

Homes 3.0

Intelligent. Intuitive. Integrated.



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Connectivity

The state or ability of being connected.

Opportunity

There exists a tremendous opportunity to develop an integrated AI and IoT system into our homes. This system would transform living spaces into passive, attentive environments, enhancing the comfort and care of residents.



Impact

This system would not only impact our interaction with our homes or rather lack their of, but this system could impact our communities and even our planet .



Trends and Drivers

IoT

"IoT adoption has been steadily on the rise over the last decade. The IHS estimated an installed base of 15.41 billion devices in 2015, nearly tripling to 42.62 billion by 2022. It's expected to grow at an even more rapid pace, reaching 75.44 billion by 2025." (Daws)

Artificial Intelligence

"The global AI market, valued at over \$136 billion in 2022, is predicted to grow to \$309.6 billion by 2026, expanding at a Compound Annual Growth Rate (CAGR) of 39.7%"

("Artificial Intelligence (AI) Statistics & Facts for 2023 - NeuroSYS")

Trends and Divers

IoT

- Smart Appliances
- Cell Phones
- Indoor Air Quality Monitors
- Noise Control and Sound Systems
- Environmental Sensors
- Gardening and Plant Care Systems
- Wearable Health Devices
- Voice Assistants
- Sleep Monitors and Bedding Systems
- Fitness and Wellness Equipment
- Smart Water Systems
- Smart Windows and Blinds
- Energy Management Systems

- Smart Thermostats
- Intelligent Security Cameras
- Smart Lighting Systems

Artificial Intelligence

- Google Assistant and Google Home
- Amazon Alexa and Echo System
- Apple HomeKit with Siri
- Samsung SmartThings
- Nest Learning Thermostat (by Google)
- Microsoft Cortana and Azure IoT
- Open Source AI Platforms
- IBM Watson IoT

Design Direction



A long, empty, modern glass-walled corridor at night. The floor is highly reflective, mirroring the lights and structures outside. On the left, a glass wall reflects a cityscape with green and yellow lights. On the right, a glass wall reflects a cityscape with orange and red lights, including a prominent skyscraper. The corridor leads towards a bright light at the far end, creating a sense of depth and perspective.

Passive

Not acting to influence or change a situation.

The background is a digital illustration of a futuristic city at night. A person's silhouette is walking away from the viewer down a wet, reflective street that mirrors the city lights. The sky is dark with some clouds, and the city is filled with tall, glowing skyscrapers. Overlaid on the scene are various digital elements: glowing blue and orange lines resembling circuitry or data paths, and several semi-transparent blue and orange circles of different sizes, some of which look like data points or floating particles. The overall color palette is dominated by deep blues, oranges, and greys, creating a high-tech, cybernetic atmosphere.

Digital Ecosystem

A group of interconnected information technology resources that can function as a unit.

Passive Ecosystem

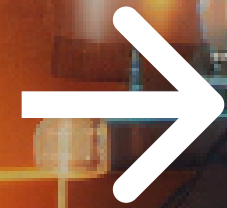
By integrating the Passive Home Hub, a tool powered by AI and IoT, we can create a home system that autonomously adapts to residents' needs using real-time data from IoT devices, eliminating the need for manual input.



How Does The System Operate?

IoT

- Environment Control
- Monitoring Movement and Safety
 - Facilitating Communication
- Emergency Alerts and Responses



AI

- Predictive Analytics
- Automated Decision-Making
- Enhancing Communication and Interaction
- Customization and Learning
- Telehealth and Remote Consultations



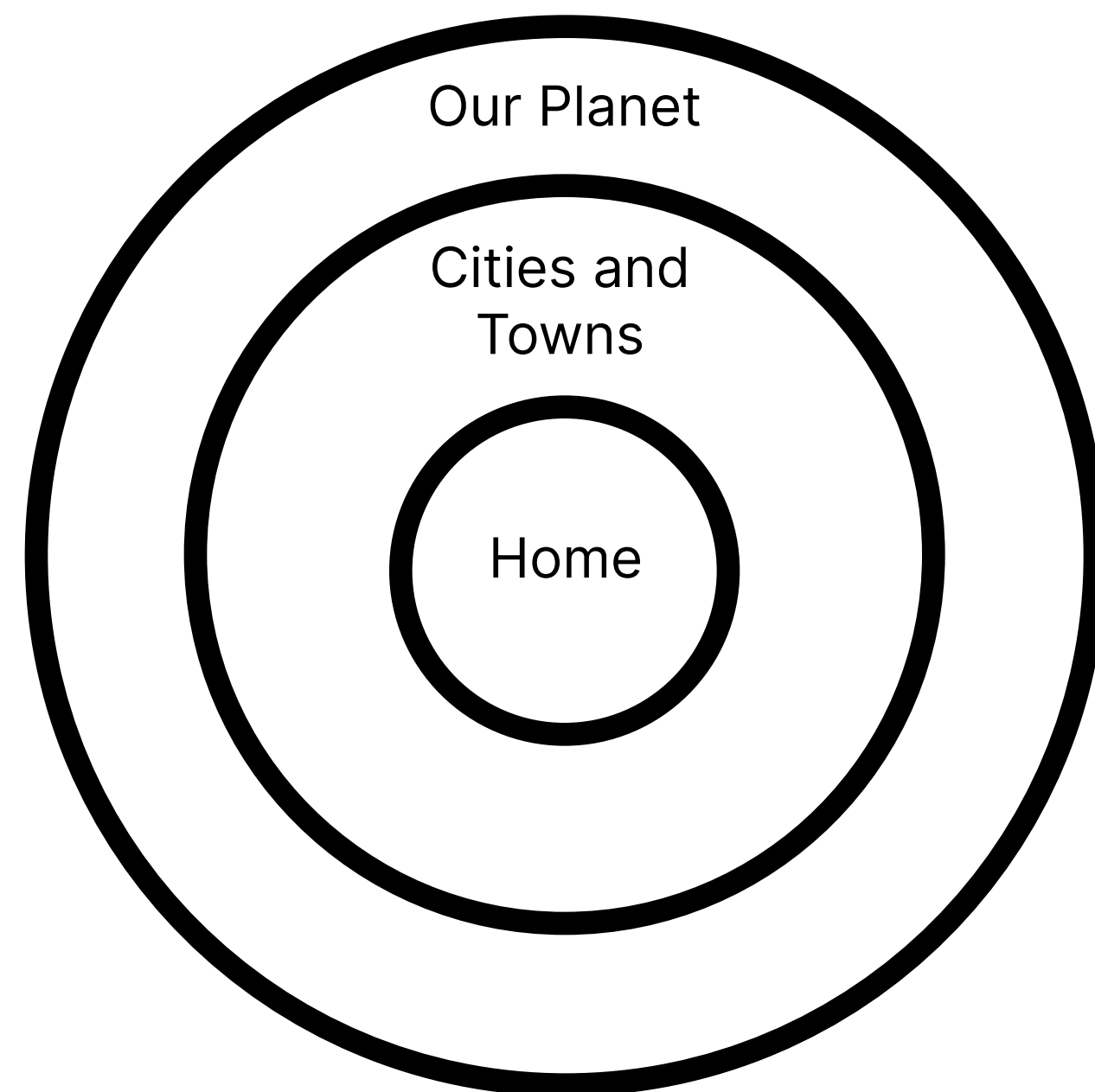
Passive Action

Data
Collection

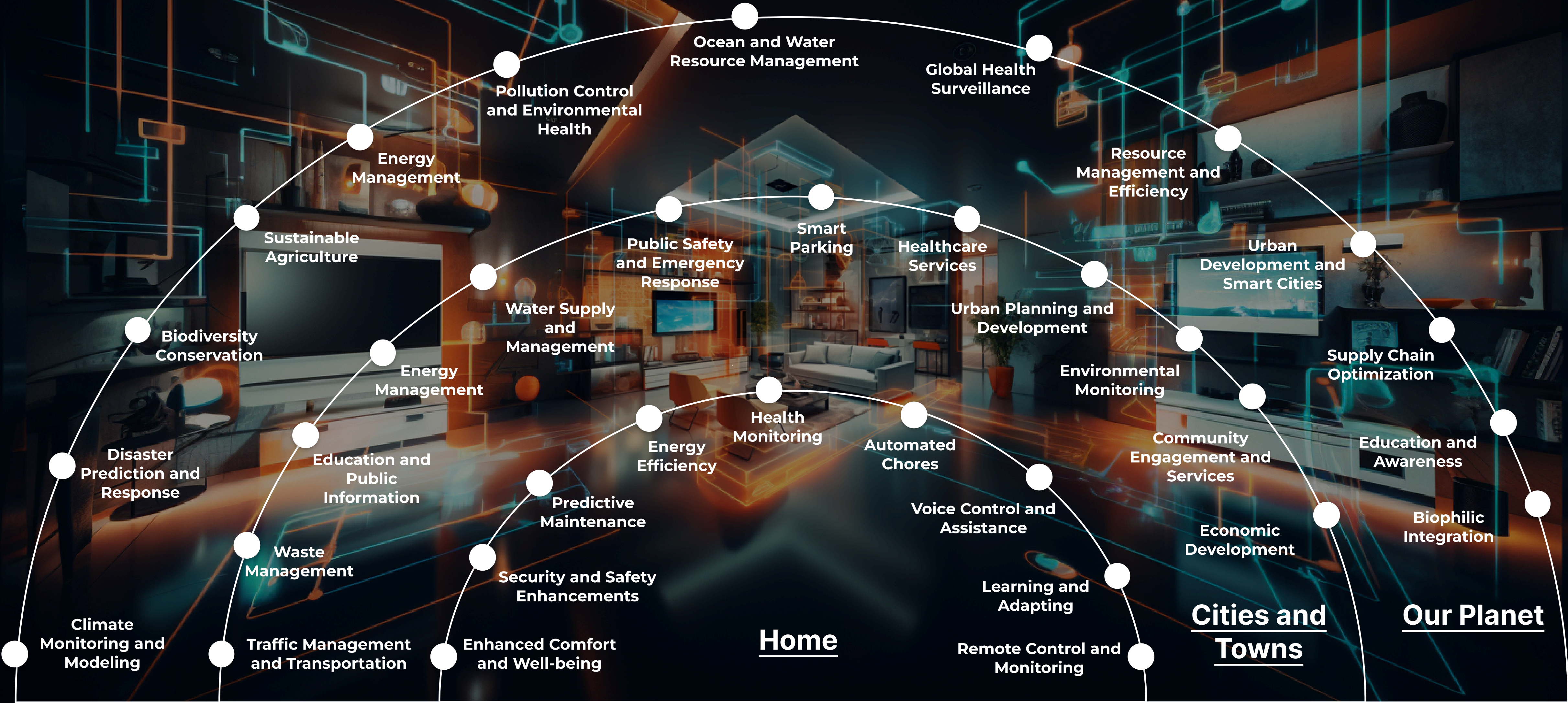
Data Analysis and
Interpretation

Implications of System

The integration of AI and IoT ecosystems in homes creates intelligent environments that enhance well-being, streamline maintenance through predictive monitoring, and promote energy efficiency.



Implications of System Continued



Scenario





Passive Bed Time Routine

Data Collection- IoT

IoT would collect data about your nightly routine.

- Bed time
- Heart Rate
- Body Temperature
- Activity Levels
- Air Quality
- Sleep Quality
- Sleep Duration
- Breathing Patterns
- Noise Levels
- Room Temperature



Data Analysis and Interpretation AI

AI would then use collected data to create a person profile to give you the best sleep.



Passive Action

Artificial Intelligence would then make alterations to your home to set you up for the optimal sleep.

- Temperature Regulation
- Lighting Control
- Sound Management
- Air Quality Optimization
- Bed Adjustments
- Ambiance Setting
- Security Assurance
- Night Mode activation on all devices
- Device Connectivity
- Reminder System





Thank you

Sources

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