Field Research Support Presentation

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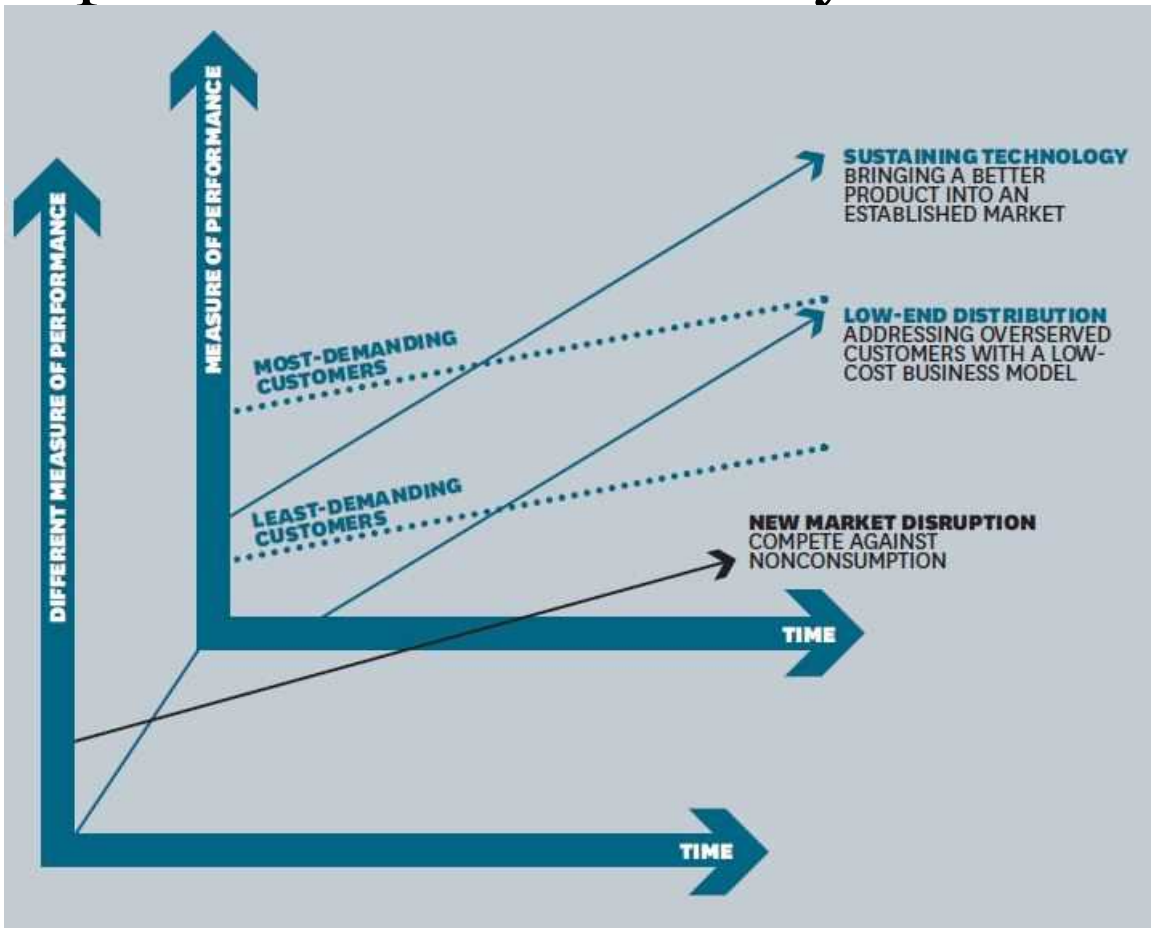
Overview

- Research Topic
- Research Trip Goals
- Concept Explanation
- Trip Overview
- Trip Details and Findings
  - Tokyo Motor Show, Nissan Factory, Kanagawa Prefectural office
- Effect on Research
- Conclusion

Research Topic

- Disruptive Innovation theory



Sustaining & Disruptive Innovations

- Sustaining- Improve performance on existing, mainstream products
  - Ex. Turbocharger

- Disruptive- Initially lower performance in some aspects, but bring a different value proposition
  - Ex. Transistor Radio

“Low-End” & “New Market”

- Low End- Lower performance on primary attribute, but higher on others
  - (or potential for improvement)

- New Market- Target non-consumers
  - Product was previously too expensive, difficult to use, etc.

Goals of Trip

- Electric Vehicles are disruptive relative to ICEs
  - Product design & value network
  - + Efficiency, Performance, Sustainability
  - - Cost, Battery Range
- Investigate “low end” or “new market” areas of disruption for EVs
  - Non- “mainstream” uses of EVs
  - Have initially lower performance or different value proposition

New Car Concept

Current	Future?
Full Time Ownership	Part-time or as-needed
Large enough for what I might need	Only “hire” larger cars when needed
Available whenever, wherever	More limited, but less responsibility
Maintenance, Insurance	Membership model
Gasoline-Powered	Electric, Hydrogen Fuel Cell, CNG
Larger is better	Smaller is more convenient

The average American car spends ~96% of its time parked!

Trip Overview

- November 24, 2013
  - Tokyo Motor Show
- November 25, 2013
  - Kanagawa Pref. Smart Energy Office
  - Nissan Oppama Factory
- November 26, 2013
  - Tokyo Motor Show

November 24 & 26, 2013

- Tokyo Motor Show (Odaiba)

Supplier Booths

- Source of much of new car technology

TMS Smart Mobility City

- Most “disruptive” potential
  - Car sharing
  - Micro size EVs
  - “Personal Mobility”

November 25, 2013 (AM)

- Travel to Yokohama to visit Kanagawa Pref. Smart Energy office
- Topics:
  - EV Taxis
  - Alternative Energy Promotions
    - Events
    - Subsidies
    - Other gov't support

Yokohama/Kanagawa Gov't Projects

- EV Taxi Promotion
- "Choimobi" urban EV car sharing program
- Solar-powered EV charging station

Interview about EV taxi program

- Mr. Onishi, Kanagawa Pref. Smart Energy Office
  - 43 taxis, 27 different companies
  - Increase exposure of EVs
  - Not Nissan-related!
  - 83% response rate
  - Difficulties
    - Range & Charging Times
    - Luggage, Elderly



November 25, 2013 (PM)

- Nissan Factory in Oppama, Kanagawa Pref.
- Models include Leaf, Cube, Juke
- Viewed Final Assembly Line (battery pack)



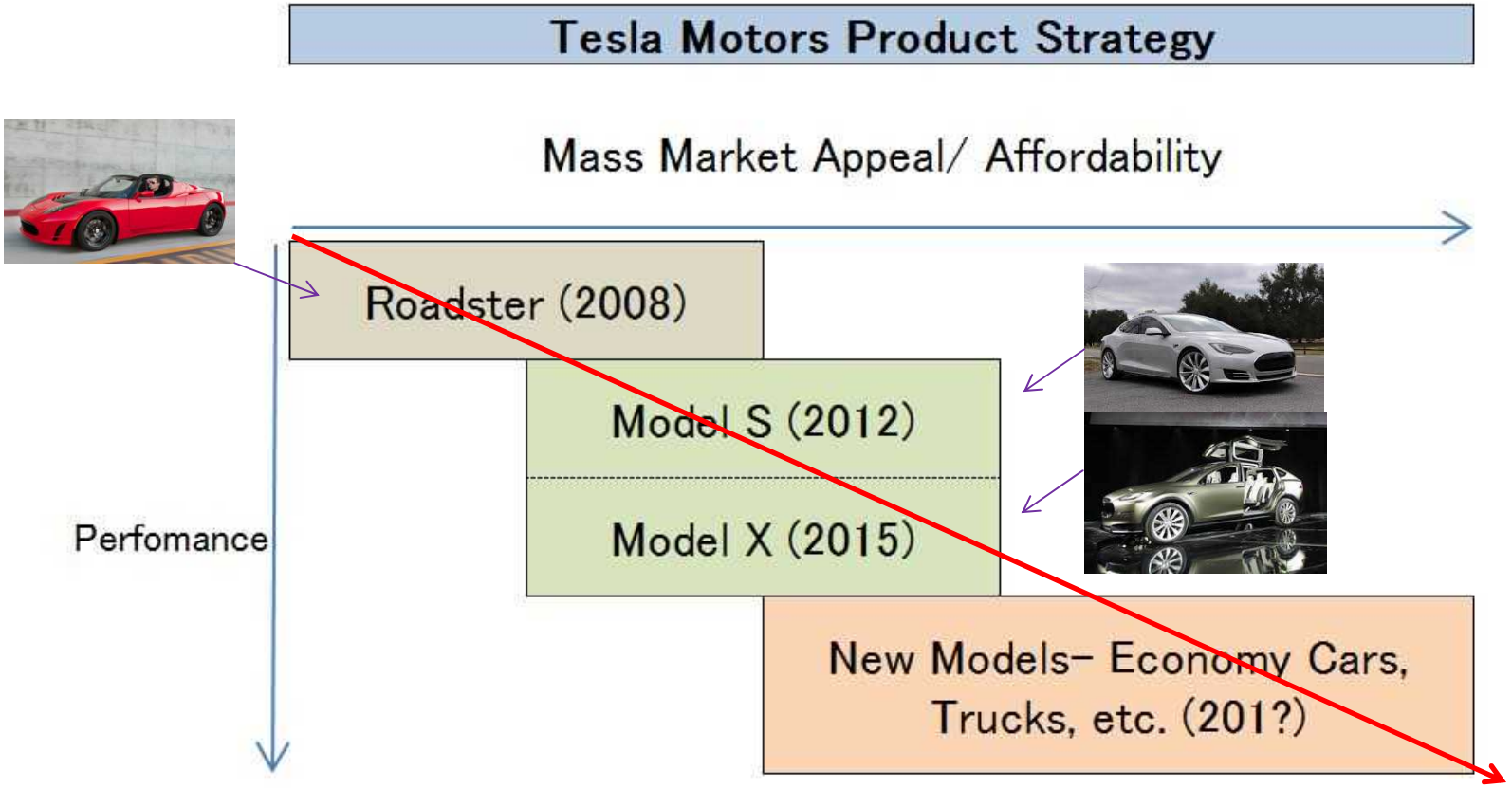
November 26

- Return to TMS Smart City, then fly back to Oita

Conclusion

- What was I able to accomplish?
  - Understanding of gov't programs
  - Industry Trends & Technology
  - Manufacturing
- What will I be able to use in thesis work?
  - Future product trajectories
  - Technological potential… and hurdles

Tesla's Project Trajectory



Top-Down Product Trajectory

Van der Rhee, Schmidt, & Van Orden (2012) High-end Encroachment Patterns of New Products.

Q&A