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Perception and Preferences towards Smart Home Technologies

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Abstract

Consumers establish their belief about the features of the alternative products that they would consider and determine, based on those perceptions, their attitudes towards the products.

Consumers Perception makes certain importance about a product or service when a consumer makes initial contact. At this juncture all of the senses are engaged in getting brand marketing correspond messages. In marketing prose, there are four distinct stages of perception arise during consumer information processing: i.e. sensation, attention, interpretation and retention. Smart homes will be filled with connected products are to make our lives easier, convenient, and comfortable. The smart home gadgets interact, seamlessly and securely; control, monitor and improve accessibility, from anywhere across the globe.The major potential of a smart home is enormous; for e.g., smart homes are essentially designed for old-age people because such homes are capable of sensing, processing and relaying their main health information and corresponding this data through integrated devices and networks to protectors.

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Introduction

Back in 1923, Swiss architect Le Corbusier (1887–1965) described a house as "a machine for living in"— and slowly, during the 20th century, his speech turned into reality. First, the arrival of convenient, electric power started to strip away the hard work from all kinds of domestic tasks, including washing clothes and water pump motor and water heater and grinder. Then, transistors made electronics affordable in the mid-20th century, home appliances started to control themselves in a limited way, using built-in sensors. But it's only now, in the 21st century, that the vision of the fully automated, **smart home** is actually being realized. Thanks to the Internet, it's easy to set up virtually any electric appliance in your home so you can control it from a Web browser anywhere in the world. And, before much longer, all kinds of net-connected machines will be talking to one another, running much more of our lives automatically through what's known as the IoT. IoT(Internet of Things) means taking all the things (products) in the world and connecting them to the internet.

Preference formation is the consumer turns the perception into product preferences in the second half of the buying evaluation phase. Most models assume consumers have a utility function for attributes, which describes how the consumer's valuation of the product varies with alternate levels and combinations of attributes. The consumer arrives at an attitude toward the product through the same evaluation procedure.

Home automation is a modern technology that modifies home to perform different sets of task automatically. In our nation is already the buzz word, particularly as the wave of second generation home owners raises, they want more than the basic need, i.e. food, cloth, shelter, water, and electricity. The first and foremost benefit of Smart Homes is comfort and

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convenience, as more devices can deal with more operations namely surveillance, lighting, temperature, and so on, which in turn frees up the resident to carry out other tasks. This smart home technology happens to have an interface with IoT. Information Technology automation will be the key to linking the gap between human limitations and technology's capabilities. In home automation, information can be instantaneously collected and flawlessly passed between devices as it's simultaneously analyzed. Smart home is an appealing perspective for the Internet of Things (IoT), by connecting the IP gateway directly to the Internet or through a home gateway; this system can be controlled remotely using a Computer, mobile phone, Tab or other gadgets.

Objective of Study

- To find gap between human limitations and technological capabilities
- To identify the possibilities for home security, convenience and comfort.
- To provide healthy, happy and independent life for elderly and disabled people

Significance of Study

The smart homes are operated through the internet and the home appliances are controlled by various devices. The consumer commands over the internet will be obtained by the Wi-Fi modems. The Microcontroller has an interface with this modem. These system statuses are displayed through the LCD display, beside with the system data. This is a distinctive IoT based Smart Home Automation system, for controlling all the home appliances. Apart from smart homes, the further development is smart cities, which would take the IoT to the next level. Apparently smart homes are presently a small part of our daily lives that the Internet of Things will transform our future in the upcoming years.

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Limitations of study

Through technology personal information is fetched and transferred in the wireless network, privacy issues become more obvious that must make use of the full advantages of smart home technology. Normally, security deals with cryptographic techniques employed to secure communication channels to ensure message integrity, confidentiality, authenticity, but privacy studies the issues involved in faith and risk associated in the collection, storage, distribution and association of personal information.

Review of literature

Davit Marikyan, Savvas Papaginnidis, Eleftherios Alamanos (2018) in Science Direct: A smart home is a residence equipped with smart technologies aimed at providing tailored services for users. Smart home technology make it possible to monitor, control and support residents, which can enhance their quality of life and maintain independent living. Researcher provides a wide-ranging view of smart home explanation and its characteristics. Then researchers revolve towards a detailed discussion of the smart home types, related services and its benefits. Finally outlining the current state of smart home benefits, the researchers discuss the obstacles and challenges to implement smart home technology.

Parisa Raei, Abdelhamid Bouchachia (2016) : Researchers identified the various categories where smart home technologies provide useful assistance to elderly residents

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Emergency help	Fall detection an fall prevention
Temperature checking	Helping with hearing and visual impairment
Automatic lighting	Timely and precise information on drug side effect
Intruder alarm	Remainder for future appointments or events
Monitoring the physiological factores	Blood pressure, glucose levels

Biljana L.Risteska Stojkoska, Kire V. Trivodaliev (2016) in Scicece direct: Although Internet of Things (IoT) brings significant advantages over traditional communication technologies for smart grid and smart home applications, these implementations are still very rare. They believe on a broad review, this article intends to add value towards tightening the gap between the present smart home technology and the outlook of their integration into an IoT enabled environment. They suggest a whole structure which integrates different components from IoT architectures/structures proposed in the article, in order to efficiently incorporate smart home objects in a cloud-centric IoT based solution. They identify a smart home management model for the proposed framework and the main tasks that should be performed at each level.

Lili, Eleni Stroulia, Loanis Nikolaidis (2016) in Science direct: They identified and analyzed and found that: (1) technology-readiness level for smart homes and home health monitoring technologies is low; (2) smart homes health technologies are utilized to monitor activities of our daily living, decline intellectual capacity, and heart condition in older people; (3) observably no proof that smart homes health monitoring technologies assist deal with disability prediction and health-related life, or fall prevention; and (4) apparently inconsistent proof that smart homes health monitoring technologies aid attend to chronic obstructive pulmonary disease.

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Charlie Wilson, Tom Hargreaves, Richard Hauxwell-Baldwin (2017) in Science direct: Smart homes are a priority area of strategic energy planning and national policy. Consumer adoption of smart home depends on potential users recognizing obvious advantages with acceptable levels of risk.

Results of Discussion

What is a smart home?

A **smart home** is many appliances are wired up to a centralized computer so that they can automatically be set on and off at certain times for e.g., heating machines can be set to come on robotically at 6:00AM on rainy season and some events will occur i.e. lights can be switched on only when a photoelectric sensor detects that it's dark.

For the most part homes already have a certain amount of "smartness" because many appliances already contain built-in sensors or electronic controllers. Almost all recent washing machines have programmers that make them perform a distinctive series of washes, rinses, and spins relying on setting their various dial and buttons when consumer first switch on.

The smart home technologies have the maximum impact in energy saving. This is where IoT comes into place, and makes it such an integral part of the home automation. With the aid of smart home technology, devices can be controlled as and whenever you require.

The major benefit of smart home lies in the reality that the settings are controllable from your mobile phones and other devices. Smart home devices can help decrease costs and save energy. The smart home technology includes smart lights, smart televisions, smart heater, smart air coolers and other home appliances. Wearable's (Smart Watch, fitness brands, smart headphones, smart clothing) are also expected to witness the growth in the future.

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But do we really need a smart home?

Isn't it lazy and indulgent to have a machine switching the lights on and off for you when you can do it perfectly easily yourself? Bear in mind, though, that many elderly and disabled people, and those with special needs, struggle with simple household tasks. Home automation could make all the difference between them being able to live happily and independently in their own home.

As the population ages, governments and medical charities are looking at home automation with increasing interest: why not use computers, robots, and other technologies to provide the support that vulnerable people need to keep them happy, healthy, and independent? For e.g., people with dementia can have their homes fitted with automated sensors that check whether cookers have been left on or taps have been left to overflow.

Elderly people prone to falling can have their homes fitted with lighting activated by motion sensors, so that if they get up in the middle of the night they're not stumbling around dangerously in the dark. Blind people can finally buy ordinary household appliances and use one simple computer controller, programmed to suit their personal needs, to manage them all.

For elderly or disabled, home automation systems like this can make all the difference to your quality of life, but they bring important benefits for the rest of us as well. Most apparently, elderly citizens get better home safety, security, comfortable, and convenient.

Furthermore, smart home tecnology can assist aged people to live a highly independent and superior life.

More importantly, if they integrate energy monitors, such as thermostats, or sensors that cut the lights to unoccupied rooms, they can help you reduce household energy bills; automated

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systems such as Bye Bye Standby mode, which cut the power to appliances when they're not being used, can dramatically reduce the energy wasted by appliances such as washing machines, , and TVs when they're not actually being used.

The major purpose for such home automation and digital environments is mounting to make available better conveniences and enhance their quality of life. Aged people can enhance their quality of life is turning a tedious environment into a happy and healthy environment, making them an extremely comfortable place to breathe.

How do smart homes work?

A smart home is meant to be a distinctive world, comprising of various devices, including sensors, actuators, displays and computational elements interacting and exchanging information with users to provide them with automated, customized, and secured services. These types of environments are designed to make life better and secure through information processing, automation and personalized services.

In a distinctive smart home technology, IoT shaped by the amalgamation of electronic elements that are likely to sense, process and transmit data collected from the mix of various devices, users and computers connected in the environment with a view to responding with custom-made facilities to users.

Smart Home Environment Security Issues

Elderly citizens living in the smart home are progressively more intending on information from wireless networks that are monitoring, collecting and analyzing their data about them, their fundamental signs, location, motion, appliances, machines and utility usage, and sending them to their well wishers or other legitimate agencies for a timely decision.

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Like this personal and sensitive information produced by the interactions between diverse intellectual devices and sensors are corresponded to external world through further existing network technologies. The integration of various gadgets, networks and various technologies, together with the Internet, put down no room for neglecting the security issues, architectures, protection and defense mechanism.

Conclusion

Involvement is the degree of perceived relevance and personal importance accompanying a particular product purchase decision. In high involvement decisions, the consumer carries at extensive evaluation of the products. High involvement product purchases incur high expenditure or personal risks. The consumer spends more time and effort in arriving at the right decision.

In high involvement situations, marketers need to provide information as the customer will require such information to evaluate the product he is planning to purchase. Marketers must also ensure that the customer is aware of important attributes of the product and also ensure that he correctly evaluates their consequences.

Maybe you're still not convinced—and maybe you're right. Do you really need things like this? Do you need to buy evenmore appliances just to control the ones you already have? Isn't it just as easy to get into the habit of switching things off yourself? Gadgets that kill your TV's standby mode sound cool, but how hard is it to pull out the plug? What about switching the TV off altogether and reading a book? Or putting your games console away in the cupboard and getting into the habit of taking walks in the country instead? And instead of going to great lengths to wire up your house for while you're away on vacation, how about befriending the neighbors and asking them to look out for you instead? For many of us, a house really is a machine for living in—and if that's the way you like living, it's just fine. But it's important to

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remember that there are plenty of alternatives to living that way as well. If small is beautiful and simple is best, the smartest home might be one that has no gadgets at all!

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