RECENT IST DEVELOPMENT IN ALBANIA
NEW TRENDS AND NEW PROBLEMS

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Abstract
Historical background of Albania is characterized by decision-making that was conditioned from political and ideological factors, leaving information systems in shadow. After the liberalization of the country, re-building of the country started from the scratch in a climate of political and social clashes. This rebuilding lies on the basis of potential leapfrog successes but of real failures. There is a misunderstanding of the relation between IS and IT and the attraction towards the technology. By implementing only the technology an illusion of information systems is created, while the content and way of working little is changed.
Information systems may be built in a natural "bottom-up" way where different individual solutions are merged with each other to create institutional IS, while with an authoritative "top-bottom" way the IS are built from the scratch based on the formalization of the organization. For a country in development to follow up the first way means to leave things in their own way and to loose to much time, while for the second way a real and positive involvement of top level managers is necessary but problematic. In this context the influence of foreign factors is of a very high importance for understanding of real conditions and needs of the country.

1. Some reflections on recent development of Albanian society with attention to IST.

Humanity had used Information Systems for a long time. Beginning with the second half of 20-est century a characteristic of IS usage is exploitation of new technologies based on modern computers. This tendency is actually a necessity when the World is entering in a new stage of development -- "the Global Information Society". In this context we will try to describe the recent development of IST in Albania and its impact.

After the Second World War a dictatorial regime reigned in Albania for 45 years. A characteristic of this regime, and in some way the main cause of its "spectacular" collapse, it was a policy of management based more in ideological and political factors instead of economic ones. The environment under this policy was a society where the state gradually got the propriety of every social, economic, scientific, educational entity etc.. Parallel with state structures there was the structure of party that was the real manager of the public administration and enterprises. For an active system to stay in equilibrium, it is necessary the application of the principle of feedback in the context of the couple action ó reaction with the environment, while the Albanian party-state acted neglecting the feedback from their actions over the society.

Two elements may be distinguished in such organization of the society:

- Lack of interest to developing IST. Developed IST would be useful when decision-makers are interested to know the reality and decide on its basis. This was not the case of the state-party in Albania, where the "wrong" knowledge of reality would be even dangerous.
- As result of the political constraint "to keep everyone in working at no costs", it was shown no attention for the application of new technologies that lead to automatization including computers.

As result, even when a modern computer network infrastructure was built mainly for management and finance applications, it was never used except for technical and scientific problems.

After the collapse of the dictatorship, new phenomena were developed. First of all, it was the rebuilt of the state and public administration structures 'from the scratch", in order to make the transition towards a new democratic society and a free opened market. In a way such "rebuilt of the state" was not a quite new thing in Albania. In the past such events were results of implementation of dictatorships (kingdom before the war and socialism after it), but they controlled every step of state building. This time political instability and frequent change of personnel within the public sector, confusion within the legislation and within the heads of people, and all this lead in a real and global chaos. An aspect of this chaos was the incompleteness of working rules and of formalization of

information within the public institutions. All that makes difficult the implementation of modern IS and the effective use of ICT.

The country was opened to new modern technologies including computers and networking. Especially international projects and aids supported the introduction of new PC-s. The public sector had practically nothing except few old PCs in use, which was in full contrast with the developed countries from where aids and new ideas were coming. This situation created the illusion that just by installing computers the things would go better and formally it happened, that is letters and spreadsheets were compiled "electronically". Unfortunately little attention was shown to IS itself, that is the way of collecting, processing and circulating the information useful on decision-making.

People considers computers as very important and when possible uses them for information processing, but they does not think too much about IS itself, which implies the lack of the will to develop integrated systems and services. At the same time, decision-makers make a two-fold fault considering the "computerization" as "informatization" and neglecting IS despite the need they have for rich information. The public sector in Albania, especially at the capital city, uses computers and even networking for the daily information processing, typewriting and calculations, but compared with the developed countries there is no integrated information system built over this infrastructure. A conclusion would be that in Albania we may talk about the "impact of IT" more than "impact of IS". In this context the impact of ICT on IS may be small.

2. Information Technologies and their Impact on Information Systems.

The level of development for IS has been always dependent on IT. It may be distinguished two periods in the development of IST, separated by the event "birth of computers":
a. Pre-computer period : people used paper technology as a tool to store and process data "manually." Comparable with the status of IT, IS itself were simple and little data was processed.
b. Post-computer period : people use computer technology as a tool for data storage and processing. IS of today are much more developed when compared with pre-computer period, and a huge volume of data may be processed.
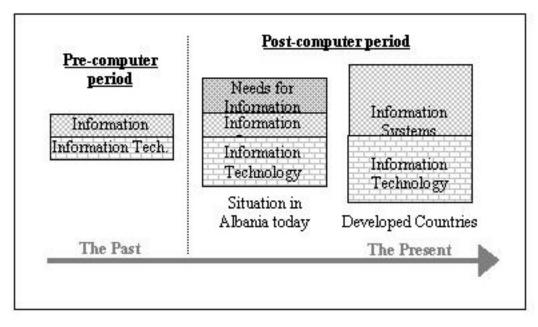

Fig.1: IT versus IS in Time

The actual situation in Albania may be described as in the Fig.1. There are public organizations relatively well

equipped with IT, but they use more or less the same IS as before while the needs are much more. Of course there are a number of individual applications used by people as a simple interface between IT and IS. The two phenomena, that is "the state-rebuilding" and "invasion of computers" combined with each other in the right way, would lead in a real "leapfrog" for application of IST Albania. It would have been possible to implement new modern IS in parallel with the building of institutions, creating a solid and effective public administration. This did not happen as it would be expected, which is with too much risk because it may lead in a new and fatal "technological" isolation. In the Information Society the key to success is the quick access and effective use of information by every cell of the society, which does not seem to be yet the case in Albania. A popular revolt may overthrow a dictatorship, but it cannot close a technological gap in the today's world.

The Ministry of Education and Science (MES) may serve as a typical example of an illusory IS created by implementing IT, and how foreign aids may help this illusion to grow up. In a number of projects related with the public administration and education, this ministry used to create a good IT infrastructure including the local network, while the computers were used only for text processing and some individual simple applications. During 1999 a foreign project started to be applied there, again IT oriented and some big servers were installed without taking care what really would be done with existing infrastructure. Instead of thinking how to built a modern IS to serve for the decision-making in this important sector as education, both local and foreign managers were attracted by the **tools** forgetting the **content**. That is "building one mill after the other without any grain to grind in". Reflecting over this story, it was encountered the dilemma how to build IS: to build the infrastructure and afterwards to think about the information, or to think firstly about the information and after it to build the infrastructure.

3. A dilemma how to build IS -- from top or from bottom.

Historically Information Systems evolved gradually from simple things to more complicated and standardized, following in a "bottom-up" way the development of human society itself. This development was based mainly on "paper technology" which was the same for centuries. Any organization had to apply already well defined IS, perhaps with some modifications. The legislation itself reflected the level of such IS built step by step and based on paper. This situation changed radically when the first computers appeared in the market. Computers made possible the storage and processing of greater quantities of data, and of building IS that were much more complex and more useful than before. This event pointed a new era for IS.

The development of computers started with mainframes that had a very high cost and would be used effectively only when supporting important IS. Those economical constraints lead to a "top-bottom" way for the development of new IS. That means firstly the needs for information within the organization would be defined and formalized, and afterwards a technological solution would be designed and implemented in a short time. IS applications were concentrated to the mainframes and centrally controlled, while users had remote access to the information via simple terminals. Development of applications was done by specialized teams while ordinary users of information being passive. Because of the centralization, new IS would be easily "compatible" with the policy of government and development of legislation.

Mainframes as a technology entered in 80-est in Albania that was too late. Nevertheless, a big project was prepared for a metropolitan network (sponsored by UNDP), including a number of pilot-projects to define the needs for information. The project was developed in a top-bottom way, defining firstly the needs and then the infrastructure. Despite the ideal political conjectures for this top-bottom development of IS, it did not happened for reasons already mentioned. Technically speaking, the needs were defined from the theoretical point of view, instead of looking the "forbidden apple": how was the reality of the society and what were its real needs.
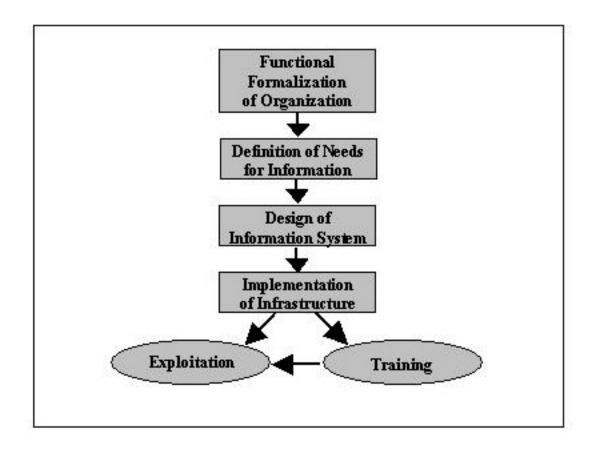
Fig.2: Top-Bottom IS Development

Emerging cheap PC-s in 80-est recreated the conditions for a "bottom-up" development of IS. The expansion of Internet in 90-est favored even more these conditions, making possible the creation of completely distributed IS over the whole world. The low cost permits users to get PCs even for simple tasks as typewriting and start gradually implementing simple applications, firstly as a new technological support for existing paper based IS and gradually improving IS itself. Within an organization it would be possible to gradually integrate these individual applications creating complex institutional IS (Fig.3). Results of such integration may include elements that would be incompatible with political trends of government or legislation, but it is compatible with actual trends of decentralization and democratization.

One of the first PCs in Albania was used by a person working in the enterprise of foreign commerce. It was a nice Commodore running Basic as language, and I wrote a simple spreadsheet application for keeping of records of import and export transactions. It was very useful for that person, but he had problems with the finance office that did not accepted computer-printed spreadsheets. It was a long time before finance offices used to accept such computer-printed documents. Now computers are used intensively to prepare documents that are exchanged between users via network connections. It is a big step forward, but a small one compared with developed countries. The problem is that the **tools** for preparation of documents are changed, but the **content** of documents was more or less the same as before. As far as these new tools would not be used for a new and extended content, there will be little impact of ICT on IS.

There is a way to improve the content. Gradually with time small databases emerging randomly as mushrooms in the public sector would be enlarged and integrated with each other creating the support for new IS. As a natural process it need time and a good feeling of collaboration between people. It will take time for new IS to be accepted by managers, and more time to identify and solve legal problems related with it. Such phenomena are visible today on the Internet, and they are expected to be more important in the future. The development of human society is

going through such gradual integration processes. Developing countries have no time for gradual changes - they need to do "leapfrogs" to reach developed countries. But "leapfrogs" would be difficult and dangerous, perhaps an utopia.
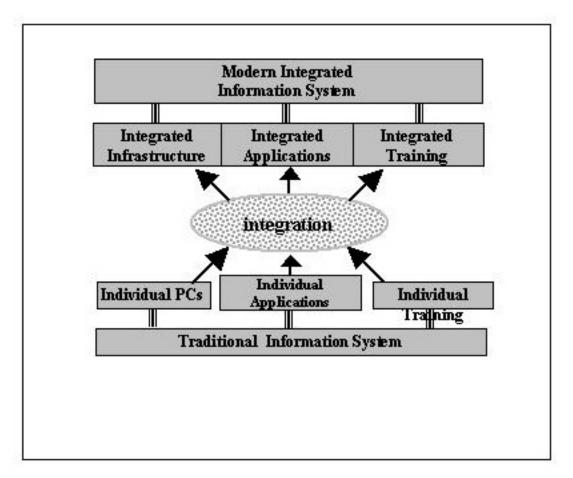

Fig.3: Bottom-Up IS Development

4. Building IS in theory and in practice.

The paradox of having new IT but old IS in Albania is related with the complex situation of the country. It is a reflection of the transition and contradictions of the society itself. Some aspects of this situation are:
− Legislation not complete …
… and Public institutions not consolidated,
− Good technological experience …
… but lack of knowledge on the theory of IS,
− Relatively developed IT infrastructure …
… but low level of IS used by public institutions,
− Users sometime trained …
… but not in homogeneous way,
− Development conditioned by foreign aids …
… but little attention shown towards local experience.

There are such complexities even in the case of the MES. There is no complete legislation that would define clearly the role of the ministry. Its structures and their functions depend in a high degree form temporary conjectures and

the will of top-level managers. The ministry was well equipped with ICT, having a good distribution of PCs and a local network. There were a couple of very good computer specialists, but they were not able to think about information processing and systems. Top level managers played a special role in this complexity. They considered the information and computers as important, but they could not distinguish the difference between software and IS, thinking simply that with some good hardware and software everything would be solved. As usual, many of them little collaborated with the specialists, despite the fact that MES has under its jurisdiction a lot of teachers and researchers.

In this environment an important aid from foreign governments was offered for the so-called "informatization". The aid would be used effectively if executed taking into account some factors as the existence of the infrastructure, lack of consolidated IS, lack of adequate training. In this context would be with interest to concentrate the attention in the content and training. Instead the project was oriented towards the "visible" infrastructure, assuming theoretical needs instead of the real ones. The error was worse than that of 15 years ago, because this time MES had the infrastructure. When technicians entered in game it was too late to change the objectives of the project.

Similar phenomena may be in other public institutions as well. To avoid such anomalies would be necessary the adoption of some strategies how to attach the problem of building new IS over existing up-to-date ICT. A top-bottom approach would require an active participation of managers and would save time, but there is the risk of failure due to possible non-acceptance of solutions by end-users. The bottom-up approach would give better acceptance by end-users, but it would be questionable for managers and would take too much time. The best way would be the combination of the two approaches simultaneously. In that way some critical problems would have a solution:
− Exploitation of existing experience and infrastructure,
− Fast development of IS in parallel with the consolidation of institutions,
− Compatibility of the new legislation with the IS reality,
− Perspective for regional integration of IS.
− Unified training for all users.

The key to success for any approach is the involvement of managers in the right way. This is a difficult task for two reasons (at least): conflicts of interest in top management levels, and the influence of foreign factors. The first one would be expected as usual phenomena in developing countries. In this context more problematic may become the second reason - foreign factors. The aids from foreign institutions (governments and international organizations) are important for developing countries, and they have been considerable in Albania. Many projects realized in the public sector are funded by foreign institutions. But their effect may be indirectly negative if wrongly applied when:
− Making projects without a good knowledge of problems, conditions and needs. Projects may go wrong, local resources may be neglected, results may be negligible or even contradictory with the reality.
− Building of visible infrastructure but neglecting the "invisible" content. In the case of IST it creates to local managers and other people the wrong idea that it would be "sufficient" to install some good computers to solve all problems. The funds are used but the projects have no real impact.

In the case of MES the local managers and foreign experts neglected both the reality and the content. As result there were some big servers installed, a good local network, entry points for remote access, and nobody knows exactly what and how the information will circulate there. Of course there are vague ideas what may be done but nothing is in place as the old proverb says "the fish in the sea, the pan on the fire". The only positive aspect of this story is that the presence of a good infrastructure would push local managers to think a little more about IS, nevertheless this would be achieved without any expenditure through a correct technical attitude of foreign experts. A negative aspect is related with the position of the Education and Research Network (ERN). Without taking into account the fact that this network exists already, it was included in the project the creation of an ERN merged with the administrative network of the ministry. The result would be to throw away all we had achieved during the last years, and to give technological attributes to the ministry which is an administrative body. Someone could consider this case as a "destructive aid".

The same MES is managing the National Programme of Development on Information Systems and Technologies,

funded by the state. Contrary with the way MES is looking itself, the Programme is content-oriented, considering the technology simply as a tool for content processing. The platform of the Programme and the evaluation of project-proposals are done by experts outside the ministry. It is expected that the Programme may help to change the balance in favor of IS and stimulate the effective use of ICT. Only then we may have the chance to evaluate with realism the impacts of IS and ICT to each other, as well as to the society and the development of country.