

And, of course, radiation is a serious hazard. The huge cost of such journey and impossibility to overcome some of the most serious problems make it not expedient right now.

SpaceX were discoverers of stages, that can be used multiple times during take-off. The concept is rather simple: once you have launched a rocket carrying a satellite, and some preset velocity and altitude are reached, driving devices, performing the function of providing necessary thrust, start separating from the main assembly, and then instead of falling from the heaven and breaking up into countless pieces, these driving devices, having saved a certain amount of fuel during some period of time, being operated by a program, perform landing on some platform on the continental part of the Earth.

In 2015, the SpaceX company has announced a big project – the launch of two satellites getting ready to be tested in the Earth orbit – called Starlink. The aim is to cover the whole planet with wireless Internet connection. These launches were performed on 22nd of February. Next group of satellites will be delivered to orbit no sooner than 2019-20. Google corporation has invested over 1 billion dollars, admitting a large potential of this project.

The number of staff in SpaceX is constantly growing. According to some sources the total number of its employees is nearly 7000, and most of them are programmers – not engineers. It's because of a software, that is hard to develop for a rocket to work properly. The company represents itself as a fellowship of dreamers, working not for money but for the idea, for the development of the future, in which we're living, and they are succeeding.

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INFORMATION TECHNOLOGIES IN MEDICINE

Information technologies penetrate deeper into all areas of our present life. Medicine is no exception: in many medical institutions, various electronic systems of work management and automated document circulation have been successfully applied.

For centuries, a doctor could trust only his own hands, eyes and ears and his intuition which helped him examine a patient to determine the cause of illness. The first instruments used to assist a physician in examining patients were a glass mercury thermometer to take body temperature, a stopwatch to check for a pulse and a wooden ear tube – a stethoscope – to listen for a heartbeat.

In recent years, the technology has significantly improved and the time needed to get a clear X-ray image has considerably reduced. This was achieved thanks to the use of electron-optical amplifiers, high-sensitivity sensors and computers. All these top-notch techniques allowed to take "a glance" at a human body with no damage done. For this, there is no need to wait until some "breakdown" becomes evident. In the future, everybody is supposed to have a "genetic passport" of a citizen. It will contain information on the presence of hereditary genetic diseases in human genome and genes of predisposition to other diseases. All these systems have some previous experience being employed in medicine.

Due to the development of modern information technologies and, above all, communications, telemedicine (i.e. "medicine at a distance") the use of modern computer facilities for the processing and transmitting of information between the "center" and the "periphery" of health care system has grown. It will enable doctors, even in small towns and settlements, to consult specialists from medical centers in Ukraine, transfer disease histories from one clinic to another, conduct nationwide teleconferences on medical issues, arrange refresher courses for medical staff, etc.

More and more medical centers are trying to create their own "virtual offices" on the Internet – websites informing clients about the services provided 24/7. In addition to information support, a visitor can also use online services available on the website: for example, find information about the medical staff, get answers to questions, and even make an appointment with a doctor by filling in a relevant form available on the site, which significantly saves patient's time and facilitates the work of personnel involved in systematizing medical documentation. An entry form can have additional options, for example, a visitor can sign up for a particular doctor from the list, learn the doctor's hours and so on.

The latest trends in medicine such as Medical Hardware and Computer Systems have gained popularity. These are medical monitoring systems for patients: systems of computer analysis of tomography data, ultrasound, radiography; automated systems of intensive care, biological feedback, prostheses and artificial organs, which are based on microprocessor technology; systems of the automated analysis of data obtained as a result of microbiological and virological research, analysis of human cells and tissues. As an example, a microprocessor system made by scientists from Germany – a microminiature implant in the retina of the eye Argus II deserves particular attention. Currently, another step is being made to create devices that are directly controlled by human brain. A Japanese company Riken in cooperation with Toyota and a number of other organizations have designed a wheelchair that disabled people can use to drive a car independently.

Robotics also comes to medicine's aid. Robot-mannequins, work-couriers, work-sanitizers – all these are for real. There are large numbers of robots that perform extremely complex manipulations. For example, a self-assembling robot ARES is used for operations made without cutting skin. Da Vinci surgical robot allows most complex operations on internal organs to be carried out through the smallest holes in the skin. Sensitive manipulators accurately replicate movements of a surgeon's hands at the panel, at the same time filtering out undesirable shaking or accidental sharp movements. Robotic glove is a real breakthrough in medicine. This glove is equipped with sensors that can detect vibration, sound and temperature. It also has an accelerometer and a sound system that signals patients that require immediate attention. The glove collects information and transfers it to the computer.

But, unfortunately, we are talking about health care institutions in Western countries, not in Ukraine. Needless to say, the majority of doctors never heard about hospital information systems. I hope our government will meet the requirements such as availability of Internet access in health care facilities, availability of at least one computer in every hospital, deployment of "cloud" telemedicine services and revision of the existing normative base in health care.

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