Driving the future

How Autonomous Vehicles Will Change Industries and Strategy

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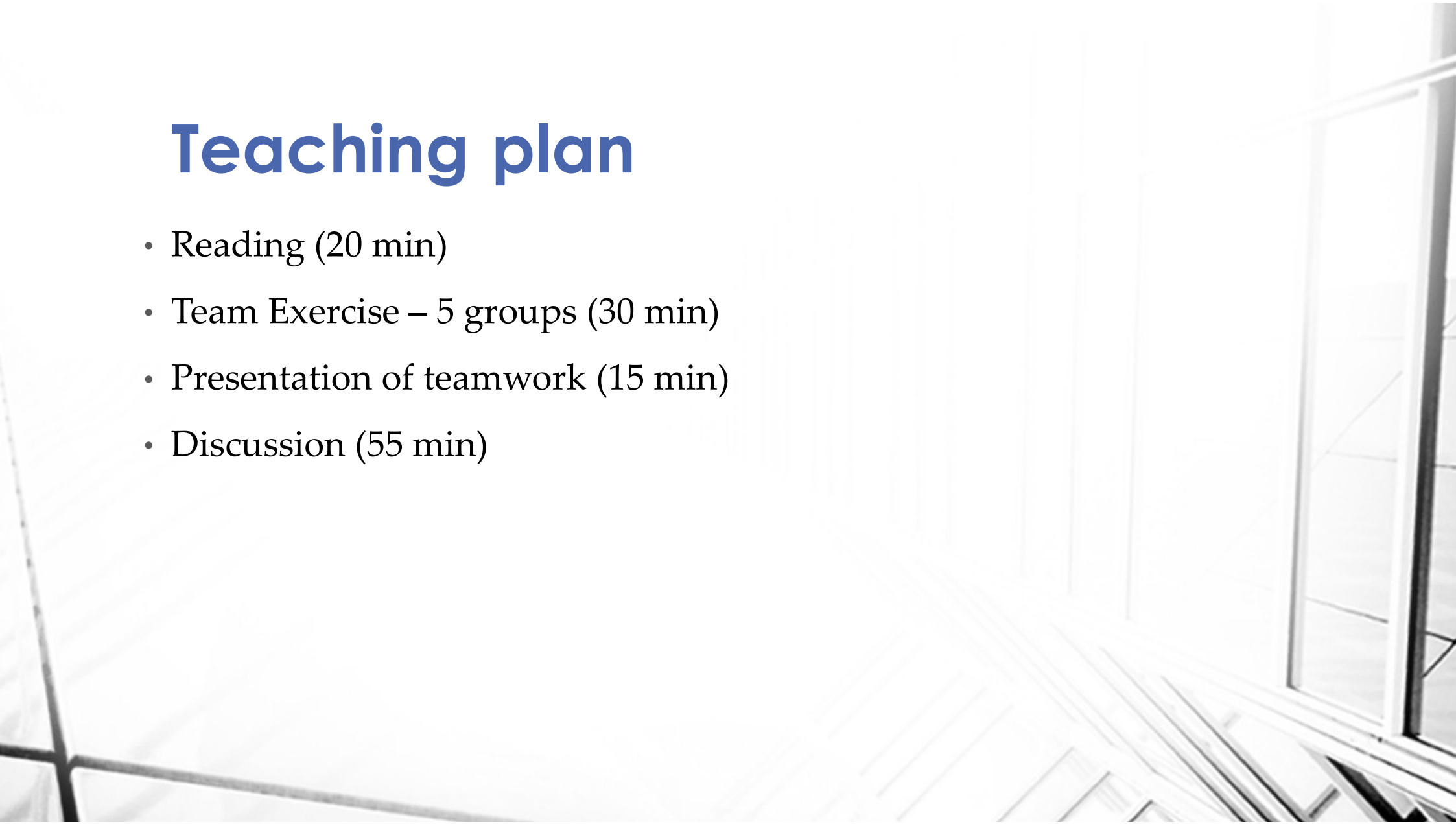
Teaching plan

- Reading (20 min)
- Team Exercise – 5 groups (30 min)
- Presentation of teamwork (15 min)
- Discussion (55 min)



Team Exercise

1. **The trend** towards **autonomous vehicles.** Decisive or irreversible.
2. How **autonomous vehicles might impact** other **industries** (choose an industry). «To be» through Eliminate-Reduce-Raise-Create Grid.
3. **Industry evolution**, the roles of **different players**, **shift of the profit**.
4. **Technology innovation** and **value innovation**.

The ERRC grid

The Eliminate-Reduce-Raise-Create (ERRC) Grid is an essential tool of blue ocean strategy developed by Chan Kim and Renée Mauborgne.

Eliminate *Which factors that the industry has long competed on should be eliminated?*	**Raise** *Which factors should be raised well above the industry's standard?*
Reduce *Which factors should be reduced well below the industry's standard?*	**Create** *Which factors should be created that the industry has never offered?*

Discussion

1. The trend toward autonomous vehicles.

- **Insurance Industry**

Self-driving cars, especially those that cannot be controlled by drivers cannot be used negligently. Any accident is the fault of the manufacturer and **«drivers» need not carry insurance.**

- **Lawyers**

Since autonomous vehicles are covered with sensor and cameras **recording every more**, it will be **clear who caused an accident**.

- **Autonomous vehicles (AVs)**

If the autonomous vehicles caused accident, **software** on all other AVs **can be updated** to avoid similar scenarios, improving until AVs never cause accidents.

Discussion

The trend toward autonomous vehicles.

- **Automobile Manufacturers and Dealers**

Avs will **reduce the numbers of cars** needed by making it far easier for family members to share a car. The volume of auto sales will sharply decline.

…no car households when AV ride-hailing services make owning a car an expensive and unecessary hassle.

- **Francising**

In US all auto dealers are franchises. Manufacturers typically do not sell cars directly to the public…

Discussion

Does AV trend have a clear trajectory?

- **Integrated AV technology**: Companies or auto-manufacturers sell all the hardware andsotware needed to create AS as one component.
- **Modular AV technology**: Companies sell pieces and parts of AV and auto manufactuters piece it togheter as they see fit.
- **Self-made AV technology**: Companies (GM, Uber) work on proprietary AV technology
- **Rented AV technology**: Companies (Waymo, Uber) are all readying ondemand AV taxi companies.

Discussion

2. Choose an industry. How AVs might impact that industry (vertical applications)

Users/Buyers

- Taxi services: service will cost less (driver-less); higher reliability (no dishonest driver); more privacy
- Delivery: cost reductios; job replacement
- After School Programs: pick up children from school and take them somewhere for study or play

Suppliers

- Gas stations: lowest coast filling station; time to refuel
- Parking lots: parking in compact lots
- Steel and other raw materials: declining market for raw metrials

Discussion

3. Industry's evolution, the role of different players, the shift of profit.

In **the as-is automaker market**, **original equipment manuactures** (OEMs) – who design, build and market cars – **are the more powerul players** deciding what to outsource and who to outsource.

In today's AV industry, an increasing number of **high-tech companies** with strength in software and algorithms (Google, Uber, Tesla, etc) are entering this market.

Analysts believe the cars themselves may become **commoditized**, since all AVs will drive essentially the same, with the power dynamic shifting to companies that have perfected AV technology.

It's expected that the **bargaining power and profit pool of the AV industry will shift to the software companies.**

Discussion

4. Technology Innovation and Value Innovation

Technology invention vs business model underlying the invention

Expensive graphics processor (cost over a billion dollars to develop)

Expensive graphics processor to support artificial reality

Fast computers

High-resolution graphics

Old technology and repurposed tech (airbag controllers)

Outsold both combined

Existing hardware

Outsold both combined + Wii

Discussion

4. Technology Innovation and Value Innovation

Technology invention vs business model underlying

- **Tech invention** focusing on using technology to **solve perceived pain-points**.
- **Technology innovations help society** as a whole, the technology per se does not warrant commercial success.
- **Value innovation** seeks to provide **value for customers and non-customers**.

Discussion

4. Technology Innovation and Value Innovation

Inventor who gained little or nothing from their inventions:

- Johann Gutenberg (1440): movable type printing press
- Wilbur and Orville Wright (1903): airplanes
- Alexander Flaming (1928): antibiotics
- […..]

All **failed to realize the bulk of wealth their technology unlocked**.

- **Technology innovation involves** creating **technology** that is useful.
- **Value innovation involves** creating a **business strategy**.

Discussion

4. Value Innovation: disruptive and nondisruptive methods

Kim and Mauborgne (2017) discuss three ways of pursuing market-creating strategy:

- Offering a **breakthrough solution for an exsiting industry problem**
- **Redefining and solving an exsiting industry problem**
- **Identifying and solving brand-new problem** or seizing a brand **new opportunity**

Discussion

4. Value Innovation: disruptive and nondisruptive methods

When an organization offering a **breakthrough solution for an exsiting industry problem it tends to be closer to disruptive creation.**

How to best store and replay sound recordings

Discussion

4. Value Innovation: disruptive and nondisruptive methods

When an organization identifies and solves brand-new problem or seizes a brand new opportunity, it is nondisruptive creation, unlocking new markets beyond existing industry bounderies.

How to educate children with cartoon and games

Discussion

4. Value Innovation: disruptive and nondisruptive methods

When an organization **redefines and solves an exsiting industry problem lies in between.** Problem redefinition allows an organization to replace assumptions and reconstruct industry bounderies in new ways.

How to recombine the best of the circus, theathre and ballet