

Patents & Innovation

By Hyung Sohn

Innovation (개발)

- Innovation applicable in a variety of contexts:
 - Business
 - Entertainment
 - Technology
- Innovation applicable in social work context:
 - Public policy (공공 정책), elderly care (노인 돌봄), care for the indigent (빈곤대상 돌봄), mental healthcare delivery(정신건강관련 서비스), etc.

Brief Introduction

- Patent Attorney (특허변호사) – combination of attorney and patent agent.
 - Pass state bar exam.
 - Pass patent agent exam.
- No “federally licensed” lawyer in US.

Brief Introduction

- Studied engineering in college
- Worked as a software engineer for over ten years
- Studied at Carnegie Mellon University (CMU) and George Washington University (GWU) for Master's Degree in Engineering and Computer Science
- Received Juris Doctor (JD) degree at George Mason University

Intellectual Property (지적 재산권)

- Trademarks (상표)
- Copyrights (저작권)
- Patents (특허)

Trademarks (상표)

- Governed by 15 USC chapter 22
 - Avoid consumer confusion by preventing a firm from diluting marks of other firms.
 - No specific term -
- 상표법 (법률 제14033호)
 - 제1조(목적) 이 법은 상표를 보호함으로써 상표 사용자의 업무상 신용 유지를 도모하여 산업발전에 이바지하고 수요자의 이익을 보호함을 목적으로 한다.

Trademarks (상표)

- Identifies origins or source of product or service.
 - Examples: Samsung[®], Hyundai[®]



Trademarks (상표)

- Infringement standard – “likelihood of confusion”
 - Example: McDonald’s[®] vs MacDonalDs restaurants (*not real case*)
- For infringement, must be in similar product or service.
 - Counter example: “Apple Federal Credit Union” & “Apple Computers” – no infringement
- 상표법 (법률 제14033호)
 - 제108조(침해로 보는 행위)

Copyrights (저작권)

- Governed by Title 17 USC chapters 1-8 and 10-12
- Protection of original works of authorship.
- Term: 70 years after death of author

- 저작권법 (법률 제17588호)
 - 제1조(목적) 이 법은 저작자의 권리와 이에 인접하는 권리를 보호하고 저작물의 공정한 이용을 도모함으로써 문화 및 관련 산업의 향상발전에 이바지함을 목적으로 한다
 - 제39조(보호기간의 원칙)
 - ① 저작재산권은 이 관에 특별한 규정이 있는 경우를 제외하고는 저작자가 생존하는 동안과 사망한 후 70년간 존속한다.

Copyrights (저작권)

- **Copyright** and Patent protection in US Constitution: Article 1 Section 8: “The Congress shall have the power ... To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries”
- “의회는 권한을 가진다... 제한된 시간 동안 작가와 발명가에게 각자의 저작물 및 발견에 대한 독점권을 확보하여 과학 및 유용한 예술의 발전을 촉진한다.

Copyrights (저작권)

- Copyright protection examples: Movies, music, books, arts
- Provides incentives for creators
- Examples – movie budgets (from the-numbers.com (21-Oct-30))
 - “Avengers: Endgame” (2019) - \$400,000,000
 - “Pirates of the Caribbean” (2011) – \$379,000,000
 - “Avengers: Age of Ultron” (2015) – \$365,000,000
 - “Star Wars Ep. VII: The Force Awakens” (2015) – \$300,000,000
 - “Justice League” (2017) – \$300,000,000

Patents (특허)

- Governed by Title 35 USC
 - Protection of inventions.
 - Balance of the interests of inventors on one hand and the interests of the public on the other hand
 - Term: 20 years from the first effective filing date
- 특허법 (법률 제16804호)
 - 제1조(목적) 이 법은 발명을 보호·장려하고 그 이용을 도모함으로써 기술의 발전을 촉진하여 산업발전에 이바지함을 목적으로 한다.
 - ① 특허권의 존속기간은 제87조제1항에 따라 특허권을 설정등록한 날부터 특허출원일 후 20년이 되는 날까지로 한다.

Patents (특허)

- Copyright and **Patent** protection in US Constitution: Article 1 Section 8: “The Congress shall have the power ... To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries”
- Interesting fact – Thomas Jefferson (third US President) is considered to be the first US patent examiner (특허 심사관)

Patents (특허)

- Patents – exclusive right (독점적 권리) – right to exclude others;
- Patent license – permission to infringe (침해할 수 있는 권한) on patent in exchange for something of value (e.g., money).

Patents (특허)

- Technological innovations make life better
 - Healthcare and medical – increased life expectancy 1950, 47 years; 2020, 83 years ([statista.com/statistics/1008199/life-expectancy-south-korea-historical](https://www.statista.com/statistics/1008199/life-expectancy-south-korea-historical/)) (retrieved 10/31/21)
 - Cars, buses, trains, planes – regular people (일반 사람들) are more mobile than royalty of 100 years ago even later.
 - Smartphones, computers, internet – regular people are have access to information

Patents (특허)

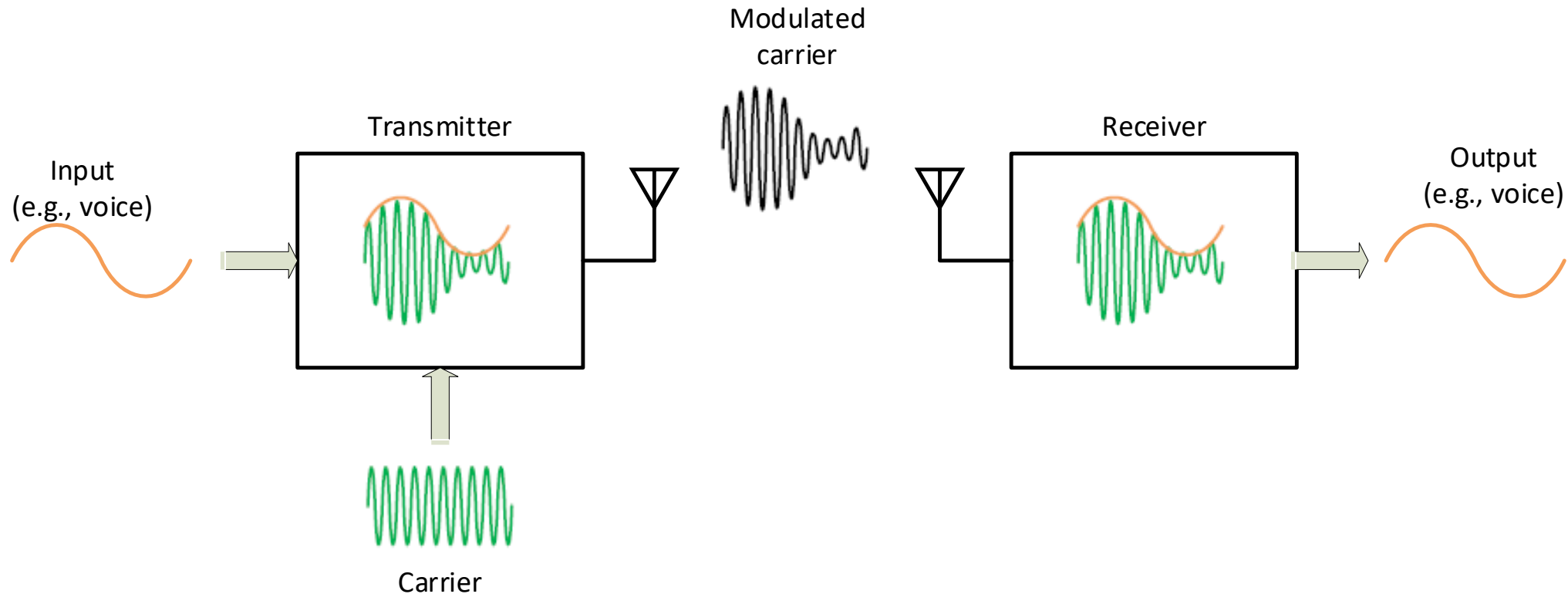
Significant Patents

- Patent No. 223,898 – Lightbulb (전구), Thomas Edison
- Patent No. 196,473 – gas motor engine (자동차 엔진), Nicolaus Otto
- Patent No. 174,465 – telephone, Alexander Graham Bell
- Nikola Tesla (at least 278 patents) – electrical motors, electricity generation
- Patent No. 775134 – safety razor, King Gillette
- Patent No. 6285999 - “method for node ranking in a database” – Google

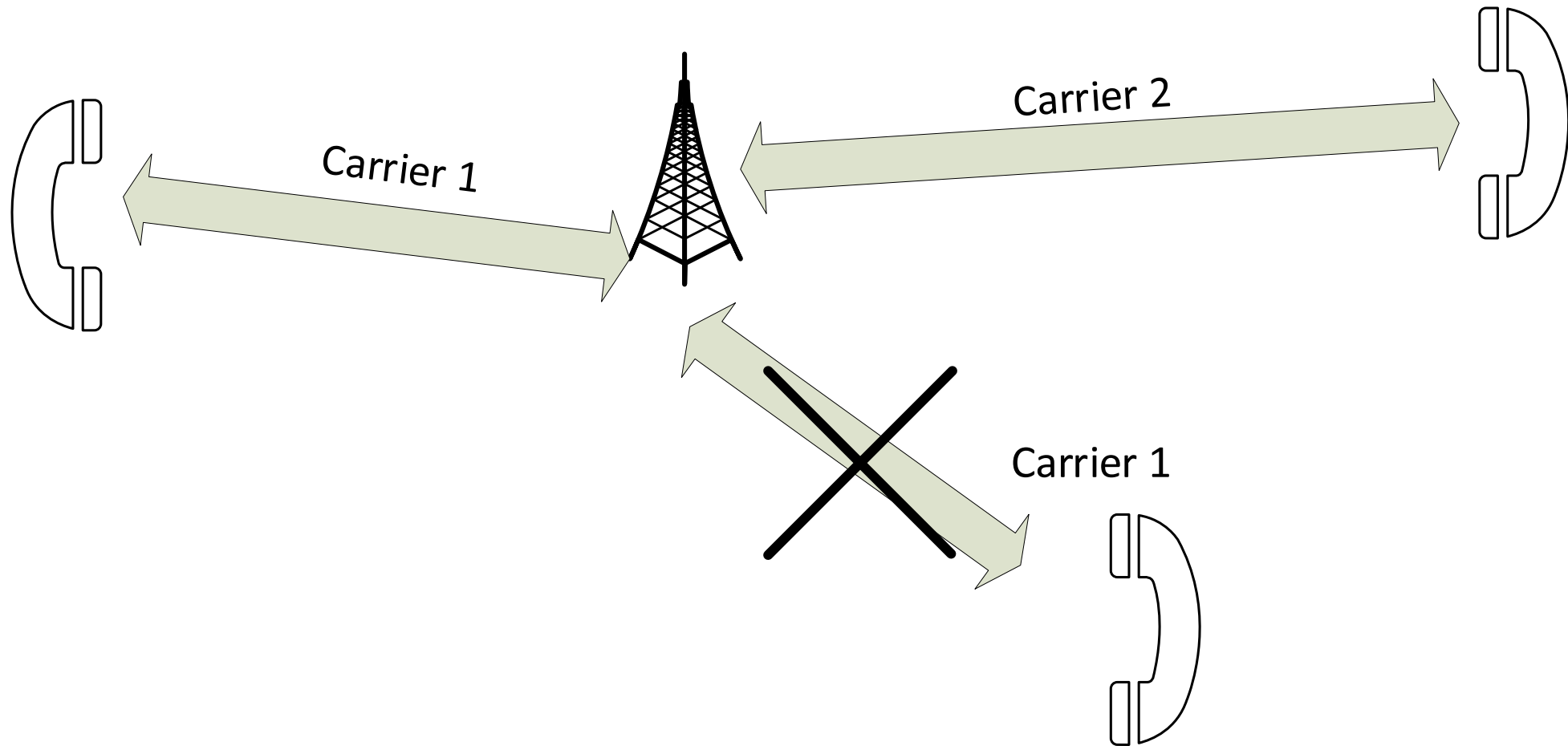
Patents (특허)

- Those patents are the exceptions
- Most patents represent incremental developments

Technical Innovation Example: Wireless communication (무선 통신)



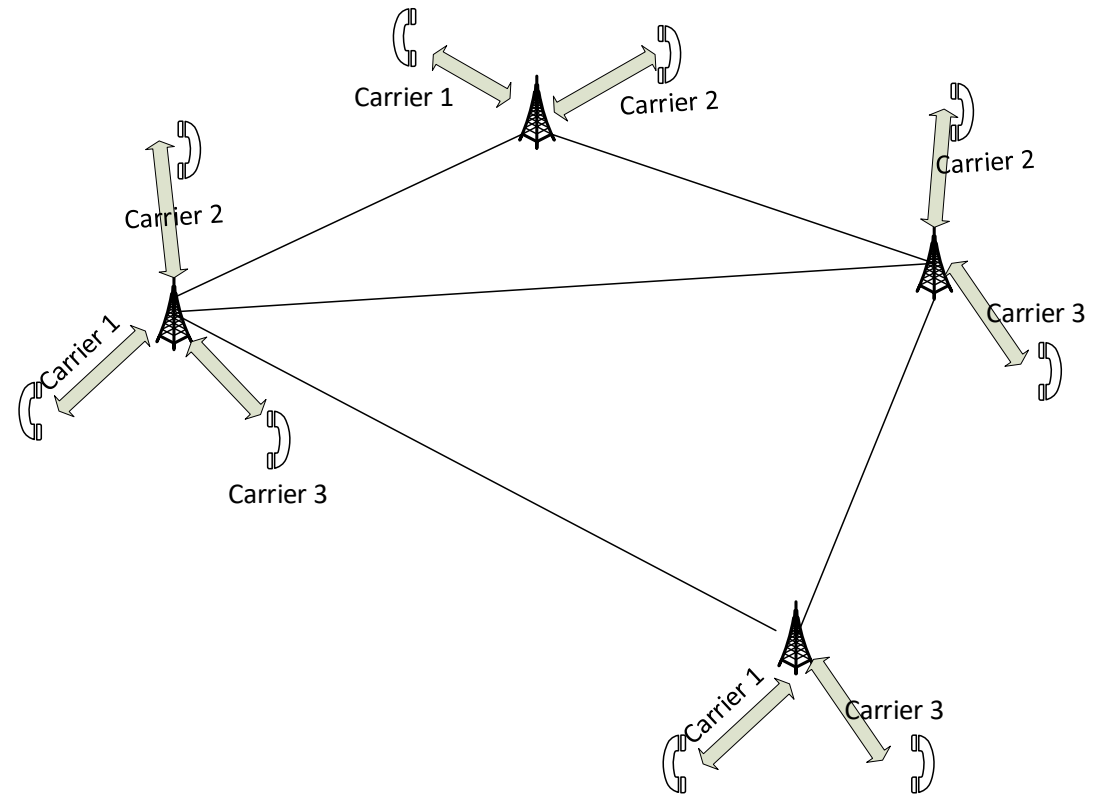
Technical Innovation Example: Wireless communication



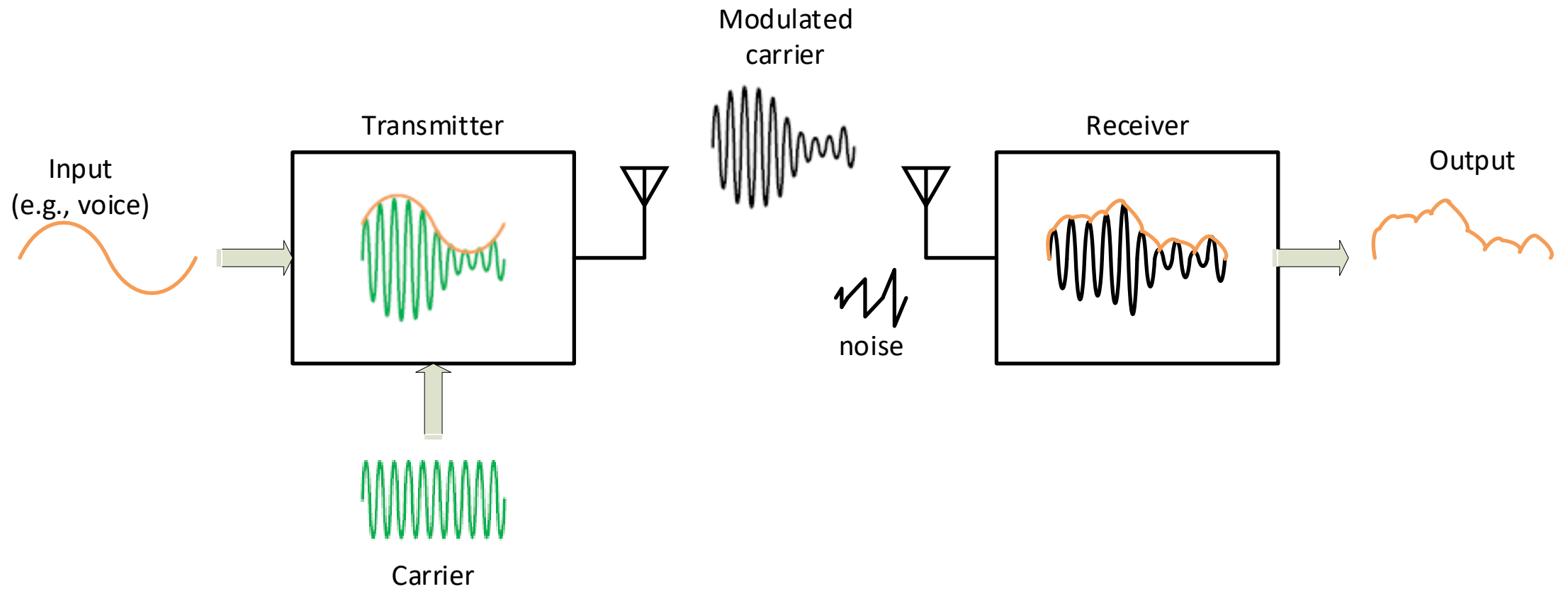
Technical Innovation Example: Wireless communication

Innovation

- Increase number of base stations – better coverage
- Use weaker carrier signals – can reuse carriers at different base stations far away



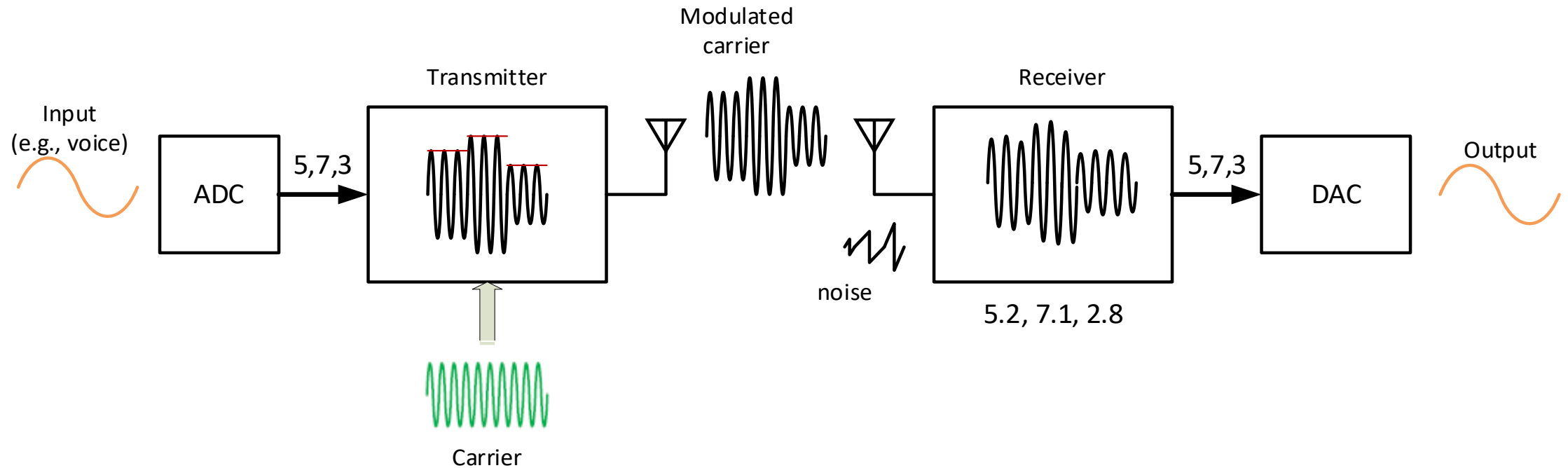
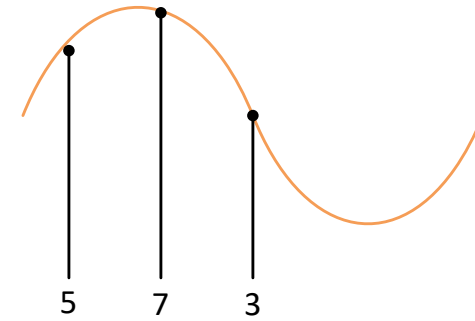
Technical Innovation Example: Wireless communication



Technical Innovation Example: Wireless communication

Innovation

- Digitize input to combat noise



Technical Innovation Example: Wireless communication (무선 통신)

Innovation

- Use numbers to represent different types of data:
 - Audio – numbers represent volume;
 - Pictures – numbers represent color (red, green, blue) and brightness.
 - Text – numbers represent letters.