The communicative capabilities of intelligent informational systems characterize the way the user interacts (interface) with the system.

Complex, poorly formalized tasks are tasks that require the construction of an original solution algorithm depending on the specific situation for which the uncertainty and dynamism of the initial data and knowledge may be characteristic.

Conclusion

Thus, the intellectual information system is a computer model of a person's intellectual capabilities in the purposeful search, analysis and synthesis of current information about the surrounding reality in order to obtain new knowledge about it and to solve various vital tasks on this basis. A promising way of improving and further developing expert systems is the creation of tools based on the joint use of different models of knowledge representation: production, semantic, frames and logical models. All these models are a mathematical tool for constructing advanced intelligent automated information processing and control systems.

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FUNCTIONS OF MOBILE COMMUNICATION IN THE FUTURE HOME

(TUIT Fergana Brench, Uzbekistan)

Today, connectivity is generally regarded as a high-end novelty in home devices, suchas utility meters, thermostats, security cameras, TVs and Blu-ray players, rather than afeature for the mass-market. This view will become out-dated as we move to a futurewhere connectivity is pervasive and embedded in virtually all household devices.Many analysts believe that the smart home of the future is likely to contain 15 to 30connected devices and sensors, all linked via a home area network and connected toservice providers' back-end systems and the Internet. Connected devices will range fromordinary household appliances through to solar panels and electric vehicle charginginfrastructure that both consume and generate electricity.

The combined revenue from the smart metering, home automation and home energymanagement (HEM) segments will be worth more than $44bn in 2016,

according to thecombined forecasts from market analyst companies ABI and Berg Insight. The overallrevenue potential of the smart home, however, will be considerably higher as devicesfrom the entertainment, health and home security sectors also become connected.

Mobile connectivity will be a crucial ingredient in bringing together the different partsof the smart home puzzle. Without mobile networks' extended coverage, smart homeservices will only be available in limited locations and will miss the mass-marketopportunity. With deepexpertise in technology change management and a long-term technology roadmap,mobile operators are attractive partners for smart device and service providers.The smart home services market is not an entirely new opportunity. Home automationand home energy management companies already cater to wealthier niches of the overallmarket. However, in order to put together a package of smart home applications for themass-market, different providers of devices and services will need to collaborate.

In some areas, companies from different sectors see themselves competing for"ownership" of the consumer: utilities companies have a route to the customer viasmart meters; telcos can base their proposition on broadband hubs and set-top boxes;security companies can leverage connected security systems; and gaming providers candevelop new applications for connected set-top boxes. But many of these companieswill also need to co-operate to realise the full potential of smart home services. Infact,collaboration will be a must for the success of the smart home services market.

These devices will range from utility meters that measure energy, gas and waterconsumption to household appliances, solar panels and electric vehicle charginginfrastructure that both consume or generate electricity, together with other connecteddevices from the entertainment, health and home security sectors. It will be thecombination of these devices, the data they provide and the control actions they enablethat will contribute to a rich array of smart home services, as illustrated below.

Compared to the home of today, the smart home of the future will contain far moreconnected devices. Market research house Parks Associates, for example, forecasts thatthe number of connected devices and sensors in an average US home will increase fromfour today to sixteen in 2015. At that time, 13% of all US households are forecast to haveenergy management systems installed and nearly 20% are expected to have monitoredsecurity systems in place – up from 2% and 18% today respectively. In the smart homeof the future, these devices will be integrated into intelligent, interconnected andinteroperable systems.

There is clearly a very promising future for smart home services. The current avenuesof development are in smart energy (prompted by a policy mandate for smartmeters coupled with new connected devices in the home ranging from appliances toelectric vehicle charging points and local generation) and entertainment (home areanetworking).

The long-term direction of the smart home involves numerous connected devices– asmany as 30 smart sensors and devices by some estimates – which share a commoninformation highway. This would enable the delivery of a range of value

added servicesto meet consumer lifestyle needs. The mobile industry has an important role to play in several respects.
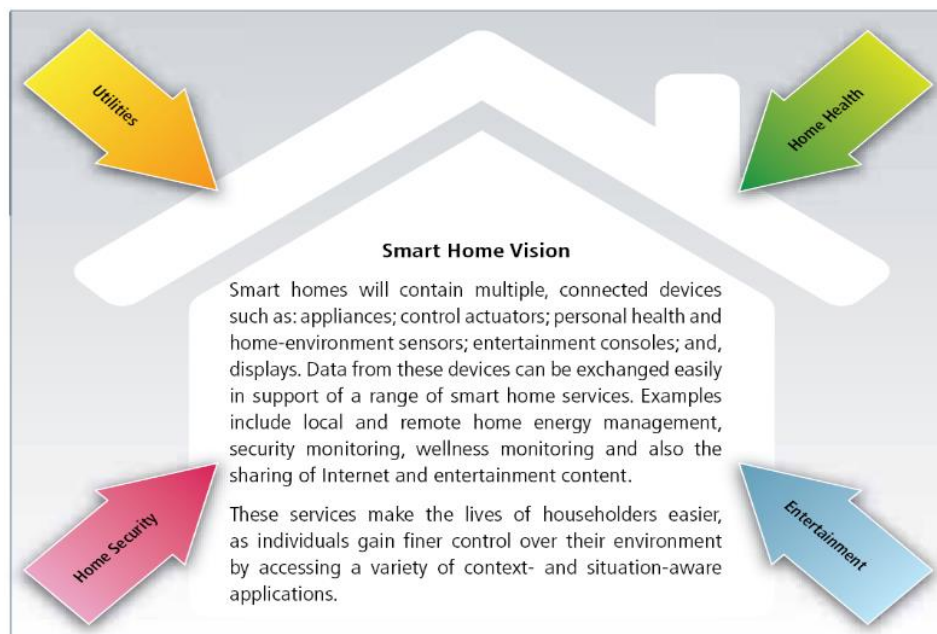

Fig. 1. Smart home vision driven by four key industry segments

Firstly, mobiledevices are the most readily-accepted connected consumer devices in the world; mostconsumers are familiar with mobile devices and their sophisticated, yet intuitive, userinterface functions.

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ИССЛЕДОВАНИЕ КАЧЕСТВА КЛАССИФИКАЦИИ ИЗОБРАЖЕНИЙ СВЁРТОЧНОЙ НЕЙРОННОЙ СЕТЬЮ

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В настоящее время технологии компьютерного зрения широко распространены. Они применяются в задачах распознавания лиц, пешеходов, объектов, для медицинского анализа, а также во многих других задачах. С развитием технологий и увеличением вычислительных мощностей современных компьютеров стало возможным обучение нейронных сетей с большим числом скрытых слоёв (глубоких нейронных сетей). На данный момент в задачах классификации