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EVER 2012 MONACO

The Electric Vehicle beyond Transport
Ideas for Features, Meanings and Services Related To Batteries on Wheels

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Agenda

1. Problem
2. Methodology
3. Main Finding: Contexts of EV Features, Meanings and Services
4. Overview of Contexts
5. Conclusions

The Problem

*"**Electric vehicles** should **not** be considered as a new version or new **sub-branch of auto industry**.*

*One must **think radically new demand, preferences and usages** to imagine innovative offers and the potentially credible associated market.*

***Otherwise** electric vehicles are likely to remain a **niche segment** for a very long time, as the have been for more than a century."*

OECD, 2011 (p. 189)

Methodology: Facilitated Workshop Plus Two Analyses

Unit of analysis

- Individual idea about features, meanings and services beyond transport.

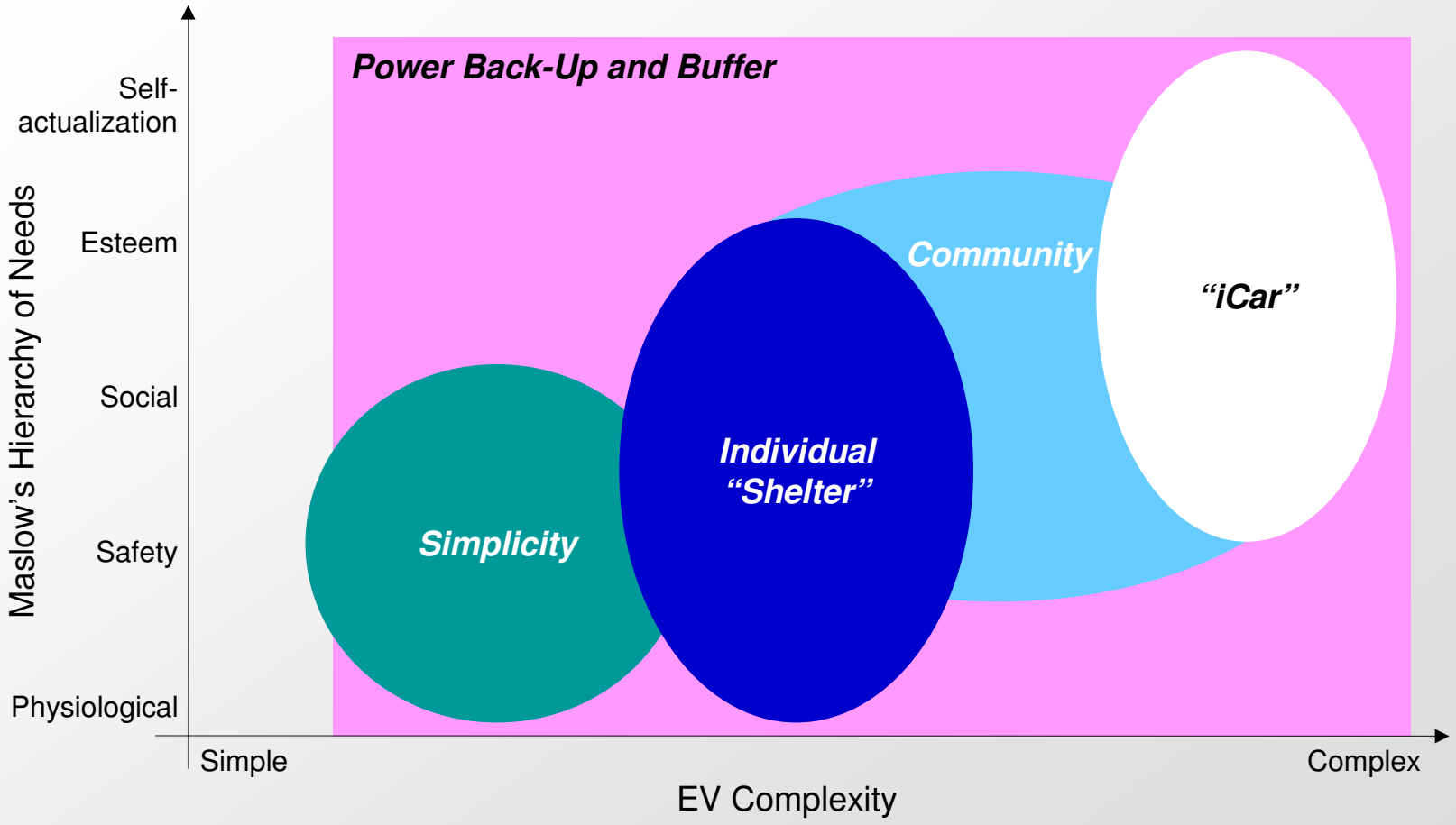
Ideas need to be classified and clustered into a matching context

- Theory: Maslow's (1943) Hierarchy of Needs

Work steps

1. Selection of workshop participants. Goal: most diverse professional, cultural, national and individual backgrounds
2. Knowledge explication and gathering before workshop
3. Workshop incl. keynote speech
4. Group work by participants, for results presentation preparation
5. Result presentation to Nordic Climate Festival @Aalto audience – and feedback
6. Preparation of individual learning diaries
7. First summary of findings based on the posters, workshop results, presentation and learning diaries by the author
8. Extended classification and contextual clustering by the author. Judgment of service complexity

Contexts of EV Meanings and Features



EV as a Power Back-Up and Buffer

- Precondition for many other EV features, meanings and services
- Power back-up: emergency power supply for home and outdoor use
  - Announced in 2011 by Toyota, Nissan and Mitsubishi
- Buffer: mobile, personal energy storage
  - Ability to charge electric devices inside and outside the vehicle
  - Can be shared (“stacked”) when and if needed.
- Virtual power plant: aggregator controls a fleet of EV
  - Frequency stabilizing
  - Voltage stabilizing

Individual, Mobile Work- and Living Space – "Shelter"

iPhone with Transport Capability – "iCar"

Fulfils esteem needs & self-actualization

- Design icon with additional meanings (Jensen et al., 2010), mostly beyond transport

Provides *good fun* experience

- Gaming elements and artificial intelligence gadgets
- Voice driven
- Dashboard experience with lots of gadgets
- Head up display a must (e.g. for charging opportunities)

Communication platform with internet

- organizer and planning platform
- personal diary

Personal coach, relaxes or cheers up

Services developed as for iPhone apps

- Plenty of crowd sourcing, user interaction and feedback
- But: strict quality control and interface standardizations

Problem: Most innovations end up in ICE cars as well

Community EVs

Photos: guidecraft

Address social needs

- Additional meaning to mobile shelter and iCar

Promote social values

- Share, not own
- Together, not alone
- Mobility as a service
- Networking
- Collaboration

Integrates well into

- Interests driven communities
- User groups
- Smart use of renewable power
- Communities, islands and cities
- Sustainable housing
- Public- and on-demand transport systems
- Mobility as a service

Ideal for model villages & demonstration sites

Simple EVs in Developing Countries

Core concept: plug & play

- Easy and intuitive to use
- Simple components and technology on system level
- Easy to repair
- Low maintenance and usage costs
- Anti-thesis of the iCar

Buffer and emergency backup

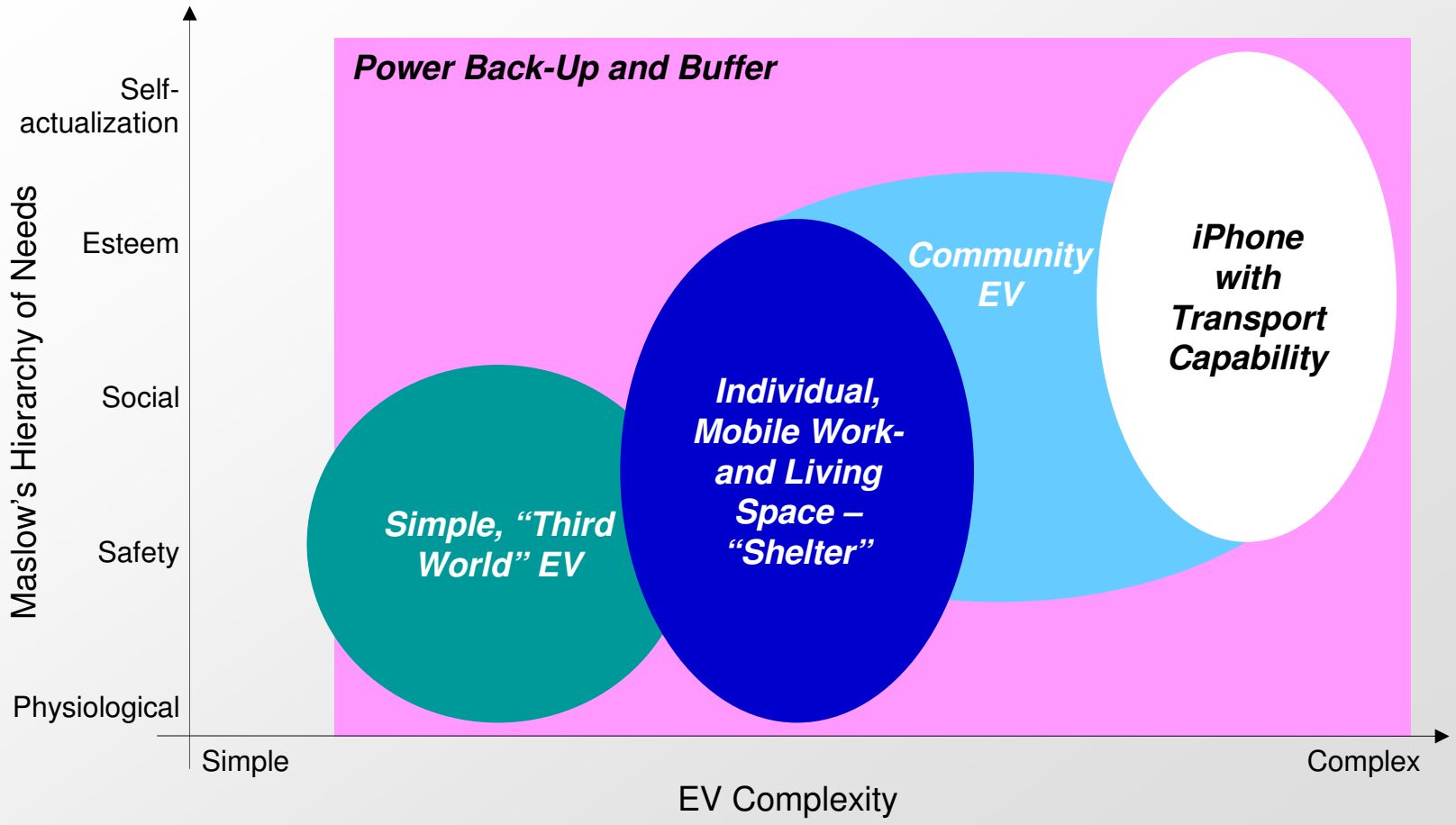
- Mobile energy storage for local needs

Increases quality of life

- Environmental friendly
- Makes most effective and sustainable use resources
- Promotes gender equality
- Helps the poor
- Creates local industries and jobs

Photos: Wikipedia

Map of EV Contexts



Conclusion

- **Power source and buffer is precondition**
- Mobile shelter is an EV novelty
  - safety needs as applicable to EVs as to ICE vehicles
  - **safety needs are human inherent**
- iCar is cool but innovations will end up in ICE cars
- **Community EV** provides all the **synergies** towards
  - Interests driven user groups
  - Smart use of renewable power
  - Communities, islands and cities
  - Sustainable housing
  - Mobility as a service
- Simple EV has potential but needs more research

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