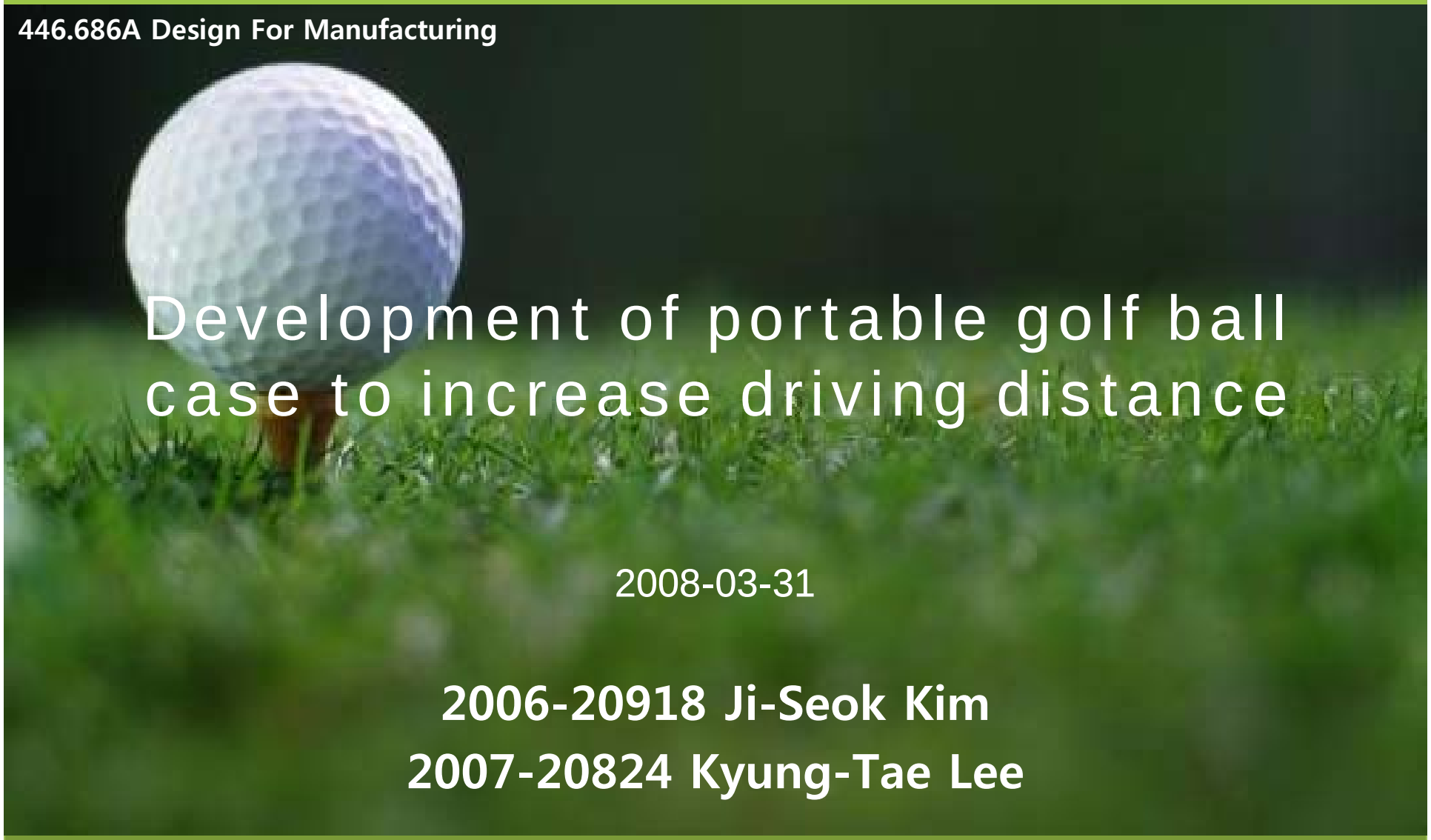
446.686A Design For Manufacturing



Development of portable golf ball case to increase driving distance

2008-03-31

2006-20918 Ji-Seok Kim

2007-20824 Kyung-Tae Lee

Contents

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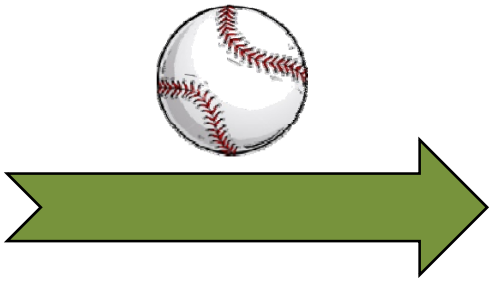
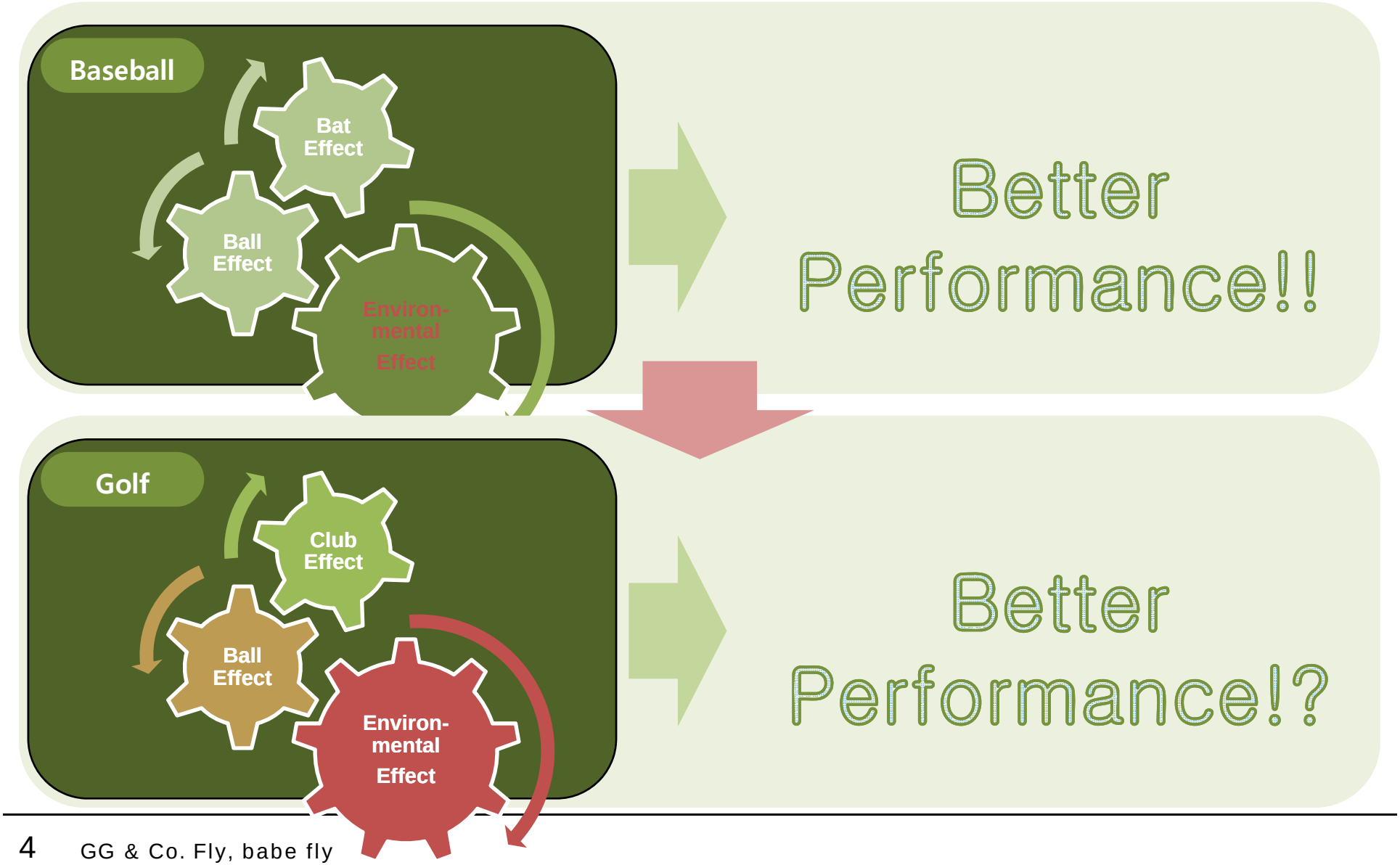
Research Background

- **Environmental effects on baseball games**
  - Humidity ↑ → air density ↓, drag ↓, expected to travel far
  - But, when balls kept in specified temperature, humidity conditions, humidity ↑ → balls get heavier, easier to grip, allowing greater spin
    - Case of humidor in Coors Field in Denver

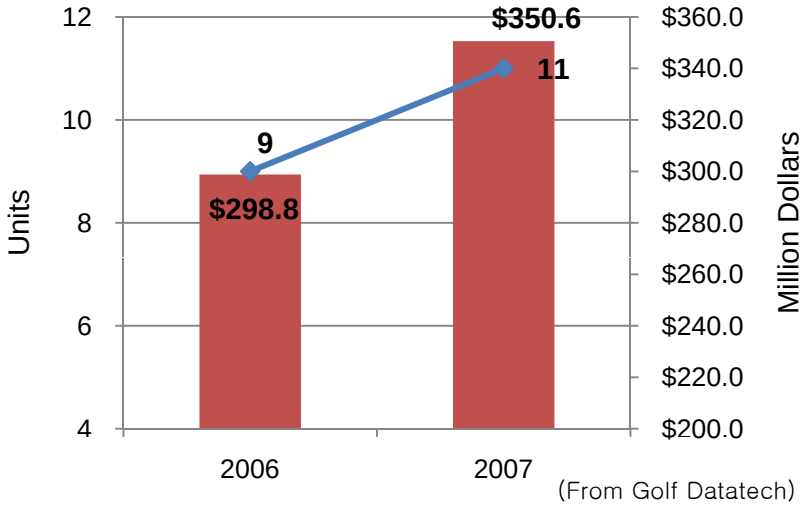


Conceptual structure

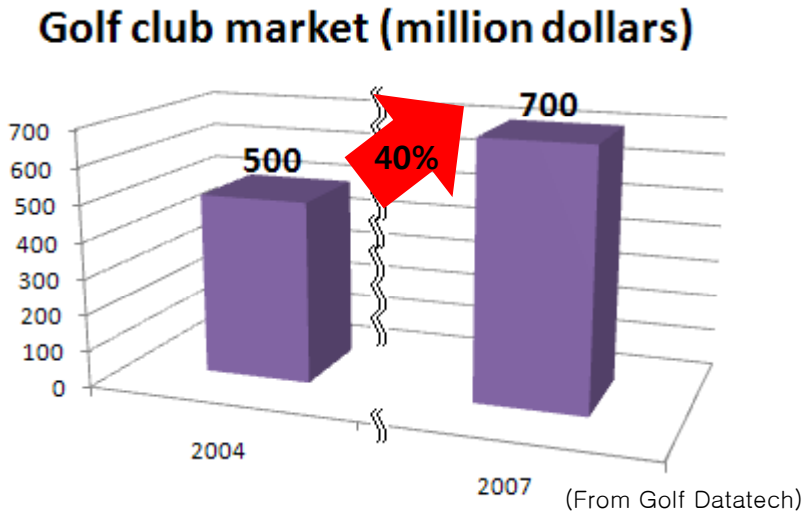


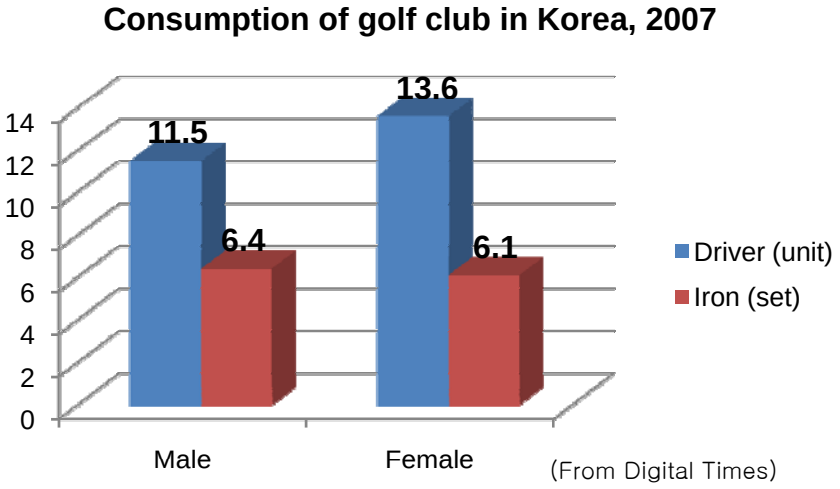
Market Research

- **World Big 3 golf Market**
  - U.S , Japan, Korea
  - Continuous growth
    - Ex) Korea
- **Golf Ball Sales in 2007**



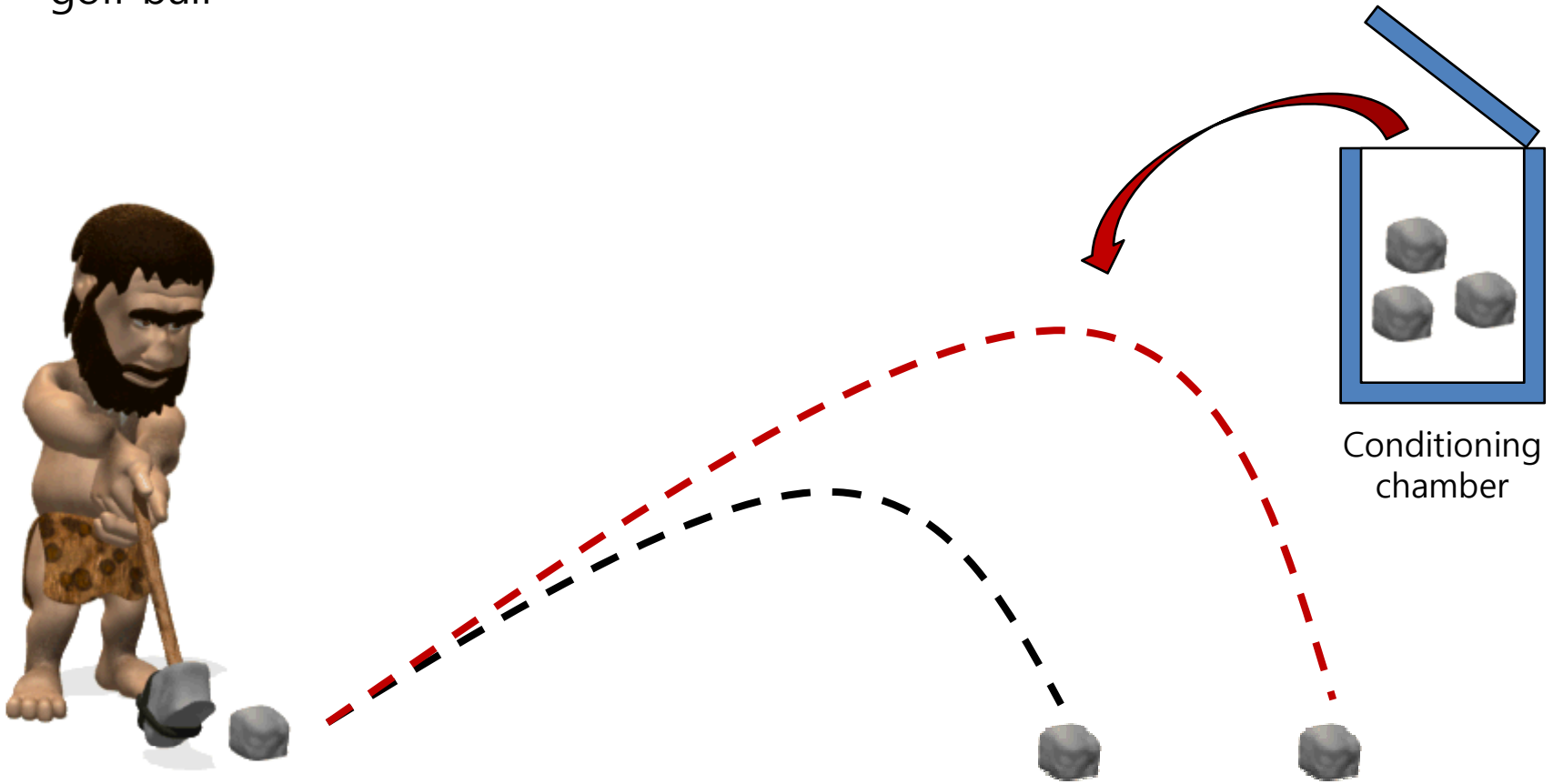
- **Demand of club by improving flying distance and precision**





Project Objective

- **Vision statement**
  - Development of portable golf ball case to increase driving distance of golf ball

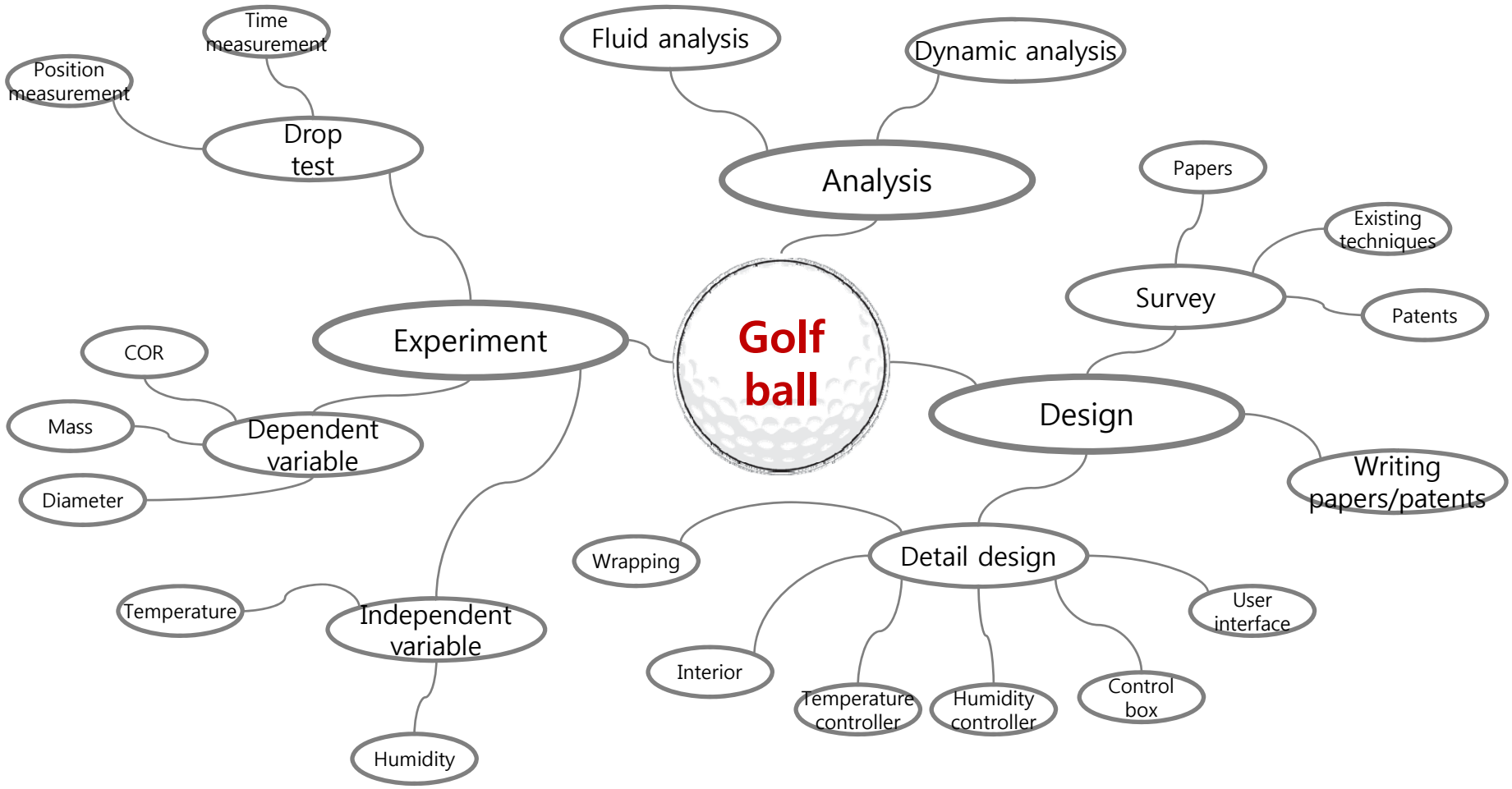


Project Objective (Con't)

- **Mission Statement**

Product description	• Development of portable golf ball case to increase driving distance of golf ball
Key business goal	• New, cheap method to increase driving distance
Target market for the product	• USA, Japan, and Korea golf clubs
Assumptions and constraints	• Using same ball, same driver
Stakeholder	• Golf ball manufacturing companies, golfers

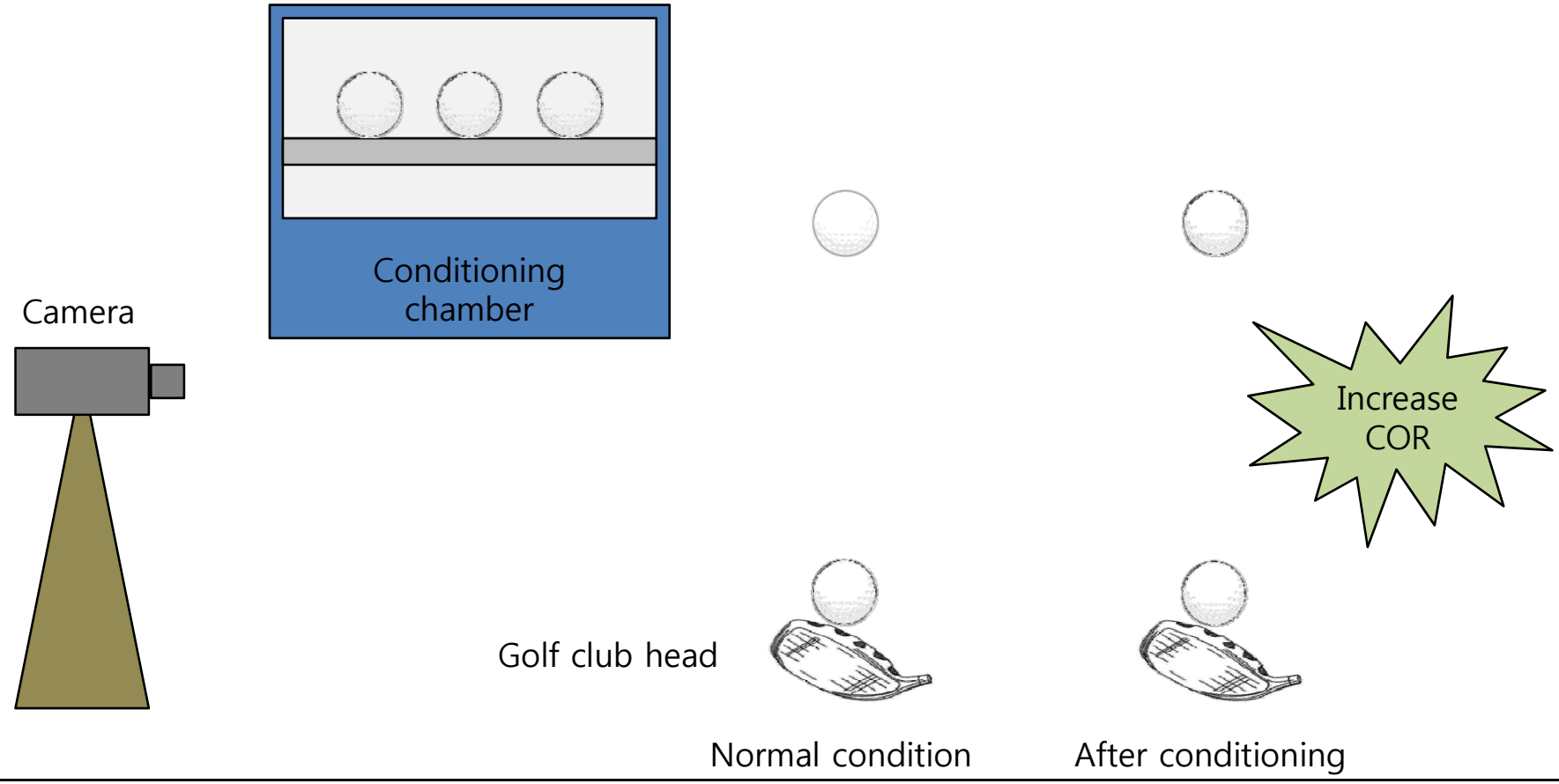
Bubble Diagram



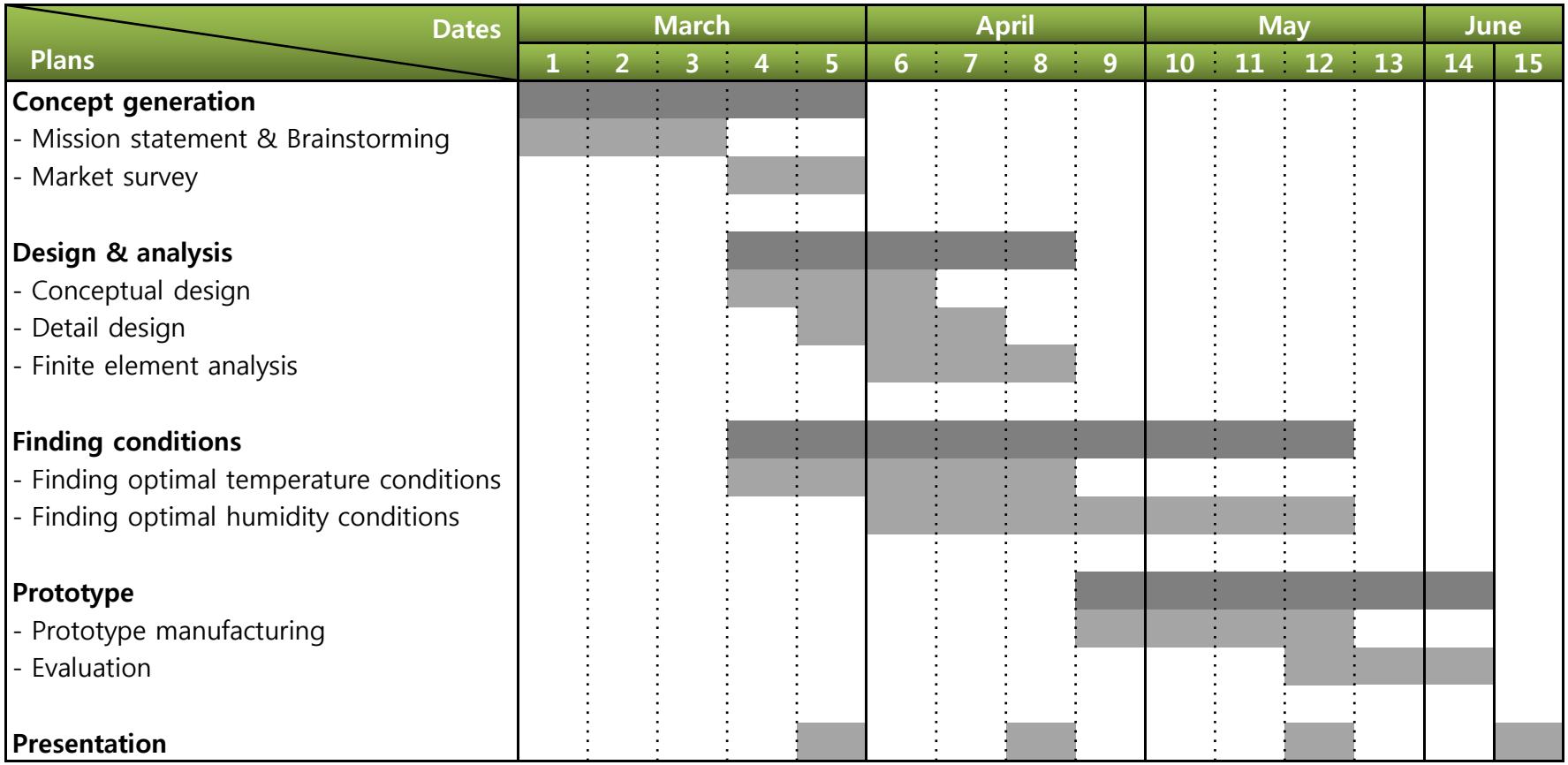
Experiment plan

* COR: Coefficient of Resistance

- **Drop test**
  - Measuring velocity to calculate COR*
  - Also measure mass, diameter change after conditioning



Plans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Plans
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June
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Concept generation
- Mission statement & Brainstorming
- Market survey
Design & analysis
- Conceptual design
- Detail design
- Finite element analysis
Finding conditions
- Finding optimal temperature conditions
- Finding optimal humidity conditions
Prototype
- Prototype manufacturing
- Evaluation
Presentation

Thank You !