

Linking expectations and interests to understand stakeholder strategies: Electric vehicle recharging infrastructures

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Projects



- 'The feasibility and impact of the transition to electric mobility in the Randstad region'
- Netherlands Organization for Scientific Research (NWO)
 - Ministries of Economic Affairs and Infrastructure & Environment
 - Policy relevance!
- Two sub-projects:
 - Consumers
 - Others stakeholders (me)
- Related projects:
 - Energy Transitions & E-Mobility North Sea Region



Research questions

- What are the expectations and interests of different stakeholders regarding EVs and how will this affect innovation and implementation?
 - Who are these stakeholders?
 - This paper only two groups
 - What are their interests in relation to EVs?
 - Opportunity, threat, under what conditions
 - What do they expect of EVs?
 - Car of the future vs. Negligible niche market
 - Different articulations of the ST system
 - What is their resulting strategy?
 - Policy measures to “include” all stakeholders?

Expectations: collective

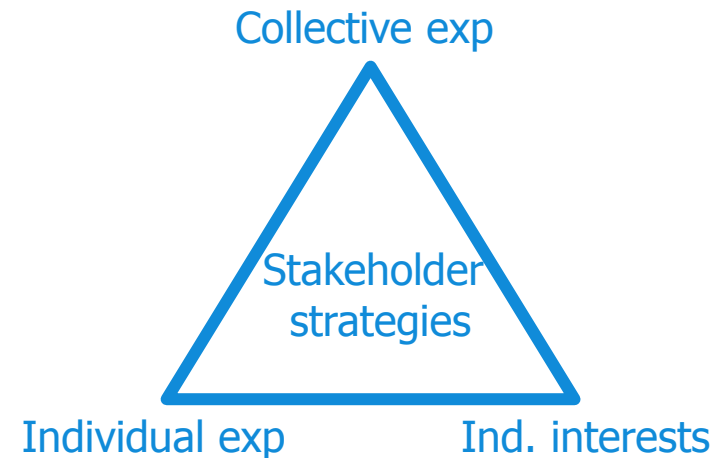
- Collective expectations
 - Difficult to grasp or measure
 - Powerful fish in aquarium of expectations?
 - Are man-made
 - Technology developers create stories (enacting)
 - Others may accept these and act as amplifiers (selecting)
 - Link up with grand-challenges and set agenda
 - Subject to waves or hype cycles
- Are performative, but:
 - Actors are not blind believers or followers
 - Have their own ideas and assessments
 - Have their own interests

Individual

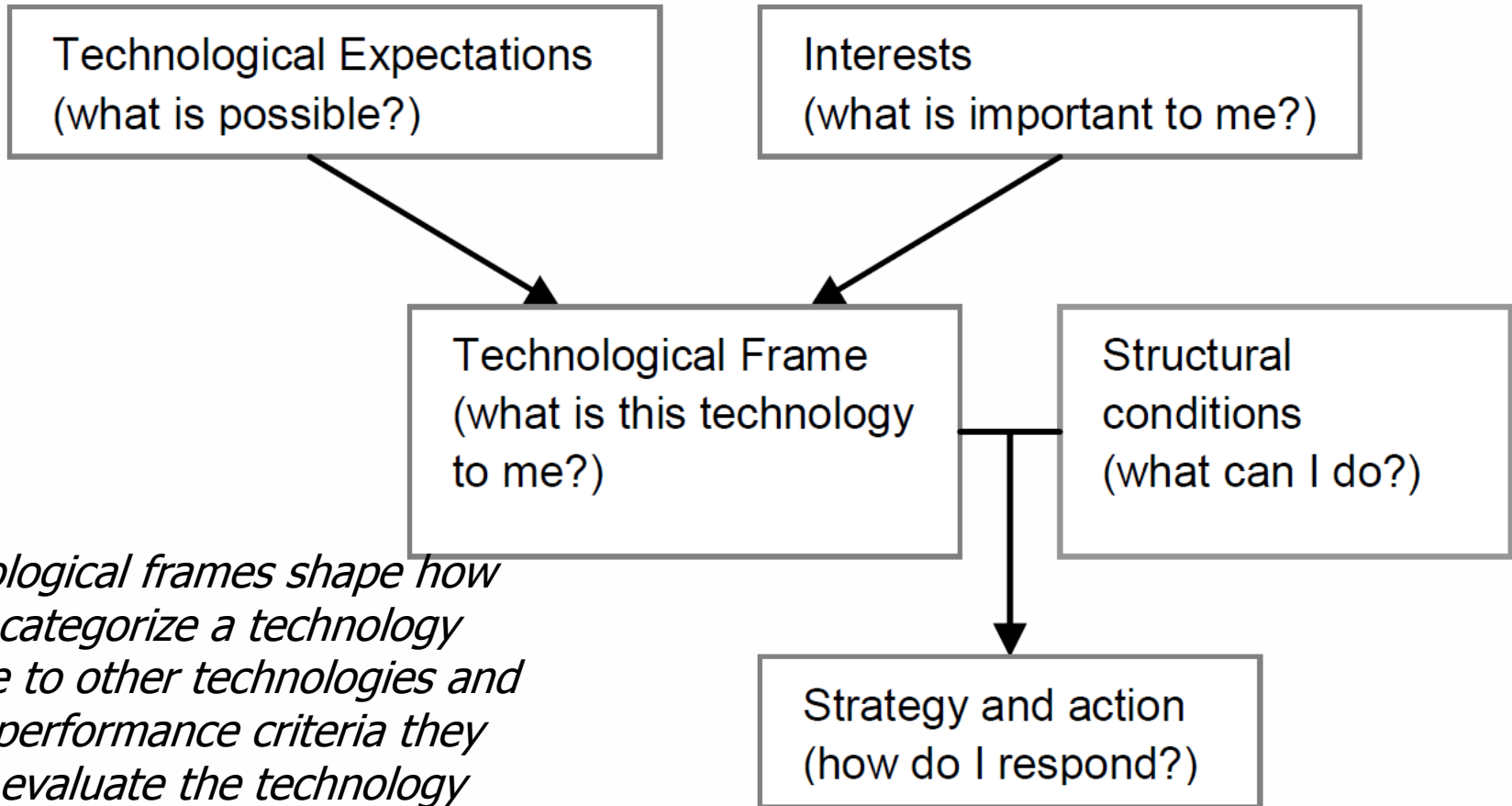
- Interrelated with collective expectations
 - Individual 'expectations assessments'
 - Prior knowledge & experience
 - Are probably more articulated:
 - Technological progress
 - Li-ion and other batteries
 - Other actors' behavior
 - Relying upon, but also finger-pointing
 - Contextual/landscape factors
 - Oil price, resource availability
- (Truffer et al 2008)

Expectations literature

- Focus on shaping expectations
 - By innovators and advocates
 - Expectations assessment
 - Role of hype & disappointment
 - Interests/strategies related to this
 - a.o. the talking vs the doing
- Performative role of collective expectations
 - Guiding and coordinating innovation
 - Included in transition studies, SNM, Tech innovation systems
- Gap: explicit account of interests in relation to performativity
- (management/strategy literature ignores expectations)



Analytical framework



Technological frames shape how actors categorize a technology relative to other technologies and which performance criteria they use to evaluate the technology (Kaplan 2008)

Electric Vehicles

- Collective expectation: 'EVs are on the verge of breakthrough'
 - Our research projects
 - (inter-)national policies forcing the automotive industry
 - Car shows and magazines full of EVs (and hybrids)
 - Policy support for pilots and demonstrations
 - Tax schemes for users
- Collective ambiguity
 - Current technology not sufficient (e.g. winter conditions)
 - 'Cars (batteries) will improve and costs will go down'
 - Li-ion and new/unknown battery types
 - Infrastructure



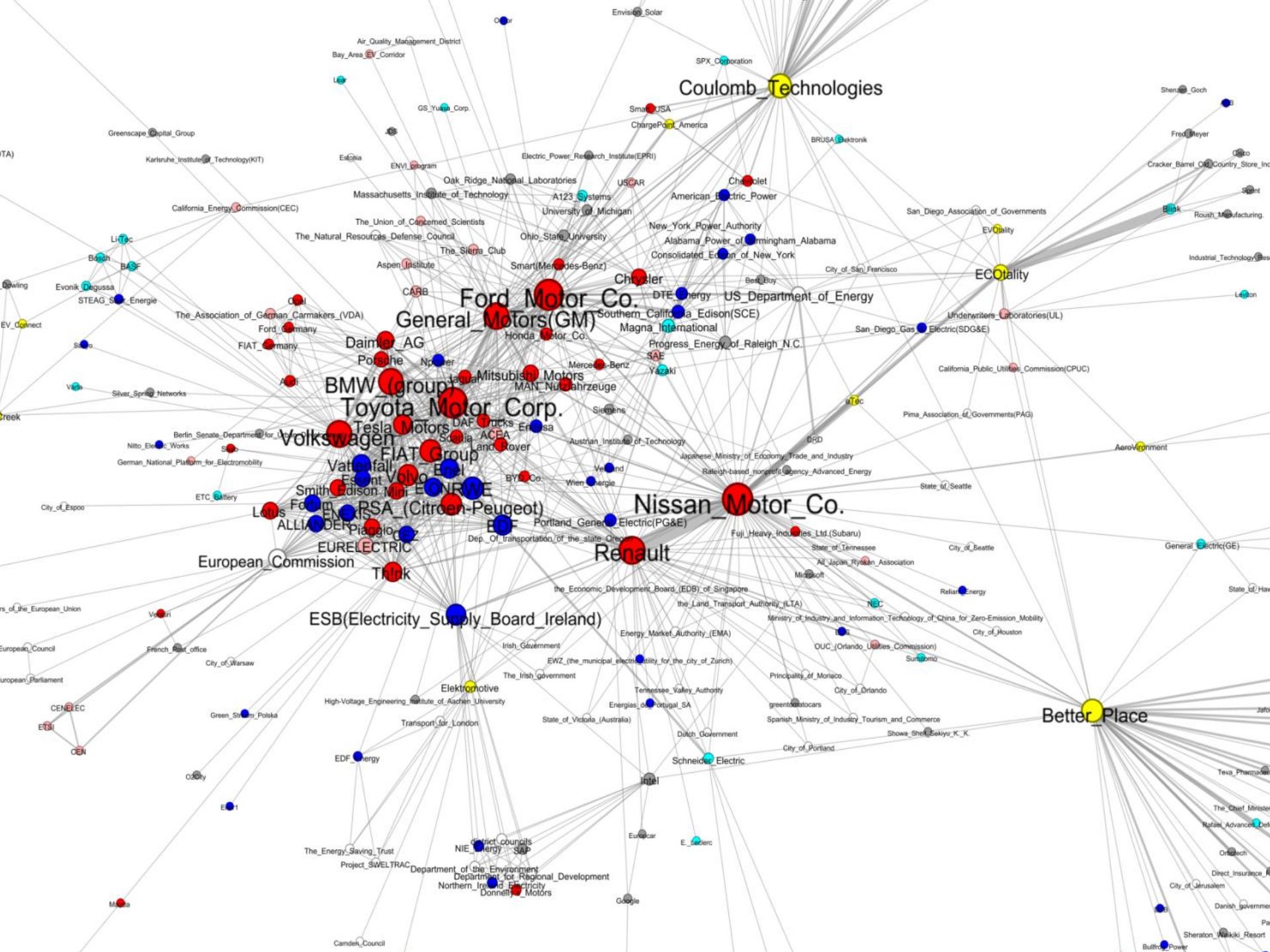
Electricity suppliers and grid operators

- Former utilities, were privatized (1998) and forced to split from 2007 onwards
 - Production and supply to users (commercial)
 - Distribution system operators (non-profit)



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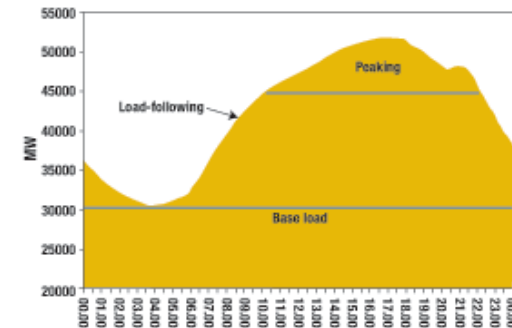


Individual expectations in electricity industry

- “We were confronted with this emerging technology”
- Individually, the actors in the electricity industry diverge
 - Some skepticism about mass market success
 - Diverging ideas on speed of transition
 - Referring to variations in different scenario studies
 - Pathway from demo’s to company fleets to consumers?
 - Charging at night, during the day?
 - Charging technologies (fast/slow), inductive?, swapping?

Expectations & Interests

- “We asked ourselves is this an opportunity or a threat?”
- Opportunity to expand market
 - Mostly to electricity suppliers: additional MWh’s
 - Grid operators’ (regulated) tasks may be broadened
 - EVs as buffer for intermittent renewables (wind, solar)
- Threat to existing business
 - Additional production capacity may be needed (day or night?)
 - Diverging expectations of tech, use, regulations
 - Grid stability issues (local level)



Slow vs Fast Charging

- All agree that commercial exploitation will be difficult
- Part of package: home/office charging, public slow, public fast
- Horror to some grid-operators
- No significant investments



Actor strategies

- All support EV introduction
- Emphasis on learning
 - Conditions under which opportunity or threat
- Almost exclusively slow-charging
- 'Colonizing the future' strategies
 - Operators expanding their territory (above the ground)
 - Suppliers: foothold in cities, limited own investments
- Feeding collective expectations, beyond individual expectations.

Conclusions and remarks

- Collective expectations mildly force different stakeholders to do 'something'
- Individual expectations and interests guide what they do
 - But: stepwise approach
- Analytically it makes sense to separate coll.& indiv. expects and interests

- Methodologically challenging
 - openness about interests and strategies? (during 'happy phase')
- Role of foresight documents limited to inspiring, points of reference
 - prototype vehicles more important?
- Differences between EVs, Nanotech, Fuel Cells, Alzheimer, Membranes