

Technology Assessment and Strategy Building

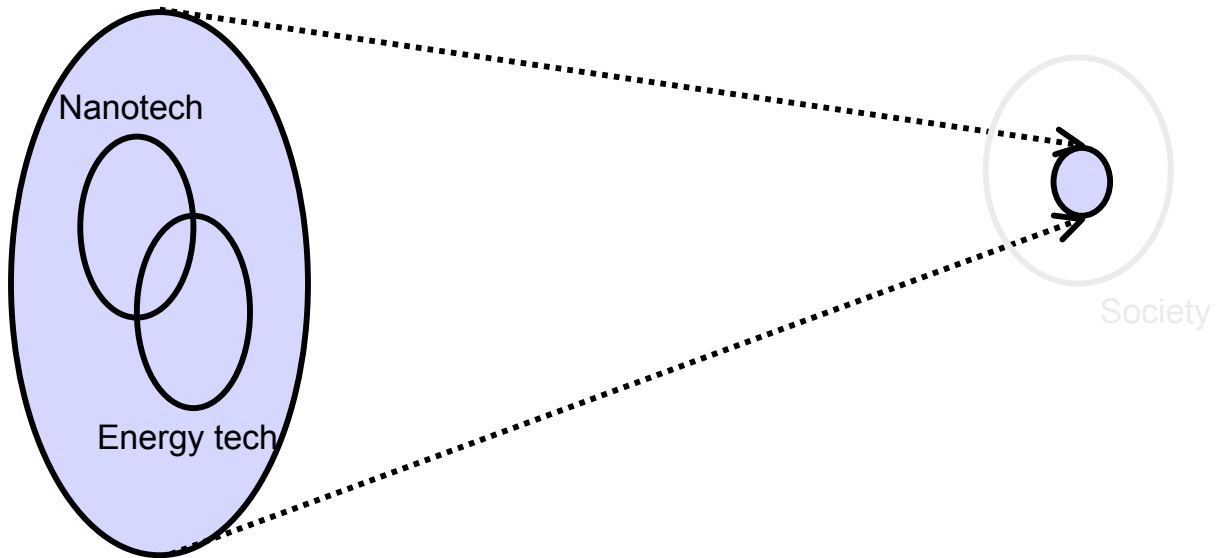
Go Yoshizawa
GraSPP, University of Tokyo

February 14, 2010

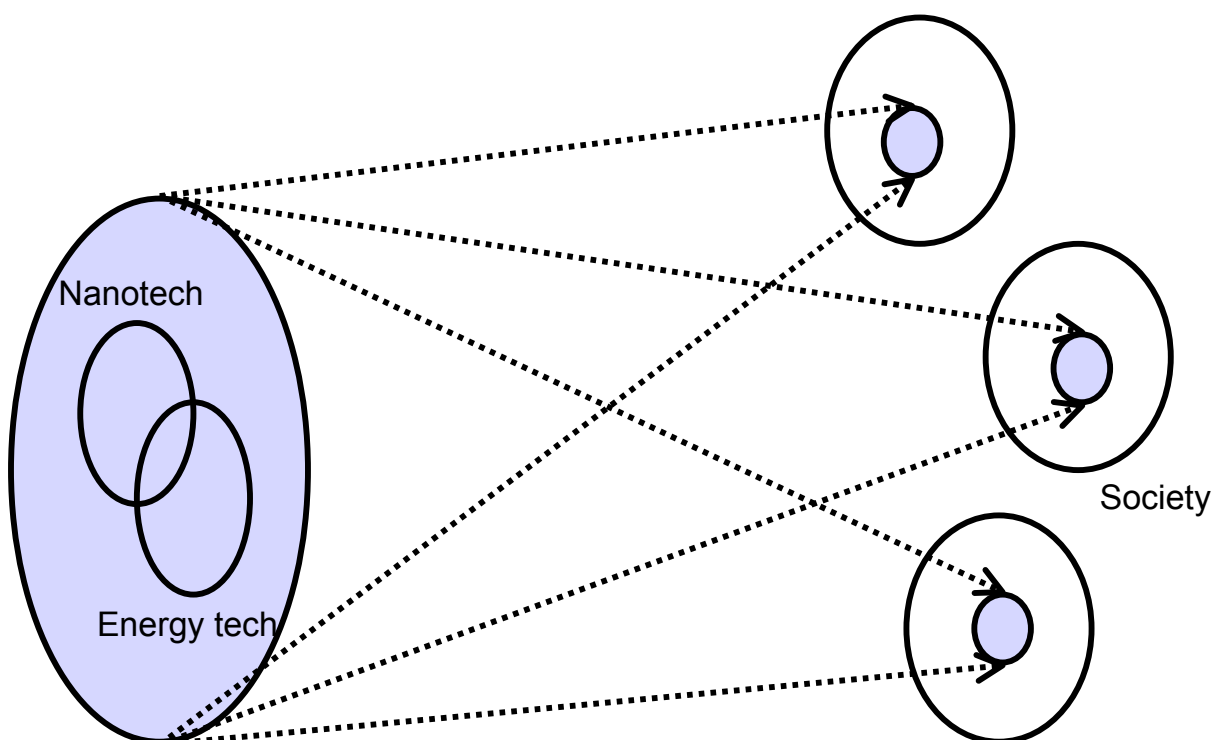
Working Definition of TA

- Technology assessment (TA) refers to institutions and practices which **support problem-definition (agenda setting) or decision-making** for the development of technology and society by anticipating **societal impacts of emerging technologies** that are difficult to be governed by conventional research, innovation and legal systems at an early stage of the technology development.

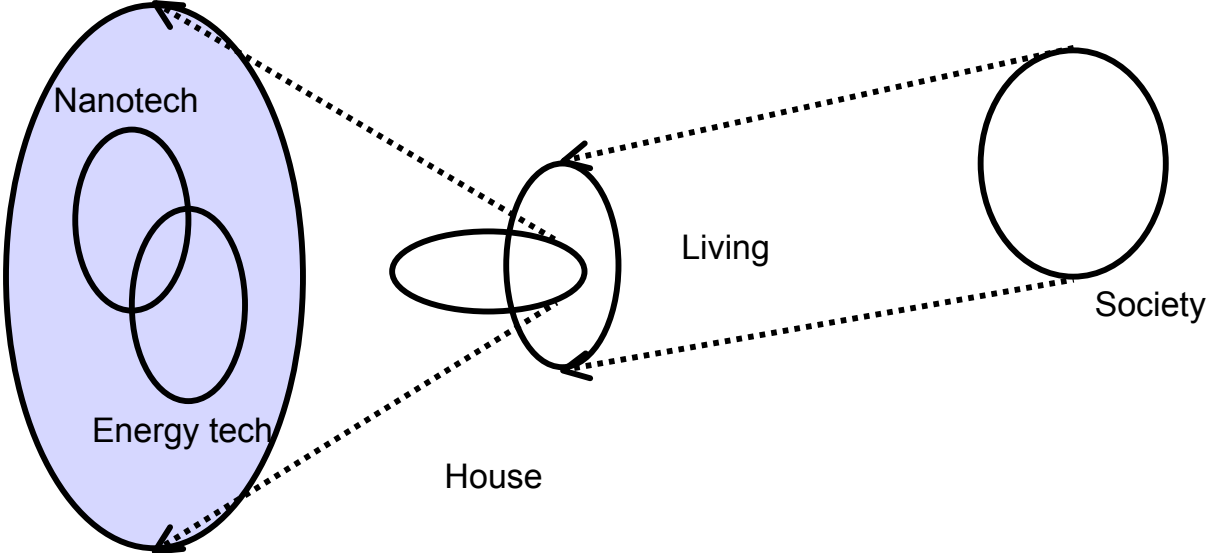
Technology Forecasting



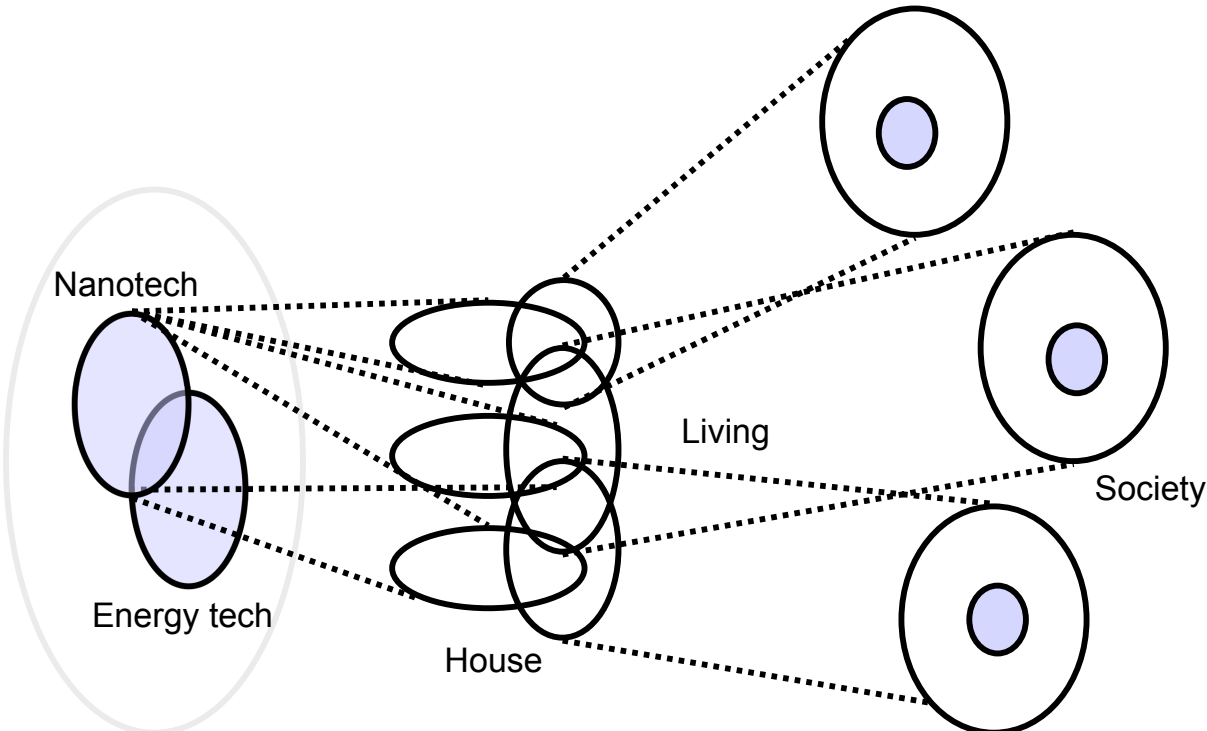
(Technology) Foresight



Backcasting



Technology Assessment



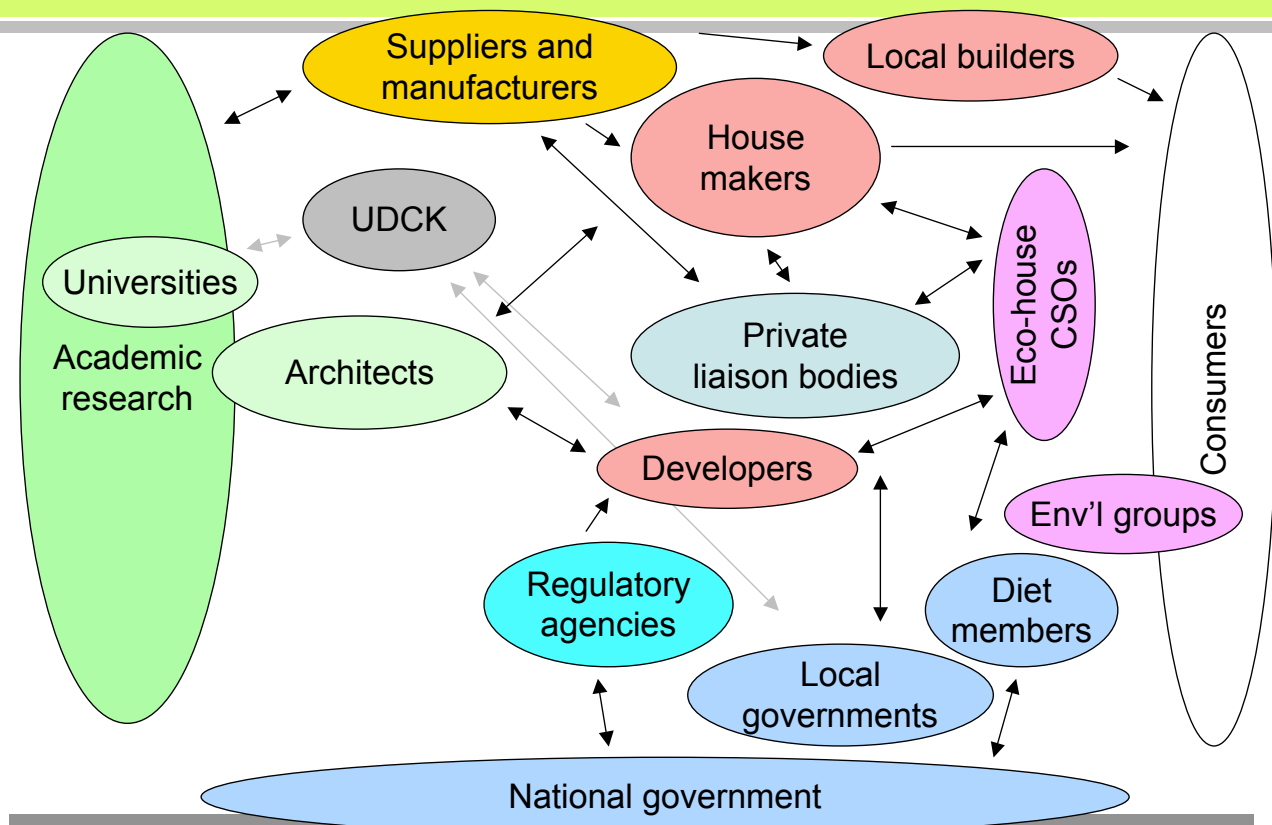
I2TA Project

- “Innovation and Institutionalisation of Technology Assessment in Japan: Dealing with Nanotechnologies” (2007-11)
 - 0.2 million pounds per annum funded by Research Institute for Science and Technology for Society (RISTEX)
 - Historical and institutional analysis, methodological and process analysis, TA exercises, and outreach activities
 - Subsequent embedding of the project in the society is strongly demanded
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I2TA Energy (Nanogreen) Team

- The team conducts TA on the application of nanotechnologies for residential energy use
 - Tentatively identified 42 nanotechnologies already applied or to be applied in house
 - Nov. 2009: multistakeholder workshops to match user needs and nanotechnologies for housing
 - Feb. 2010: expert/stakeholder roundtables to examine future houses with nanotechnologies in the context of Kashiwa city
 - May 2010: participatory workshop inviting Kashiwa residents
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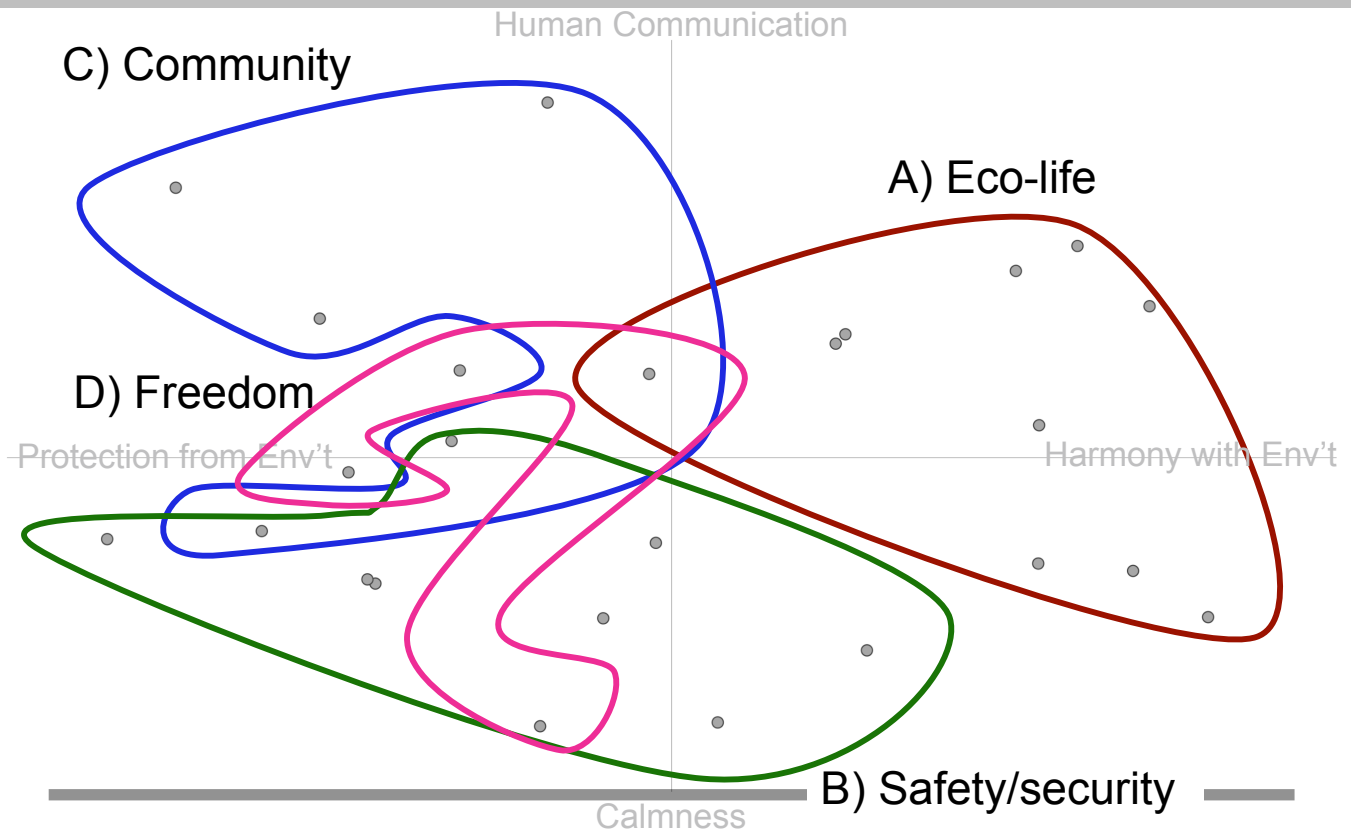
Governance Structure



Needs Q Workshop

- 13.30-17.00 on Sunday, 8 November 2009
- 28 participants (25 Q sorters)
- Theme: “What kind of house do you want to live in in 2030?” - expert lectures, discussions, Q sorting
- Discussion groups by open space technology
 - Lifestyles of health and sustainability (LOHAS)
 - Shared house
 - Safety and security house
 - Agricultural life (Semi-self-sufficient)
 - House building in 2030

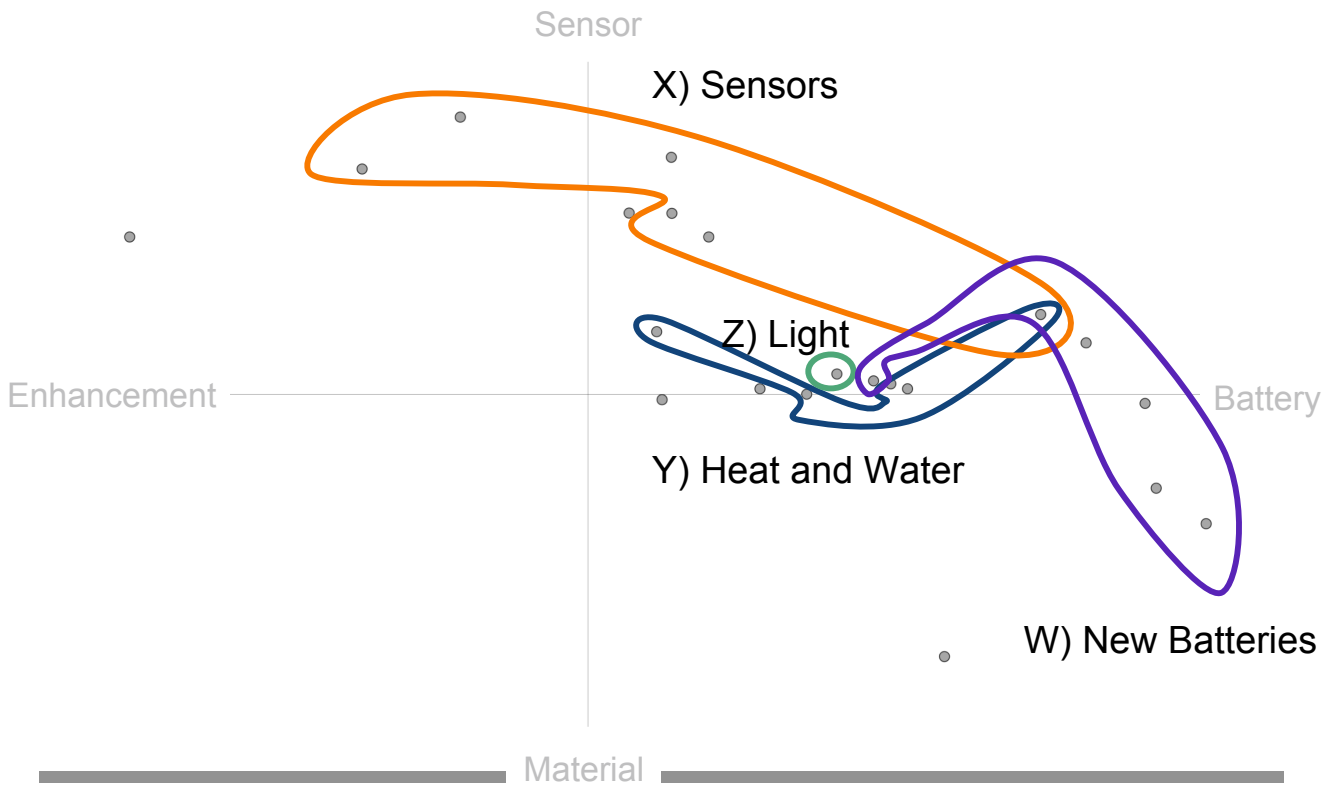
Needs Q Mapping



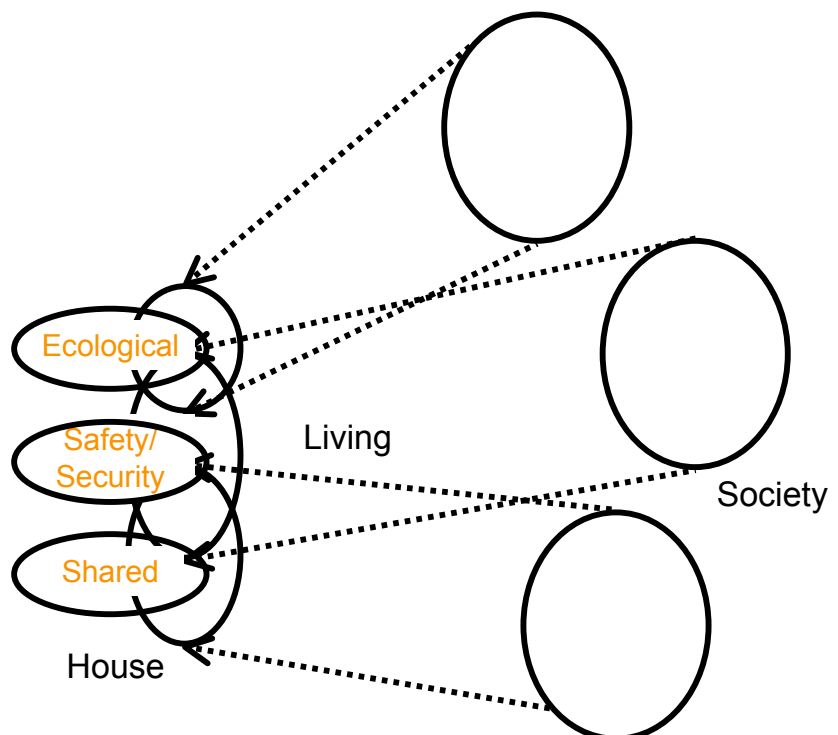
Seeds Q Workshop

- 13.30-17.00 on Sunday, 15 November
- 26 participants (21 Q sorters)
- Theme: “What kind of nanotechnologies suitable for houses in 2030” - expert lectures, discussions, Q sorting
- Discussion groups
 - A) Eco-life
 - B) Safety / Security
 - C) Community
 - D) Freedom

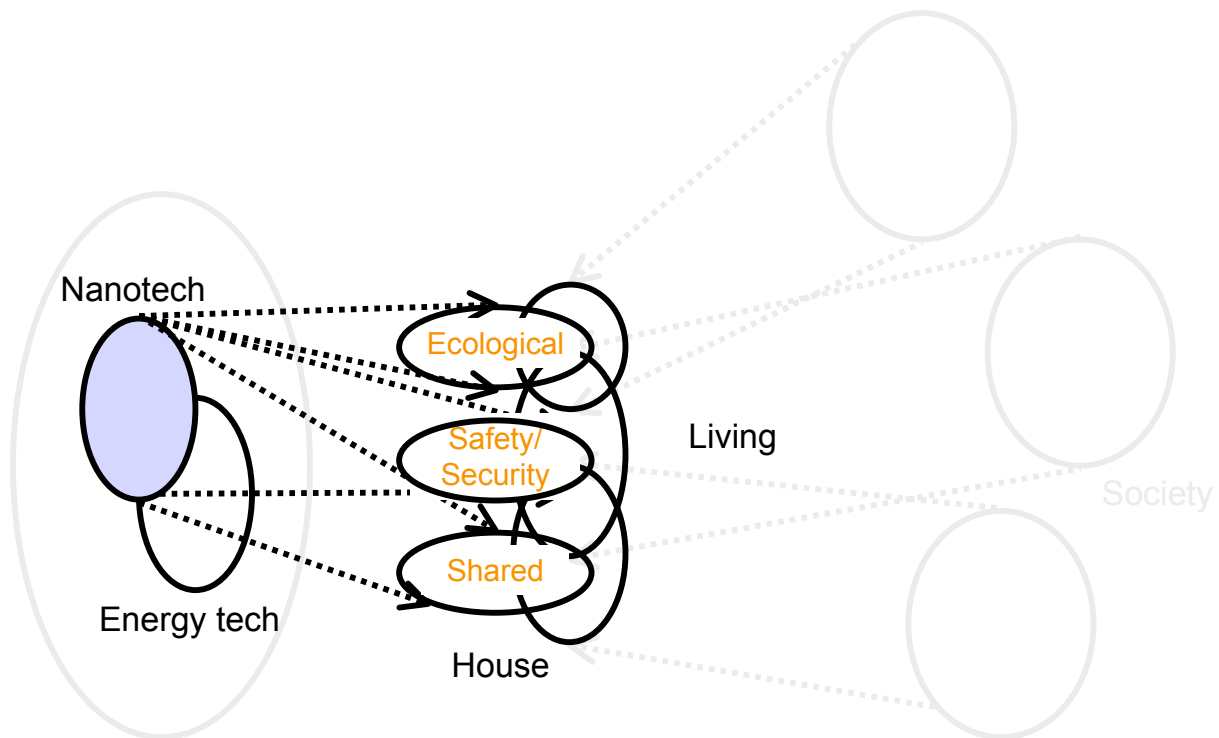
Seeds Q Mapping



Needs Q Workshop



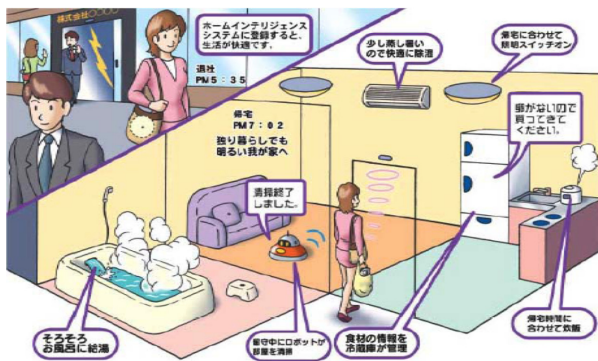
Seeds Q Workshop



Reflections

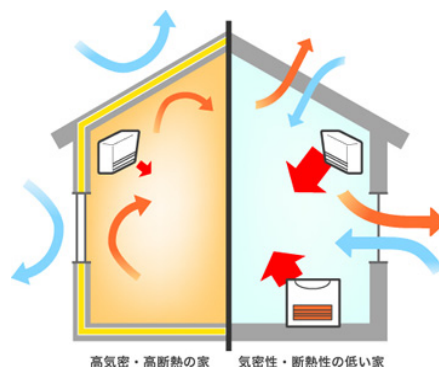
- The whole picture of future houses and societal contexts for the illustration is necessary to foresee broader impacts and interactions of nanotechnologies
- TA can change a regime to escape conventional trade-off as a type III error and reset a problem
 - Ecology - Safety: e.g. wooden house fire
 - Convenient - Health: e.g. EM wave from home electronical appliance

Convenient Living



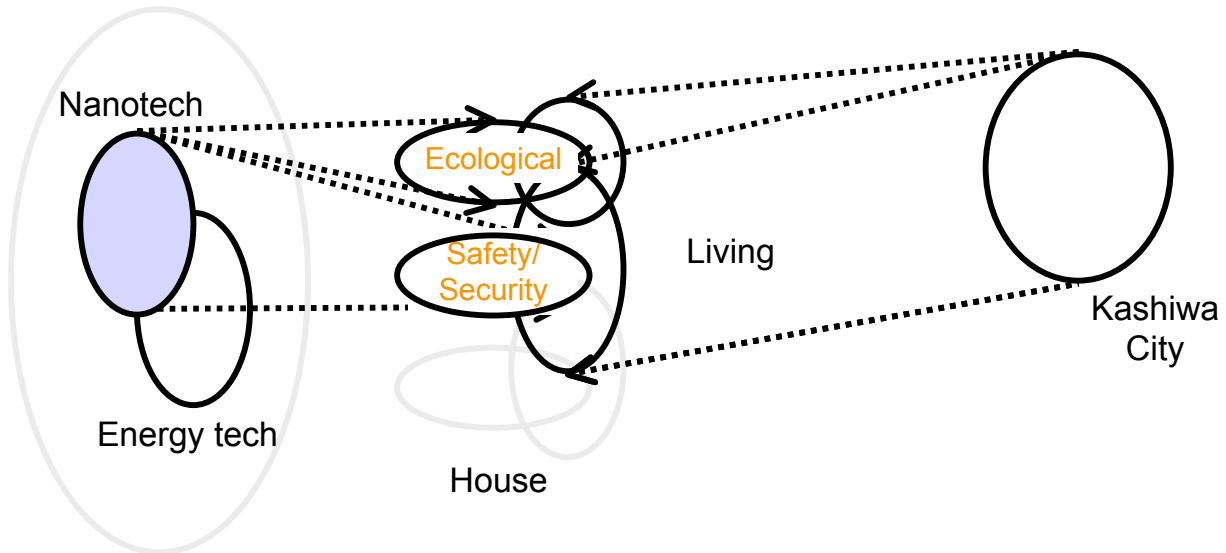
- Information control by HIS (e.g. HEMS, IC tags) is supposed to be secured by agents
- Invisibility and ubiquitousness of nanotechnologies may increase risk of personal security
- What if nanodevices enable a disconnection between personal information and information for convenient living

Ecological Living



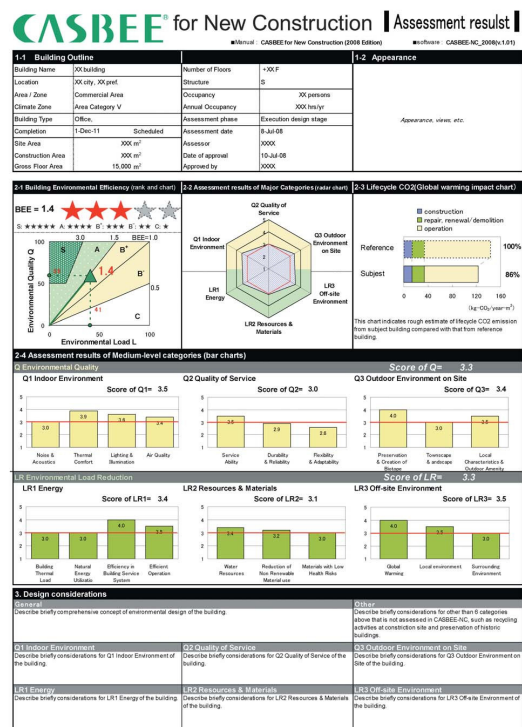
- Well-sealed, well-insulated (northern style) house with renewable energies
- Nanotechnologies improve energy efficiency of house-related materials and household equipment
- What if nanotechnologies utilise external natural source (heat, light, water and wind) for open, southern style house

Nanotech Houses in Kashiwa City



CASBEE Kashiwa ver.

- Comprehensive Assessment System for Building Environmental Efficiency (CASBEE)
- Kashiwa City now develop CASBEE for Home customised to the local context
- Prospective nanotechnologies may improve the assessment result



Expert/Stakeholder Roundtable (Feb.)



- Based on future house models developed by UDCK and reflecting the Q workshop results, the Energy Team will organise a roundtable to deliberate nanotech house models
- Inviting architects, nanoscientists, social scientists, developers, UDCK, and environmental NGOs

Participatory Workshop (May)

- Essential for this TA is involvement of city residents, not only as practitioners but also as addressees and prospective supporters
- Residents and key stakeholders will deliberate and assess the future nanotech houses in view of harmony and comfort as well as negative implications of nanotechnologies

