

**SMART HOMES ENHANCE OUR LIFESTYLE EVERYDAY**

You won't believe the level of comfort, convenience, control, security and efficiency until you've experienced it for yourself. A smart home is equipped with electronic devices that can be controlled remotely by a smart phone.

The term 'smart' is typically applied to an 'intelligent' web-connected electronic device or system which may operate stand-alone or in a network with other devices. It usually involves some form of user interaction.

New technology is enabling the creation of smart homes, integrating devices to make the home a better place to be in terms of safety, comfort, productivity and well-being.



**SMART HOMES SYSTEMS**

- Environmental Control System (Heating, Ventilation and Air Conditioning - HVAC)
- Household Appliances (clothes dryers, washing machines, refrigerators, dishwashers, ovens, coffee-makers, microwaves, etc.)
- Consumer Electronics (TV, radio, audio-video equipment, game consoles, etc.)
- Building Components (blinds, curtains, windows, doors, security cameras, detectors, sensors, etc.)

**THE THREE GENERATIONS OF SMART HOMES**

**First Generation**

Wireless Technology with Proxy Server

**Second Generation**

Artificial Intelligence Controls Electrical Devices

**Third Generation**

Robot Buddy who Interacts with Humans

**HISTORY OF SMART HOMES**

- Smart homes had their origins, as most innovations, in theory long before they become a reality. While science fiction writers depicted these homes throughout much of the 20<sup>th</sup> century, their genesis lies in the development of the systems that comprise them
- The first 20 years of the 20<sup>th</sup> century saw the invention of the vacuum cleaner, dryer, washing machine, iron, and toaster
- The first smart device was created approximately 45 years later. Known as the ECHO IV, it could turn home appliances on and off and control home temperatures; unfortunately, it did not sell well
- Home automation technologies began to be built into luxury dwellings decades ago
- The first smart home models and devices began to hit the consumer market in the early 2000s, with the proliferation of the Internet and related technologies a decade earlier

### ADVANTAGES OF SMART HOMES



#### Comfort

Smart Homes can dramatically improve home ambiance for any occasion or mood, while also enjoying greater levels of comfort & ultimate relaxation experience



#### Convenience

Smart Homes give users remote access to systems including heating and cooling systems, intercoms, music and multimedia devices throughout the home



#### Control & Accessibility

Smart Homes technology also greatly improves the usability and functionality of any home with total control at the fingertips or by voice-command systems



#### Security

Smart Homes include advanced security systems with cameras, fingerprint identification, motion sensors & a link to security authorities



#### Energy Efficiency

Smart Homes offer enhanced energy-efficiency to save on electricity, water and natural gas, thereby reducing the strain on natural resources



#### Resale

Automating a home can be a worthwhile investment in increasing its market value & attracting possible buyers in the future, as sellers will've an effective selling points

### CHALLENGES OF SMART HOMES

#### Linking Disparate Systems

- ✦ The smart home market is fragmented, at present. Many competing manufacturers are developing disparate smart home systems and technologies
- ✦ It's easy to integrate devices made by the same vendor, but that requires, in many cases, consumers to buy replacement devices

#### Limited Functionality

- ✦ Integrating devices from disparate vendors often results in limited functionality and unreliable service
- ✦ Further, many systems on the market have complex interfaces that limit the functionality of smart homes
- ✦ Finally, app-based smart home systems, while cheaper than fully custom integrated systems, have more limited functionality than full systems

#### Costs

- ✦ Fully integrated custom systems are expensive and often require a consultant to install them, and structural changes to the home, both costs of course tacked on to the price of the system itself, in addition to the costs of maintenance and repair

#### Awareness

- ✦ Due to the market fragmentation and limited existing consumer adoption, there is little mainstream awareness of what is currently available
- ✦ The market is almost entirely comprised of the wealthy who are offered the features as part of either new construction or relatively new high-end homes on the market

### FUTURE OF SMART HOMES

While some technologies are only in early development, the future is already here. The market is growing rapidly and its future looks bright, with the support of many drivers including the decreasing costs of smart technologies; increased government regulation regarding energy consumption; increased energy costs; increased consumer awareness of, and concern about, the environment; and consumer security concerns.

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