

STATISTICAL RESEARCH OF SAMARA REGION INFORMATIZATION

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Key words: informatization, informational-communicational technologies, region, branch of industry, sphere of activity.

The author carries out the analysis of informational-communicational technologies application in enterprises of Samara region during 2002-2006. On the basis of analysis he reveals the tendencies of informatization development in certain branches and in the region as a whole.

The economic potential of region in modern conditions is in a greater degree defined by its informatization development, which level in Russia in whole and in the Samara region in particular in intermediate term prospect should correspond at least to level of the in the lead countries in the field of informatization. Informatization prospects are caused by gradual reorientation of the government, local authorities and businessmen to values of an information-oriented society. Further everything will be defined by resources allocated or released on these purposes. According to Federal Agency of the state statistics, in 1996 out of 1789 Samara region enterprises only 1000 had computer facilities in structure of their fixed assets. Statistical supervision for January, 1st, 1999 on the usage of an information technology and presence of computer aids has been made on 2703 largest enterprises of different patterns of ownership from which 2700 really are engaged in adoption

of a new information technology (99,8) %. For January, 1st, 2001, 2104 enterprises have been surveyed, from them only 1647 (or 64 %) used information technologies¹. By the beginning of 2002 from the surveyed enterprises 1647 (or 78 %) used an information technology in the activity. By 2003 80,2 % from 2002 enterprises have been provided by computer aids.

The branch analysis of provision with the computer aids, presented in table 1, has allowed to draw the following conclusions.

As a whole, despite insignificant (1 %) recession in 2004, quantity of the industrial enterprises of the Samara region using computers, since 2002 has shown 4 % growth.

Nevertheless, in the majority of branches negative dynamics is noticed. There is a whole complex of reasons of this reduction, but the major of them are the lack of assets, inertness of thinking of company's management and ordinary employees who are not realizing impor-

Table 1

Number of organizations using computers

Indicators	2002	2004	2006
Samara region total	1536	1606	1760
Electric power industry	12	13	13
Fuel industries	19	15	15
Ferrous metallurgy	1	1	2
Nonferrous metallurgy	2	2	2
Chemical and petrochemical industry (without a pharmaceutical industry)	31	34	38
Mechanical engineering and metal working (without the medical industry)	131	130	138
Agriculture	13	10	10
Transport	113	110	102
Communication	22	17	16
Building	178	174	168
Trade and public catering	248	254	262
Information service	6	6	4
Operations with real estate	20	31	38
Public health services, physical training and social security	57	98	102
Public education	26	23	25
Sciences and scientific service	55	49	50
Finance, the credit, insurance, a provision of pensions	123	137	163
Management of customs	248	311	409

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tance, and sometimes the necessity of information supply in enterprise's activity. Negative dynamics has affected the following branches.

Ever less of enterprises use computers in *fuel industry*. This tendency is observed in oil extracting (recession of 12 % in 2002-2006) and in oil refining (27 %) sectors.

The *light industry* suffered from the same problems at this period. In 2004 there was a considerable recession (34 %), and by 2006 the number of computerized enterprises has not returned on former level and was 95 % from an indicator of 2002.

Rather unfavorable situation also exists in *transport and communication* sphere. Reduction of quantity of the enterprises that use computers (13 %) has affected all sectors without an exception including electro- and the radio communication where recession has made 25 %.

Acute shortage of financing has negatively affected the *scientific institutions* informational provision. Recession in this branch has made 10 % for four years.

The sphere of *national education and a professional training* with higher education went through less influence of negative dynamics, but it is 4 % in this sector.

Computerization reduction is also observed in a number of other service sector branches such as *supply and sale* - 18 %, in *information service* - 33 %, legal services - 50 %. Negative tendencies in these spheres are caused, generally, by leaving morally and physically out-of-date equipment in a combination with absence of reproduction policy.

It is the extremely important to mark that the described tendencies are observed against the general growth of informatization rates across Russia and the world as a whole.

At the same time a number of branches increase information potential. Certainly positive moment is that in *mechanical engineering* the essential tendency of growth (more than 13 %) was designated during the last years. It is important, that the gain of the enterprises using the computer in their activity, is swept up in all without an exception sectors of mechanical engineering. Positive dynamics in this sphere can be explained as a result of change of a government policy and placing of large orders, and also because effective activity of the majority of the machine-building enterprises is impossible with-

out worthy level of informatization. For example, use of ERP-systems is necessary for efficient control on resources and manufacture.

Positive dynamics characterizes development of sphere of trade and public catering. Though, as a whole, it is impossible to name such growth considerable (7 %), it is necessary to note its stability and penetration into all sectors of this sphere.

At the state enterprises informatization occurs in spasmodic rates. Especially it is revealed on public *health services* example. Here the gain has made 78 %. *Customs management* (- 64 %) also has not lagged behind significantly. Such rapid growth of informatization is caused basically by high rates of target state financing.

Similar growth is also present at spheres of the finance (35 %) and the real estate (90 %). These branches were generated rather recently, occupy firm position in the regional market and, as consequence, do not face difficulties neither with financing, nor with prejudice of the personnel. Besides their activity is inseparably linked with constant processing of great volumes of the information.

Summing up this numbers, we will notice that the situation with informatization in region is rough enough. Positive tendencies are noticed mainly in subsidized branches and in industry, where information as it already was told, is one of key production factors.

And still, despite recessions or stagnation in a number of branches, for last three years in the Samara region it is possible to observe steady growth of informatization of the enterprises (14 % of a gain by 2000).

For last decade local computer networks in the most various branches of a science, techniques and manufacture have received the wide spread. On the basis of local computer networks it is possible to create systems of the automatically designing of products of mechanical engineering, radio electronics and computer facilities, to implement new information technologies in the systems of organizational-economic management, and to raise quality of training in the secondary and higher education organizations by introduction of modern intellectual technologies².

We will consider tendencies of change of use of computer networks on branches and in region as a whole (table 2).

Table 2

Number of organizations using local computer networks

Indicators	2002	2004	2006
Russian Federation total	822	914	1045
Electric power industry	11	9	11
Fuel industries	17	13	14
Ferrous metallurgy	1	1	1
Nonferrous metallurgy	2	2	2
Chemical and petrochemical industry (without a pharmaceutical industry)	21	26	32
Mechanical engineering and metal working (without the medical industry)	93	108	117
Agriculture	8	6	
Transport	63	67	59
Communication	19	14	14
Building	78	86	93
Trade and public catering	83	100	137
Information service	6	6	4
Operations with real estate	12	18	21
Public health services, physical training and social security	29	58	63
Public education	24	22	24
Sciences and scientific service	36	34	35
Finance, the credit, insurance, a provision of pensions	100	106	139
Management of customs	110	126	142

Growth of quantity of networks as a whole in region from 2002 on 2006 has made 27 %.

High rates of increase (18 %) of network technologies uses in the industry are caused, first of all, by necessity of the operative control and management of a significant amount of various factors, such as arrival and the expenditure of raw materials, materials, power resources, money resources etc. At the same time, use of networks in management of enterprises allows to introduce modern technologies of production management and a warehouse economy (ERP), and also united systems of designing (PLM), that essentially raise efficiency of activity of corresponding structural divisions. The tendency to increase of network security has touched to some extent overwhelming majority of sectors of industry:

- ◆ mechanical engineering (22 %);
- ◆ the chemical industry (56 %)
- ◆ pulp and paper industry (20 %);
- ◆ the industry of building materials (4 %);
- ◆ light industry (16 %);
- ◆ a number of other sectors.

The wide spread of systems of the united account and the cash control (1C) has caused a high gain of quantity of networks in trade and public catering sphere (65 % by 2002) . Besides, the majority of trading networks apply the system " server - terminal", which necessity (the low-power terminals only giving access to the information on a server) it is dictated by use of

local computer networks. It is necessary to notice that growth was almost equal in wholesale trade (73 %), and retail (68 %), but in public catering it was considerably lower (30 %).

The rapid growth of the real estate market became a reason for increases in number of the organizations, rendering services in this sphere, and for sharp competitive struggle between them. In these conditions timely access to the freshest information becomes one of the major factors influencing competitiveness of every agency. Local computer networks provide with such possibility, it is proved by the sharp lifting of number of the organizations applying this technology (75 %).

Application of the common databases for insurance institutions has caused growth of network security in insurance sphere. For last three years its level has made 111 %.

Organizations of budgetary sector also feel the necessity of increase of technical equipment and information security level. Owing to modernization and large state financial injections network security of public health institutions has grown more than twice (117 %), customs managements - on 29 %, judicial authority and Office of Public Prosecutor bodies - on 16 %.

On the general positive background it is necessary to note, on the other hand, negative dynamics in some spheres of economy.

Steady reduction of number of transport agencies that use network technologies, is con-

nected, first of all, with a lack of money resources. Besides the majority of transport agencies do not face direct necessity for network technologies for realisation of their main activity. Thus, application of networks in transport sphere for five years has decreased on 4 %.

Negative dynamics has touched as well the organizations of communication sphere and has made 27 %.

Especially unpleasant to mark slow, but stable falling of network security of scientific institutions (2 %) and public education (9 %), caused by the lack of state financing.

As a whole it is possible to note expansion of use of network technologies in the majority of economic spheres.

The wide spread of local computer networks at the enterprises of the Samara region has entailed universal introduction of Internet technologies. It is the extremely important to notice and that for the majority of the organizations the most useful aspect of the Internet is e-mail. That's why the dynamics of growth of number of enterprises connected to the Internet, completely coincides with dynamics of growth of number of the enterprises using e-mail.

During 2002-2006 the number of Samara region enterprises using the Internet networks, has increased by 30 %. Unlike tendencies of use of other information-communication technologies, Internet tendencies though are less considerable, but are much more homogeneous.

Growth of Internet technologies in the industry has made 27 % for all considered period. All document circulation connected with transactions of internal or external character, with micro- and macro management of the enterprises and corporations and other aspects of their activity, is carried out by means of e-mail, and consequently, the Internet. In many industrial enterprises of the Samara region, especially on export oriented, there are special structural divisions of sales support which experts are occupied only by electronic correspondence with customers. Besides, all information of directive or recommendatory character that is necessary for effective activity of enterprises, is delivered to employees by means of Internet dispatches, e-mail or Instant Messenger. So, growth of Internet technologies in industry sectors has made :

◆ In mechanical engineering - 30 %;

◆ the chemical industry - 22 %;

◆ light industry - 80 %;

◆ flour-grinding and provender milling - 250 %;

◆ the food-processing industry - 23 %;

◆ repair of cars and the equipment - 53 %; wood, a cellulose and paper industry - 40 %;

◆ the industries of building materials - 29 %.

It is necessary to notice that the tendencies which we see in industry, are, to some extent, general for the majority of branches.

In particular, the transport sphere became more Internet provided. The most part of a turnover of documents, orders and the other business information between a carrier and the customer occurs by means of e-mail and other means of Internet communication. Many transport agencies allow to look through the offered conditions and even to place the order on their web sites.

Trade also becomes in the meantime more and more technological and opened for clients. Impressing growth of use of the Internet in this sphere (63 % of growth since 2002) is connected not only and not so much with electronic document circulation of separate shops or trading networks (though and it is necessary not to forget about it). Recently opens more and more Internet shops with the widest nomenclature of the goods - from cars and building materials to a foodstuff and the portable techniques, intended both for the ordinary consumer, and for the organizations and businessmen. It is proved by the growth of Internet security not only retail trade (78 %), but also wholesale (87 %). And even those trading networks which for long time specialized only on real trade, often open Internet departments.

Information and Internet technologies have not avoided the sphere of operations with the real estate (growth of 300 % by 2002) . Today any interested person can look through all spectrum of the objects, satisfying to his inquiries, on a specialized web site with common base of the real estate, then instantly pass to a site of a particular realtor to get the exhaustive information and to establish contacts directly with the seller, up to a choice of particular agent.

Auditor activity also becomes electronic based (growth of 450 %). All accounting reporting necessary for check can be transferred

with the help of the Internet in the form of the coded spreadsheets. This way provides necessary level of efficiency and safety.

The Internet offers a wide field of activity and a wide choice of focus groups for marketing. Many marketing researches can be made directly in the Internet, and their results can be transferred to the customer by means of e-mail. It explains the growth of Internet security of the organisation, which offer marketing services (71 %).

Some budgetary branches overcome stagnancy of thinking of employees and, thanks to generous state financing, become more and more informatized and information-consolidated.

Creation of a uniform medical database for public health services sphere is often discussed. And even by now some steps towards this direction are made that is why the Internet security growth in this sphere has made 226 %.

The carried out analysis allows to draw a conclusion that various aspects of information-communication technologies develop with vari-

ous intensity. The increasing number of the Samara region enterprises raises their computer means security while Internet technologies are applied slightly less often, and local computer networks and are used in rather few firms.

It is important to notice that the fields of activity generated in information (or postindustrial) epoch, such as marketing services or information service, are characterized by exclusively high level of information security - this factor is very important for their survival on the market. At the same time, the enterprises of more traditional, industrial fields of activity are being computerized much more slowly, overcoming various difficulties and barriers.

¹ *Ashmarina S.I., Roman D.O.* Informatization of the region: theory and methodology bases. Samara, 2005.

² *Ashmarina S.I.* Basis of the economic analysis of efficiency of using information resources of the industrial enterprise//Bulletin of Samara State Economic University, Samara, 2007. № 4 (30).