

The third way, which promises far faster results, involves self-assembly, or "growing" particular nanostructures to be used as sensors. This most often entails one of two types of assembly. The first involves using a piece of some previously created or naturally formed nanostructure and immersing it in free atoms of its own kind. After a given period, the structure, having an irregular surface that would make it prone to attracting more molecules as a continuation of its current pattern, would capture some of the free atoms and continue to form more of itself to make larger components of nanosensors.

The classic example that comes up are nanosensors that can detect early signs of cancer. It's one of those diseases that detecting the small molecular changes at the start could literally be a matter of life and death.

Over time, as they grow cheaper, nanosensors should find their way to bring fundamental changes to the study and understanding of biological processes in health and disease, as well as enable novel diagnostics and interventions for treating disease. So we can see that advances based on nanotechnology and nanoscience could result in a new era in healthcare.

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E-COMMERCE IN UKRAINE

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In Ukraine investment in the Internet and e-commerce has increased dramatically in 2008 year. However, a range of obstacles blocks the growth of e-commerce. With regard to the technical hurdles, few people in Ukraine have access to the Internet and even fewer of Ukraine's 49 million citizens have credit cards for making necessary payments online.

The use of electronic documents is allowed only within the banking system. Through its regulations governing interbank payments, the National Bank of Ukraine allows commercial banks to use electronic documents to make necessary payments online.

Commercial banks which are members of the interbank payment system must use electronic signatures to make online payments, both within the banking system and to their clients. To become part of the online bank payment system and to enable the processing of relevant documentation, a client must enter into a specific agreement with its bank. In this case the use of digital signatures and electronic documents will be based upon a contractual relationship existing between the bank and its client.

There is thus a need in Ukraine for new e-commerce legislation which would govern electronic transactions on a larger scale. A number of e-commerce related draft bills are currently being prepared.

The Law on Electronic Documents and Documentary Exchange and the Law on Electronic Digital Signatures are now being drafted by the working group. If adopted by Parliament and signed into law, these draft bills will set forth the legal framework for electronic documents and electronic signatures in Ukraine, which could bring a significant boost to e-commerce in the country.

The Law of Ukraine on the Protection of Consumer Rights, dated May 12 1991 (1023-12, as amended), governs consumer protection in business-to-consumer transactions.

As a general guideline, the Consumer Protection Law provides that consumers have the right to claim, among other things, that:

- their respective rights be protected by the government;
- suppliers ensure due quality and safety of goods and services provided;
- all necessary information as to the quantity, quality and assortment of goods and services be made accessible; and

Existing Ukrainian legislation does not provide for any special rules for the taxation of goods and services purchased over the Internet.

The State Tax Administration of Ukraine has proposed that certain amendments be made to the Draft Tax Code, which is being considered by the Parliament of Ukraine. The Tax Administration maintains that a chapter dealing with electronic transactions, including the sale of goods and provision of services over the Internet, should be added to the code. However, it is difficult to predict what kind of tax regime with respect to electronic transactions might be introduced in Ukraine with the adoption of a new Tax Code.

Although it was expected that the new e-commerce legislation would soon be adopted by the Parliament in order to establish a firm legal framework for e-commerce development in Ukraine, the legislative process seems to be progressing slowly, and it is difficult to foresee when the draft bills will be signed into law. Further, the drafting process is still under way. Thus, the final outcome of the parliamentary debates on the e-commerce legislation could well differ from the draft bills.

It also appears that a system of online payments should be introduced, including a large increase in the number of credit cardholders resident in Ukraine.

In any event, it is clear that in the near future a range of legal and technical developments with respect to e-commerce will take place in Ukraine, which should be closely monitored.

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