

# Homes 3.0

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Intelligent. Intuitive. Integrated.



Mackenzie Thomas

# 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

Environmental Sensors

Wearable Health Devices

Sleep Monitors and Bedding Systems

Smart Thermostats

Noise Control and Sound Systems

Gardening and Plant Care Systems

Voice Assistants

Smart Lighting Systems

Energy Management Systems

Smart Water Systems

Smart Windows and Blinds

Fitness and Wellness Equipment

## 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

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# Passive

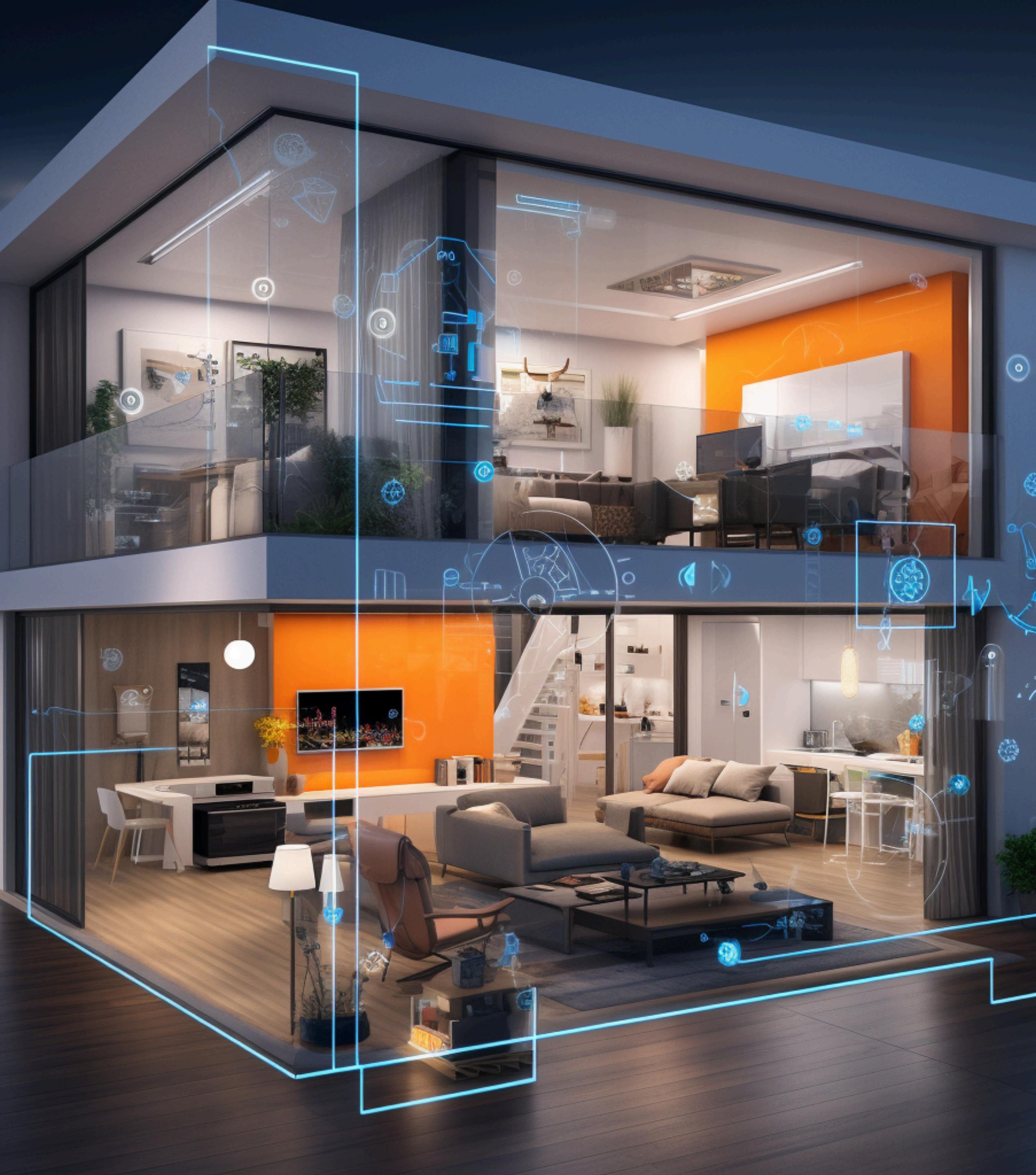
Not acting to influence or change a situation.

# 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

Data Collection

## AI

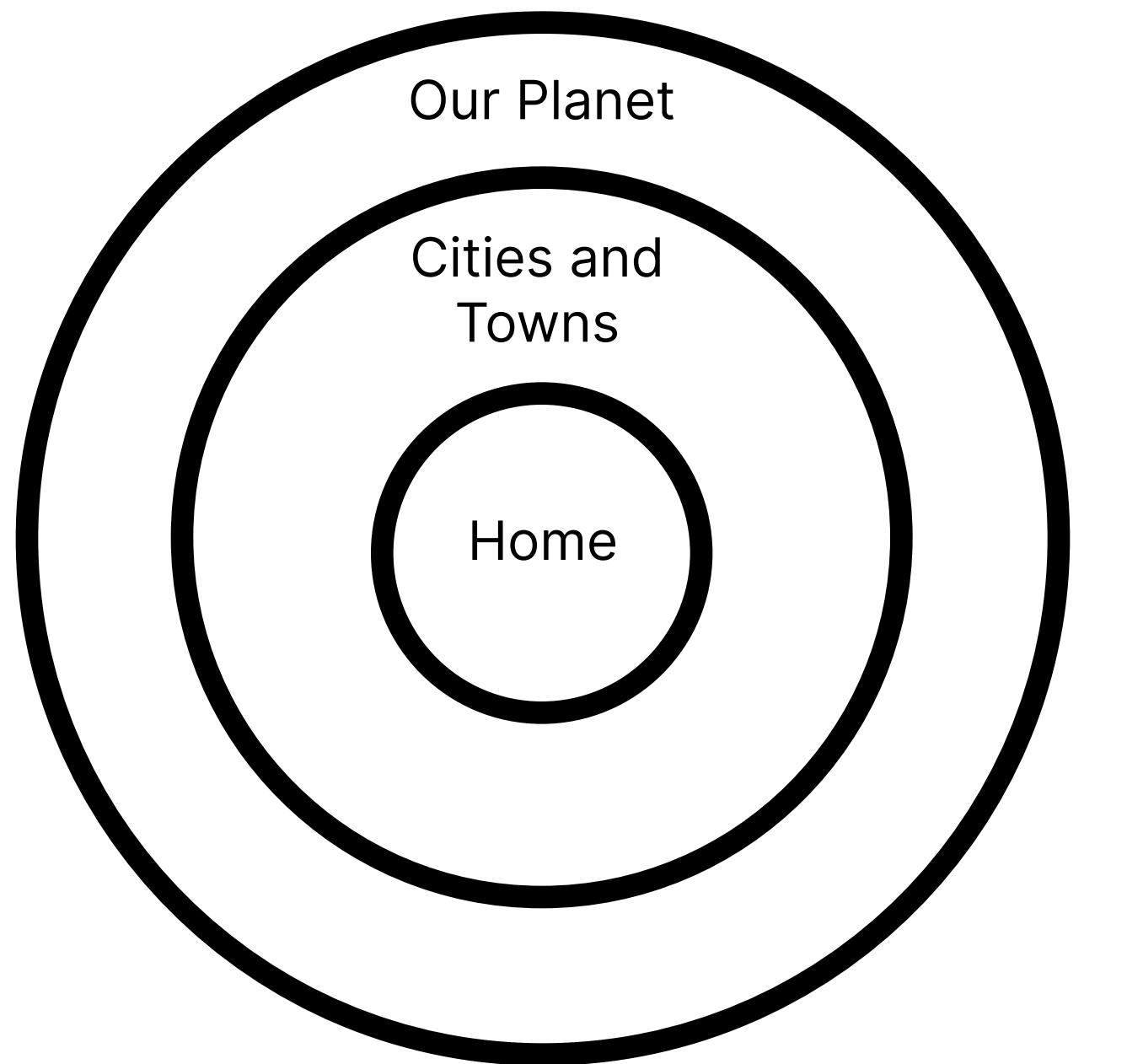
- Predictive Analytics
- Automated Decision-Making
- Enhancing Communication and Interaction
- Customization and Learning
- Telehealth and Remote Consultations

Data Analysis and Interpretation

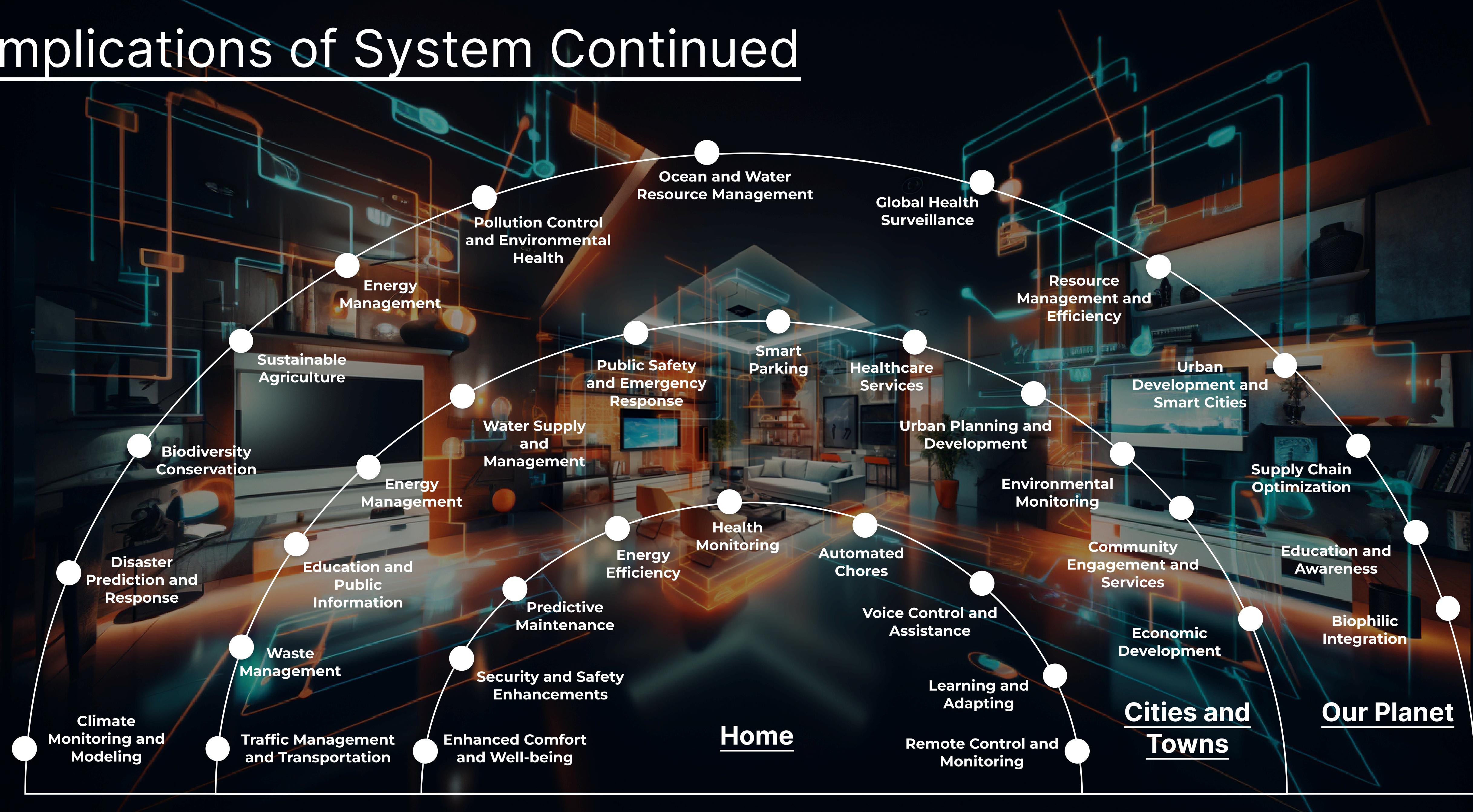
## Passive Action

# 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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