



C³ HOME LOGISTICS CONSORTIUM



How we live at home is in a profound state of flux. A number of social and technological forces are converging that stand not just to transform domestic life, but also to provide organizations with the opportunity to improve **connectivity, convenience and care (C³)** in the home for consumers of all ages.

The MIT AgeLab believes that tomorrow's home will no longer simply be a place to live, but will become a platform of services and experiences provided by an interconnected ecosystem of technologies and brands. The MIT AgeLab C³ Home Logistics Consortium, or **C³ Consortium**, will conduct research to envision the development of novel and evolving home services and serve as a catalyst for organizations seeking to deliver them.

Three **social and demographic drivers** are shaping tomorrow's demand for home services.

LIVING SOLO

Unprecedented changes in household composition call for innovative approaches to social and service connectivity. Solo living is a choice for many young Millennials and a growing issue for older adults. Only 17% of US homes were single-person households in 1970. Today that number has grown to 27%. In many regions, nearly half of homes are households of one, and their occupants require novel approaches in order to remain connected, enable 24/7 work, facilitate social interaction, and access vital services such as healthcare.

... **CONNECTIVITY**

TIME CRUNCH

Convenience was once a *nicety*. Today, services that save time are a *necessity*. Consumers, particularly younger consumers and dual-income families with children, are aggressively seeking ways to do more in less time. Gallup reports that the most 'cash-rich' consumers are those most likely to report time poverty. Consequently, affluent consumers are willing to trade money for time and speed. Home cleaning, appliance and HVAC monitoring and general house maintenance are better delegated than given precious free hours. Routine life activities such as food shopping, meal preparation, and health and self-care products purchasing have become tasks to be fulfilled, not experiences worthy of our precious time.

... **CONVENIENCE**

AGING & CAREGIVING

For many older adults, driving and the use of other modes of transportation become problematic over time, which makes it difficult to visit friends, family, stores, and a wide range of services. Home maintenance can become a herculean challenge, while friends and family become critical sources of support. Today, nearly one in four families provide care to an elderly loved one. Technology-enabled services are poised to become vital pipelines for families and clinicians charged with supporting older-adult wellbeing.

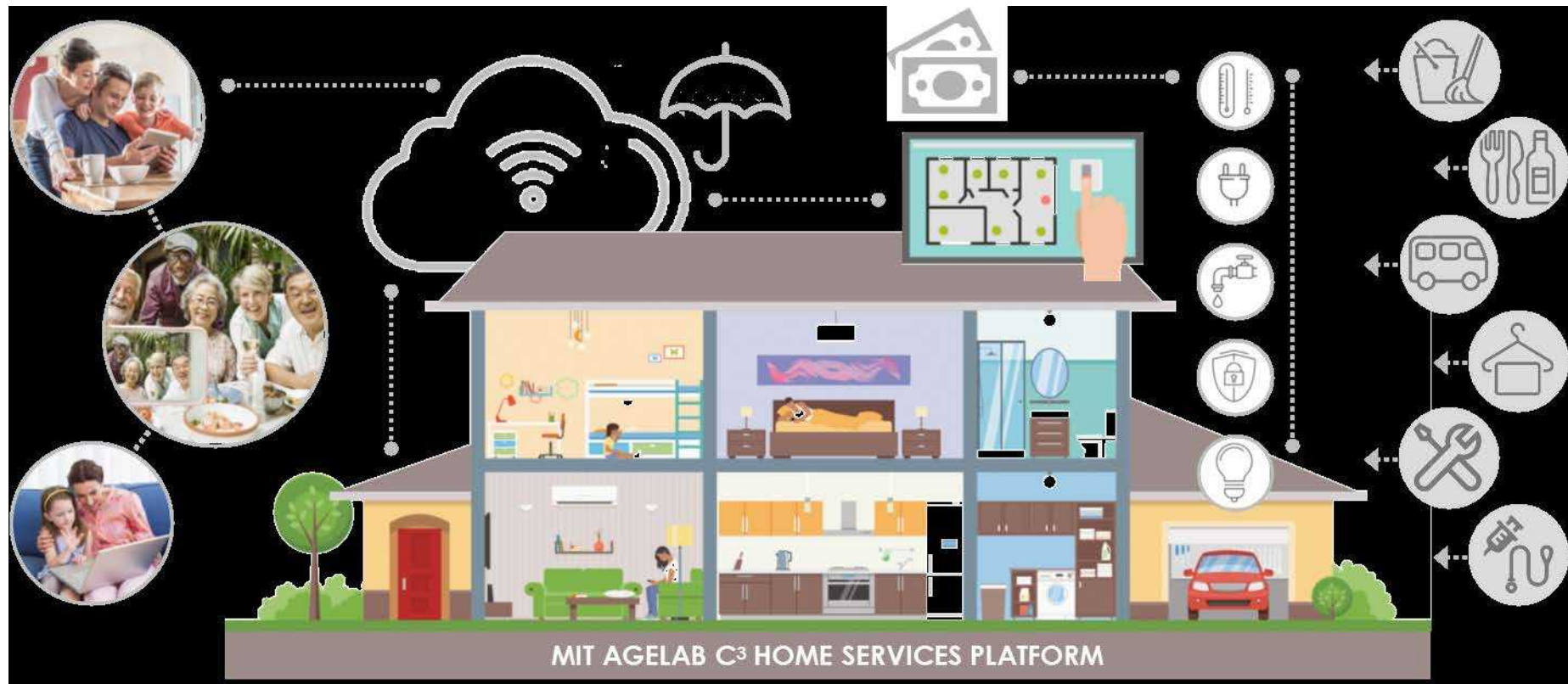
... **CARE**



CONVERGING OPPORTUNITIES: INTERNET OF THINGS & SHARING ECONOMY

The rapidly evolving Internet of Things and related sharing-economy services such as Uber, TaskRabbit, Hello Alfred and others are enabling homes to become increasingly intelligent and connected, both within their walls and to the world outside. Intelligent personal assistants such as Amazon's Echo and Google Home, together with sensors embedded in everyday objects, can now monitor home appliances, activities, and logistics ranging from "What's in the refrigerator?" to "Did I take my meds?".

The introduction of ambient intelligence throughout the home, empowered by machine-learning algorithms, is especially well positioned to motivate healthy behaviors and proactively intervene to reduce the probability of catastrophic events such as missed doses of medication, frozen pipes, and falls.





HOME AS SERVICES PLATFORM

Technology alone is not innovation. While countless devices may promise individual benefits, their capacity to demonstrably improve lives and sustain businesses is rarely clear until after their introduction. The MIT AgeLab C³ Consortium is working with a select group of organizations to preemptively envision how the convergence of social and demographic change, along with new technologies, will transform the home into a platform for services that will improve life for people of all ages.

Specifically, the MIT AgeLab C³ Home Logistics Consortium seeks to:

Catalyze collaboration among companies seeking to envision new services in the home that respond to both wants and needs across the generations.

Conduct original research using methods such as consumer panels, focus groups, ethnographic field (e.g., in-home) research, and technology assessments in order to understand consumer needs and behaviors and to evaluate select technologies, services, and collaborative business-model scenarios. Based on findings from original research as well as previous tools developed at the MIT AgeLab, a unique consortium knowledgebase will be established. Selected topics include:

- Home Service Demands Across Lifespan
- Consumer Trust in IoT & Sharing Economy
- Privacy & Security
- Self-care & Family Caregiving Patterns & Needs
- Lifestyle Changes & Visions of the Home Across Generations
- Well-being and Quality of Life Monitoring
- Consumer Technology Acceptance & Learning
- Collaborative Service Business Models
- Alternative Payment Models
- Service Standards Development

Identify specific users (e.g., on-the-go urban Millennials, downsizing/aging-in-place Baby Boomers, adult caregivers, and older adults living alone), use cases, and pain points that can be matched with existing and emerging technologies/services.

Develop integrated home service models that leverage the Internet of Things and the sharing/on-demand economy. For example, will consumers continue to buy services from one provider at a time or could Consortium Members envision a bundled home-services solution?

Provide a continuous scan of developments in the home-services market to C³ Members.

Co-create with C³ Consortium Members new applications and service ideas to meet emerging home service demands in areas such as entertainment, education, and dynamic home insurance and health insurance pricing.

Convene four C³ Consortium Member meetings annually, at least two in person and two via video conference/conference calls, and provide interim working papers to Members and ultimately academic publications.



KEY RESEARCH ACTIVITIES

Year 1: Development of standard definitions and industry consensus statement on the vision of home automation

- Comprehensive scan of existing and emerging technology enablers, including IoT solutions, home sensors and control devices, and sharing economy services
- Creation of personas and scenarios based on scientific data and in-depth survey results to illustrate the people, the contexts and the values associated with use of connected home services
- Develop standard base definitions and categorical levels of home automation based on an integration of results from technology scan and user studies

Year 2: System integration of off-the-shelf tech-enabled services and modeling of user acceptance

- Prototyping sample service platforms to meet the needs of different user personas and use scenarios
- Pilot testing in the field and in the lab to understand user interactions
- Evaluate user acceptance, use patterns, and possible service models for sustained consumer utilization

C³ CONSORTIUM OUTPUTS & MEMBERSHIP

MIT AgeLab invites firms from a variety of industries to form the home services ecosystem of the future, e.g., insurance, IT, CPG, retail, devices, sensors, and telecommunications. Members and MIT will collaboratively identify key issues, prioritize research objectives, and ensure adequate resources to conduct research and to put practical ideas into use.

Planned Member engagement includes the following (per year):

- Annual C³ Member Advisory Council Meeting
- 3 white papers summarizing research in progress
- 2 Member roundtables & networking events at MIT
- 2 Member conference call updates
- 2 Member Webinars

Membership is \$150,000.00 annually. Members commit for a two-year period. Funding will be used to support faculty, research staff, students, materials and supplies, equipment, meeting logistics, travel and related experimental costs.

BECOME A MEMBER!

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