



THE RIGHT CONNECTION

CONNECTED SPACES AND INTERNET OF THINGS (IOT) ARE MAKING NOT ONLY ENTERPRISES AND COMMERCIAL SPACES TECH SAVVY, BUT RESIDENCES TOO.

BY BINDU GOPAL RAO

The rising demand and popularity of the concept of smart architecture has led to technological advancements in Connected Spaces and the Internet of Things. Every user wants to have maximum control of his space with minimum to no effort.

TECH ADVANCES

As the expectation of consumers increases in terms of

building comfort and air quality, there is also more awareness about the need to use energy in a sustainable manner. IoT and Machine Learning are being used to accomplish things that were once only theoretically possible, such as perfect air and temperature balancing or remotely controlled HVAC systems. "75F creates bespoke solutions for each site since we recognise that every building is a dynamic entity and requires a dynamic solution. Our centralised solution monitors make predictions for all three

1. Indoor stadium courtesy Spark Electronics that uses several new technologies in connected spaces and the internet of things.

2. Rutuja Milind Rode, Executive Director, Meta Arch

elements based on real-time data from multiple devices and sensors around the building. This translates into millions of data points, but thanks to cloud computing, this can be processed quickly and efficiently to provide building managers with actionable solutions. Indian managers are becoming increasingly conscious of the importance of building conditions for employee productivity, as well as the advantages of sustainable energy usage to save cost and be environment friendly." IoT-powered control systems are self-learning, which means that they constantly adjust to new inputs and patterns.

AUTO MODE

Home automation systems are striving to provide increased comfort to our spaces while also enhancing their beauty and aesthetics. Automated controlling devices, connected through one central hub over the internet infrastructure to all home appliances, are now getting better each day. This includes sensors mapped onto devices. Integrated free mobile apps allow the users to control every little element in their homes / offices. "Users can operate their TV sets, cook tops, electronic fireplaces, and curtains by a single touch on their smart phone devices. One can also control lights, appliances and indoor climate. Additionally, these apps also offer the system to group different types of 'scenes' or 'maps' inside our homes - such as 'sleep' or 'read'. In offices, devices can be used for attendance through face recognition, turning off devices when not in use, mapping the performances of the workplaces and so on. It is predicted that furniture, just like wearable devices, would collect data to understand the ergonomics of different people and its effect on workflow productivity," says Architect Rutuja Milind Rode, Executive Director, Meta Arch Pvt. Ltd. Usually, the IoT devices and platforms come equipped with various sensors, processors and communication hardware that allow them to detect, collect, send and act on data they acquire from their environments. The IoT devices and platforms will be connected to a single platform that

communicates with the devices and collects data from them.

RETROFITTING TECHNOLOGY

Moreover, the latest IoT technologies can be retrofitted to the existing IoT devices and platforms to make them work more effectively. "Things just keep getting smarter in terms of software, communication protocols and more predictable context in more applications like residential, commercial, hospitality and more," says Tarun Lala, Co-Founder & Director, Fanzart. Manufacturers are coming up with smart chips that are designed to enable automation by retrofitting it to an existing infrastructure. These chips help to get the control panels synchronised with the cloud server and the space can be uplifted technologically. Nitin Gagneja, Founder, Flying Vertex Studio, says, "In some cases, these features will get auto-installed in the IoT platforms via software updates. However, the upcoming IoT devices will come pre-equipped with advanced features and functionalities." Technologies such as Amazon or Google Homes, as well as IoT and AIML framework technologies, are conscious that they must become highly user-friendly for

3&4. The rising demand and popularity of the concept of Smart Architecture has led to technological advancements in Connected Spaces and the Internet of Things courtesy Meta Arch.





8



10



7

older generations as well. It's easy to see how these types of technologies might be retrofitted or made more configurable and user-friendly.

SMART CHOICE

Today, we are moving away from wired legacy controllers and protocols such as KNX into widely accepted wireless network protocols such as Zigbee created specifically for IoT based applications. It has enabled the utility and acceptance of retrofitted smart home automation products. Farhan Jimmy Mistry, Innovation Officer, Della by Jimmy Mistry, says, "The change isn't a drastic advancement in the technology itself over the last few years but rather the development of other key components such as IoT Gateways and a revamped user interface (Think Alexa skills and Apple HomeKit) along with more affordable

5. Tarun Lala, Co-Founder & Director, Fanzart

6. Nitin Gagneja, Founder, Flying Vertex Studio

7. Flying Vertex helps architects to enjoy better visualization, on the other hand, providing realistic visualization effects to the customers.

8. Fanzart fan is a humanoid that automatically adjusts its rotation based on where people are present.

9. Flying Vertex Studio specializes in visualizing.

10. Duct sensor by 75F creates bespoke solutions for each site.



9



11

chipsets to enable a much easier Do-it-Yourself home installation acceptance process." Pranesh Chaudhari, Founder and CEO Zunpulse, adds, "Technological change, in specific, is inherently disruptive. New technologies hold immense potential to improve productivity while also entailing difficult transitions. In this battle of staying up to date with new and emerging technologies, it is imperative for organisations to keep pace. Slow adaptors may lose customer interest and subsequent market share. However, keeping up pace has its own challenges. In the world of IoT, the technology being outdated is not a problem until your appliance does not run out of its life cycle. Technology upgradations can be achieved by OTA (Over the Air) updates which simply get implemented by upgrading the software/app."

CUTTING EDGE

New technologies in Connected Spaces and the Internet of Things are low energy Bluetooth 5.0 devices, 5Ghz based Wi-Fi, Wi-Fi 6 standards, Ultrawideband (UWB), and Quantum internet. Siddhant Sahay, Co-Founder & CEO, Spark Electronics, explains, "The new technologies have a variety of use cases, including home and non-residential centers. These low energy Bluetooth devices are present even at the heart of every smartwatch, wireless earphones, and speaker. The portability of the devices and the low power consumption has propelled the use cases. 5Ghz based Wi-Fi has added to the new leap in home entertainment. Wi-Fi 6 is an IEEE standard for wireless local-area networks and the successor of 802.11ac. It provides excellent high-speed connectivity compared to previous generations. Ultrawideband technology (UWB) uses radio waves and acts as a Real-time Location System (RTLS). Quantum internet will be based on the principles of quantum mechanics. It will transmit data very differently than the way we do today. All the data that is shared today is encrypted."

COVID IMPACT

COVID-19 is the single most significant event that has accelerated the deployment of this technology by at least 15 years. Companies like Zoom and WebEX have had their goods for a long time, but the adoption that occurred during the pandemic, with the arrival of high-speed internet and the beginning of people being comfortable in front of screens, has accelerated their acceptance. "The COVID-19 issue has greatly enhanced our day-to-day



12

activities, such as meetings with clients or colleagues, online classes, and online trainings. Working from home has become the new standard, and as a result, everyone needs to be able to communicate with one another not just over the phone, but also through an audio/visual platform. COVID-19 has verified that a person residing in Dubai must be able to keep an eye on his or her Indian parents or relatives. It has also guaranteed that company continuity is maintained despite the absence of actual meetings. As a result, the epidemic has significantly increased technological adoption," says Rishi Jain, Managing Director, Jain Group.

WEBSITES:

- MAIA Estates www.maiaestates.in
- MOHH www.mohh.com
- Artlivings www.artlivings.com
- Hermosa Studio www.hermosastudio.in
- Tisva www.lightsbytisva.com
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- Panasonic <https://lsin.panasonic.com/>
- Sans Souci <https://sanssoucilighting.com/>
- Hafele <https://www.hafeleindia.com/en/>



13



14



15

11. The development of other key components such as IoT Gateways and a revamped user interface along with more affordable chipsets enable a much easier Do-it-Yourself home installation acceptance process.

12. Zunpulse offers solutions to make your home Smart with just one tap on the Zunpulse app.

13. Siddhant Sahay, Co-Founder & CEO, Spark Electronics

14. Pranesh Chaudhari, Founder and CEO Zunpulse

15. Rishi Jain, Managing Director, Jain Group