Understanding R&D Structure & Transnational Innovation
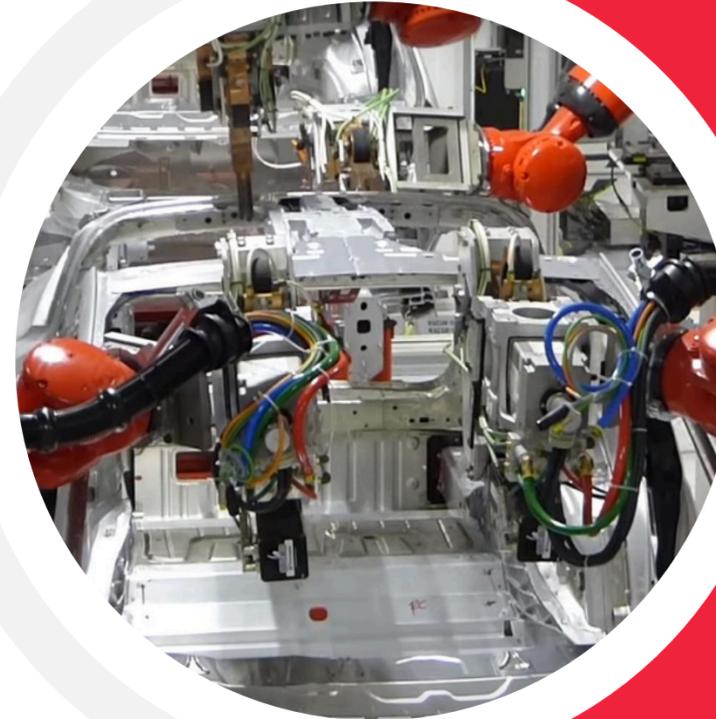
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Overview of the main objectives

- **Company Background:** Tesla, founded in 2003, is a leader in electric vehicles (EVs) and sustainable energy.
- **Core Business Segments:**
  - **Vehicles**: Model S, Model 3, Model X, and Model Y, driving EV market innovation.
  - **Energy:** Solar panels, Powerwall, and Megapack, focusing on renewable energy solutions.
  - **Charging:** Home charging solutions and Supercharging network for EV convenience.
- **Global Manufacturing:** 11 plants, 6 Gigafactories across the US, China, Germany, Canada, and the Netherlands.
- **Technology Development:** R&D centralized in the United States, with manufacturing distributed globally.
- **Key Question:** Should Tesla's R&D strategy be localized or continue as a centralized model to support global growth?
- **Areas of Focus:**
  - Adaptation of R&D to local market needs.
  - Integration of transnational innovation models.
  - Balance between centralized and localized R&D to optimize the new product pipeline.
  - Efficient use of resources and improved knowledge management across all business areas (Vehicles, Energy, Charging).

Tesla's Core Business Segments:

Vehicles (EVs)

- Model S
- Model 3
- Model X
- Model Y

Charging

- Home Charging Solutions
- Supercharging Stations

Energy
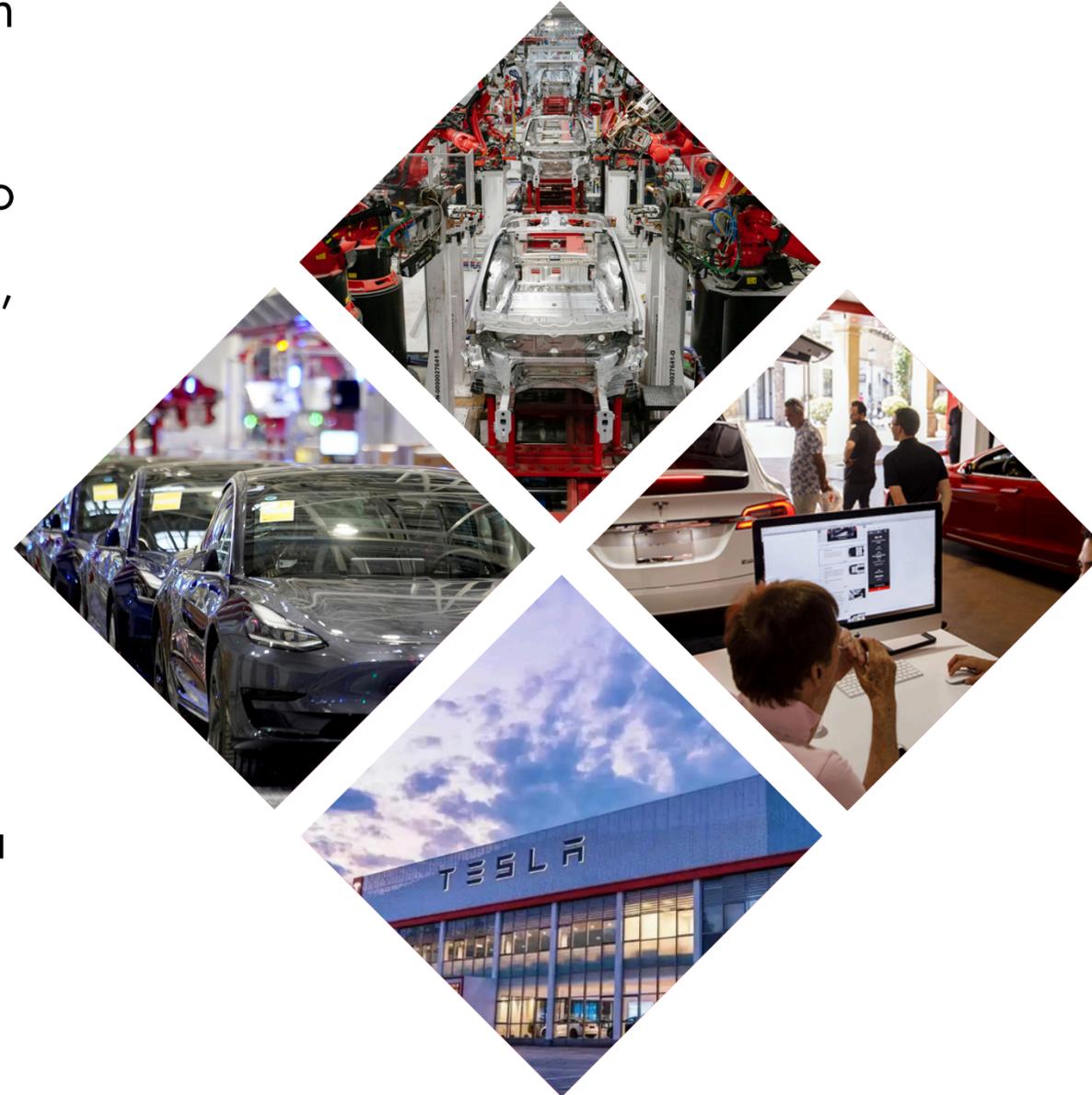
- Solar Panels
- Powerwalls
- Megapacks

Current R&D Model:
1.Centralized R&D

- R&D efforts primarily focused in the US.
- Standardization is necessary to ensure operational efficiency, scalability, etc.

2.Global Expansion

- 11 manufacturing plants and 6 giga factories across NA, China and Europe.
- China and Europe now #2 and #3 for Tesla sales since 2021.

Key Challenges:
1.Global vs Local Tensions

- Technology standardization vs customary preferences.
- Managing innovation across multiple regions can be resource-intensive and challenging.

2.Market Differences

- Local adaptations may be necessary for products like charging infrastructure and energy solutions.
- Regulatory compliance could be a major issue, particularly in China and Europe.

Analysis

Analysis

1   **Tesla's Business Segments**

- **Vehicles**: Requires globally-linked innovation to maintain standardized technology but adapt to local regulatory needs (e.g., safety standards).

- **Energy**: A locally-leveraged model works best, as energy needs and regulations vary greatly across markets.

- **Charging**: A local-for-local model will allow flexibility to develop infrastructure based on regional demands.

TESLA Business Model
The TESLA Ecosystem
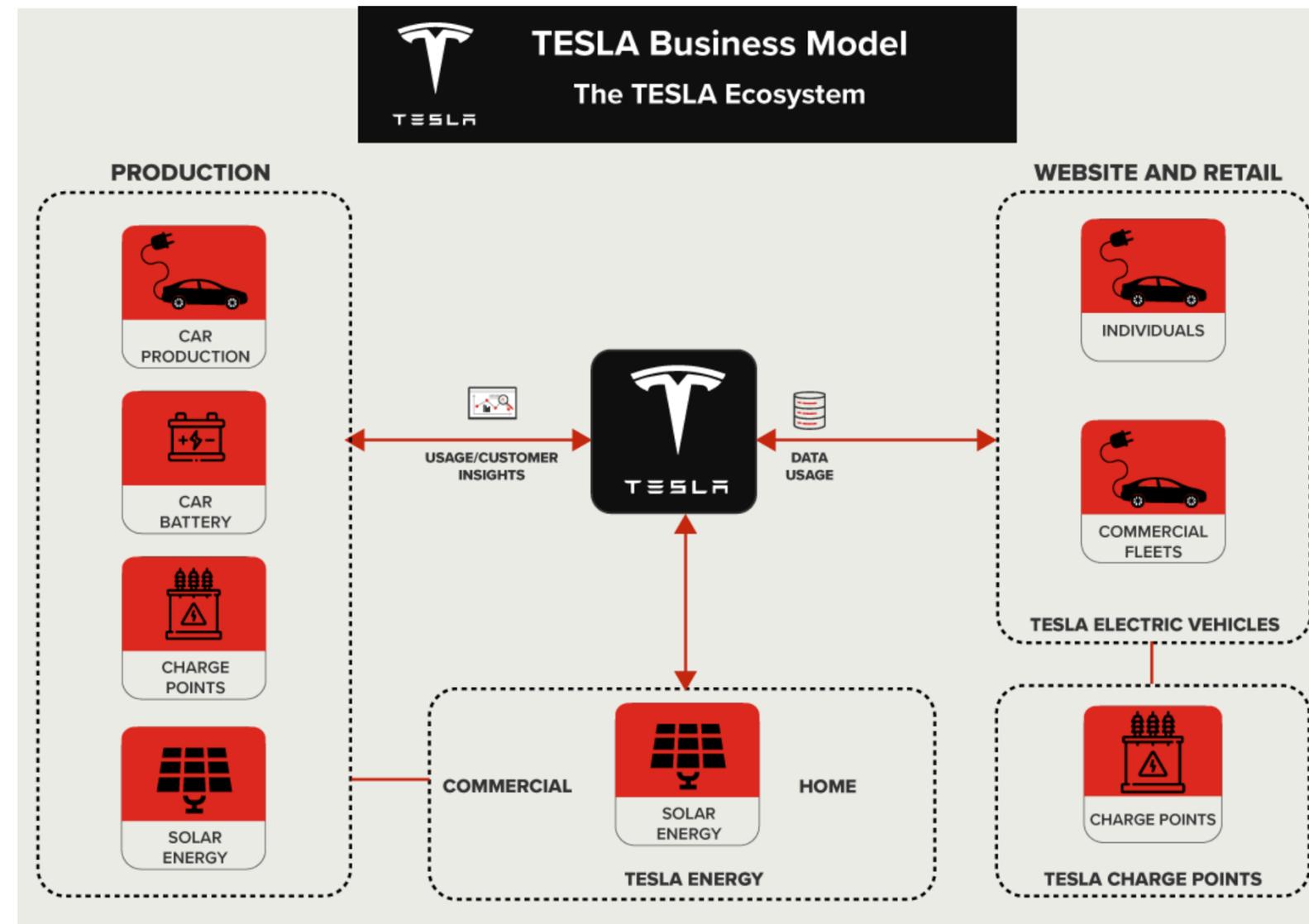
Analysis

(2) Centralization of R&D

- Tesla's innovation has been centralized, ensuring consistency in product quality and technology.
- As the company expands, regional markets may have specific needs.
- The energy and charging sectors, in particular, could benefit from more localized innovation.

(3) Knowledge Management

- Global R&D requires effective knowledge-sharing systems.
- Tesla should invest in a global knowledge management platform that allows R&D insights to be shared across regions.
- Cross-functional teams from different regions can enhance collaboration and innovation.

Recommendations

1 Hybrid R&D Strategy

2 Localized Innovation for Energy and Charging

3 Knowledge Sharing System

4 Transnational Innovation Model
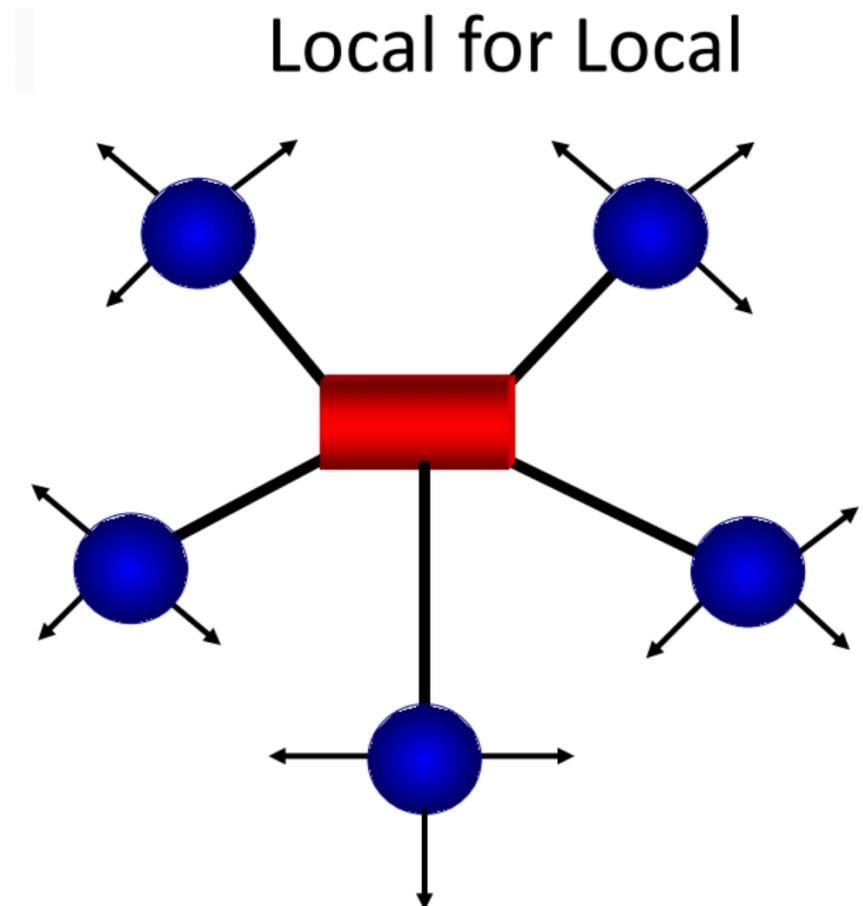
Recommendations

1 Hybrid R&D Strategy

- Centralize R&D for the vehicle segment to maintain consistency in technological development.
- Establish regional R&D teams for energy and charging to allow flexibility in adapting to local market demands and infrastructure.

Local for Local

2 Localized Innovation for Energy and Charging

- Create regional R&D centers to address local energy policies, infrastructure, and consumer needs, particularly for Powerwall and Supercharger products.
- Encourage regional innovations based on local energy regulations.

Recommendations

2 ### Knowledge Sharing System

- Implement a knowledge management platform that enables real-time collaboration and knowledge sharing between central and regional teams.
- Ensures that innovations can be leveraged across markets.

3 ### Transnational Innovation Model

- Use a transnational R&D model, balancing centralized innovation with local market adaptations.
- This ensures resource efficiency while maintaining relevance in diverse global markets.

Thank You!
We're open for questions.

TESLA

Appendix

References

1. https://www.forbes.com/sites/tendayiviki/2017/01/08/innovation-is-management/
2. https://www.garyfox.co/tesla-business-model/
3. https://worldpopulationreview.com/country-rankings/tesla-sales-by-country