture resources,
- knowledge infrastructure,
- centres creation,
- information networks,
- communication technology.

These immaterial factors constitute the new genetic code of the old urban environment transformation and the new urban environment creation.

The new genetic code affects the urban process, acting additionally and simultaneously to the material nature factors, and results in **the activities territorial redistribution.**

It is important to investigate the way immaterial factors influence. This happens because their immaterial nature is reported mainly to the fact that these factors are “**independent from the space**”, as they influence the urban process.

Thus while until today the cities process depended on the space and cost factors, the configuration of anthropogenic urban environment is, from now on, presented immaterial and consequently independent from the space and its’ up to now active properties, because the e-networks creation disconnects the space and cost dimension.

Summarising we can consider that: “Information, Communication and Technology are main forces of development, in Urban agglomerations”.

For the various hybrid immaterial activities completion and the diffusion inside and outside urban tissue “**Networks**” constitute the basic prerequisite.

The urban agglomerations environment, constitutes the ideal cradle of growth and convergence of networks, fact that constitutes their main attribute. This happens because the networks stretching out (gradually) in the urban planned space tend to unify, differentiate and improve, from a functional aspect, the space’s three basic properties: ensure continuity, and blunt its anisomorphy and anisotropy.

The extension and spread of networks in the “men-made space” aims to render all places equally central active. The later recommends objective for the improvement of its functionalism.

Thus the developmental and cultural potential of a city is determined and depends upon the possibility, quality and speed of communications, that is to say the possibility of creating networks and their properties development which are:

- the comfort of integrating new elements and
- the possibility of networks combination.

3 THE SPACE TRANSFORMATION SEQUENCE.

These changes, emanated from activities evolution and the Market’s transformation , affect the urban process, shaping:

- a) Electronic way of function in all urban activities.
- b) new spatial forms of growth for residence, productive activities and services sector,
- c) modification in the way central places function because of alterations in their role, and the centrality’s bluntness.
- d) development of functions of scale (longer distance commuting, big commercial centres, road axes interconnections....)
- e) development of allocation of scale, central regions extension with network form but also linear form on central axes.
- f) intensification of land uses with consecutive increase in land prices.

The above new elements entail the Reconstruction of Urban regions by new functional forms, via

- 1)the development of nucleus with advanced – specialised functions,
- 2) interconnected with big supralocal axes and
- 3) growth of means of mass transport of constant orbit (underground, tram).

It should be clarified that the reported “**alteration of nature**” takes place in specific parts of cities that change mainly their functional nature. These changes take place initially in the “**functional part of the city**” that has maintained certain metabolic attributes and is extended in the “**inactive mass of the city**” occupying the necessary space.

It is namely “*an internal areal change*” characterized by *thematic differentiation*.

4 THE BLUNTNES OF CENTRICITY.

The Internet, stretched out in the urban tissue, renders the attributes of centrality approach-ability and accessibility property of all Urban regions. The notorious centrality based on the Urban functions hierarchy is blunted, since the nomenclatura of functions is transformed by the electronization of the old and the transformation of the new. The internet lends in all the regions, the central dimension from the point of information flow aspect.

It is noticed, at the same time, that the “**electronic control of supplies**” rationalises their management and decreases the transportation burden from their realisation. The same effect has, obviously, the legalization of electronic signatures. This fact ensures what has, for some years, realised by the double use of fax.

Similarly the final repercussion of electronic governing in operation of city is decisive, since up to now the citizen’s movements via the road axes, from and to, various governmental buildings, is now carried out electronically, via the information boulevards.

These factors and influences shape in a new base the relations between

- allocation of production,
- transport cost,
- products and services places of disposal,

involving the total rearrangement and transformation of all parts, of production , disposal and the communications between them.

¹[3] B2B eMarketplaces

The unceasing phenomenon of enlargement brings, doubtlessly, the internal alteration. Thus new functional characteristics are shaped, that serve the objectives of each city which is extended continuously to a total multi-centric urban agglomeration.

Indeed, the cities, being developed under the effect of the already reported hybrid factors, are progressively converting to new "entities", that is to say in "**multi-centric urban agglomerations**" that can be determined as "**urbanised regions**".

The new possibilities of Information and Communication technologies (I.C.T.) exempt the individual consumer from the need to resort to these central places in order to obtain goods and services. Thus central position ceases of constituting essential attribute and advantage of places which henceforth are equally functional while simultaneously the complementarity of space is blunted progressively. Therefore new properties will be developed towards the allocation of activities, which will from now depend on Internet.

It is obvious that the activities electronization will not happen automatically, but will be developed progressively and step by step, depending on the possibility of each activity to become electronic.

This change in the way of operating individuals, services and enterprises in space, via the internet, which substantially constitutes new technology of information-communication but also action, differentiates progressively the man-made space nature. At least the nature we conceive.

This differentiation will begin with the progressive bluntness of centrality, and in **continuity with** the release of also local centres from this, in the degree that the new technologies of communication allow and determine.

The described above changes of nature and way businesses operate but also co-operate, show already a decisive effect in their way businesses act in space and co-act inside the city that accommodate it.

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The latest effect of electronic government in the function of a city is decisive, since the up to now transportation of citizens via the road axes from and to the various governmental buildings, has now been realised electronically, by the distribution of citizens and their administrative acts via information technology.

Factors and influences like these shape the relations between relocation of production activities, transport cost, and places for disposal of products and services. The latest are, obviously, influenced by every relevant technology that is available.