

**STEVEN  
JOHNSON**

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**WHERE GOOD IDEAS  
COME FROM**

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**THE NATURAL  
HISTORY OF  
INNOVATION**

FROM THE BESTSELLING  
AUTHOR OF *EVERYTHING  
BAD IS GOOD FOR YOU*  
AND *THE INVENTION  
OF AIR*

# Summary & Review

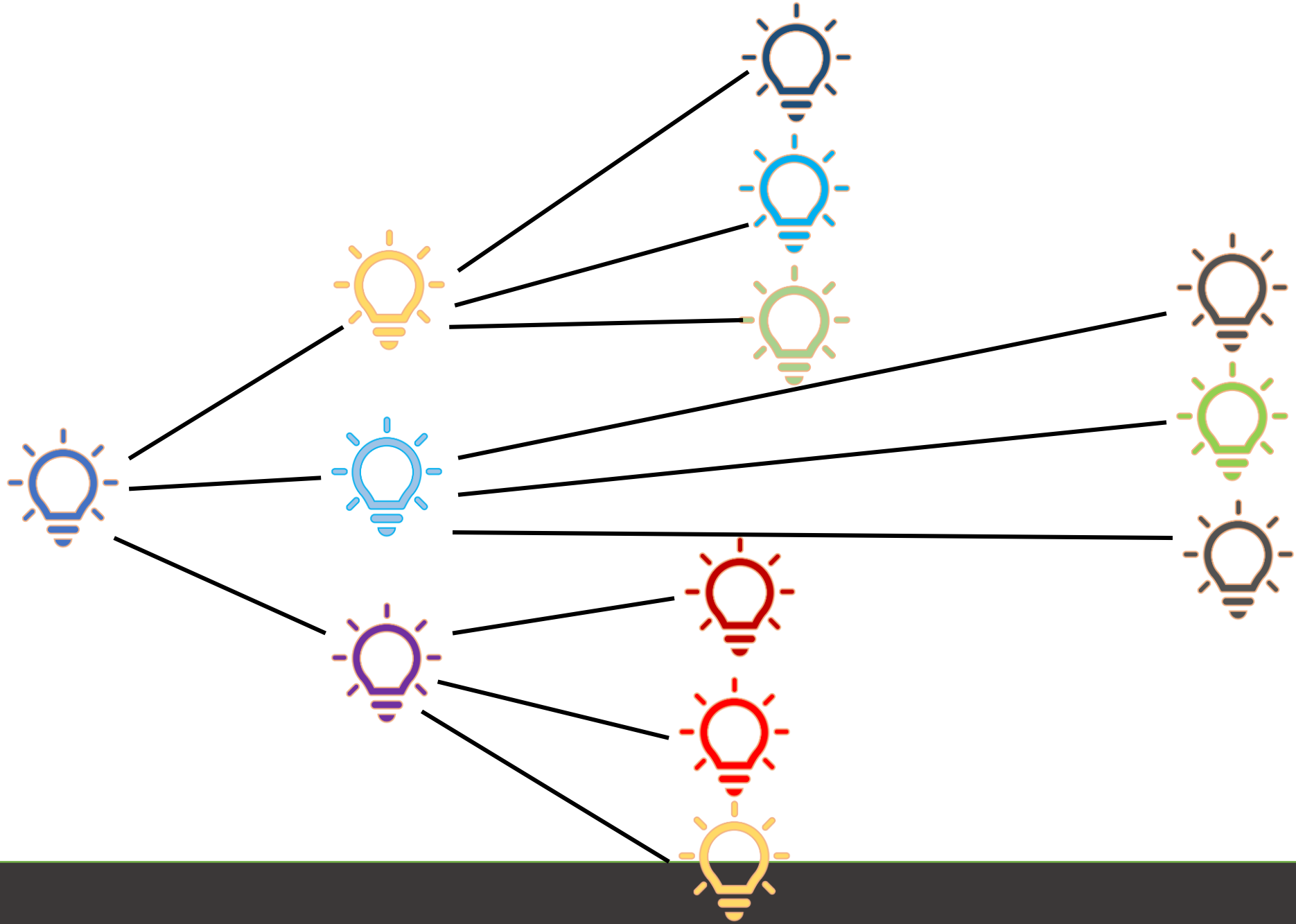
**Abdul Manan**  
**Mphil - DS**

# Introduction

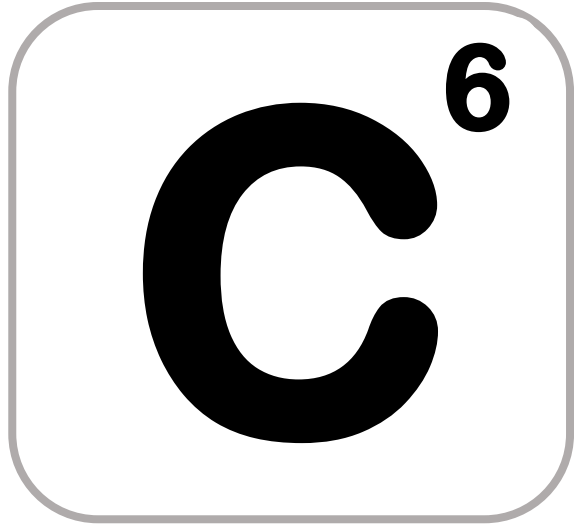
- Great discoveries often evolves as slow hunches, maturing, and connecting to other ideas overtime.
- ‘Lone Scientists’ and eureka moments are usually not the sources of great ideas.
- Instead working together in team, socializing, sharing ideas and improving upon them are more sources of great ideas.
- Both evolution and innovation thrive where opportuinites for serenditious connections exists.
- Innovation is a more organic process that tend to happen over long time period.

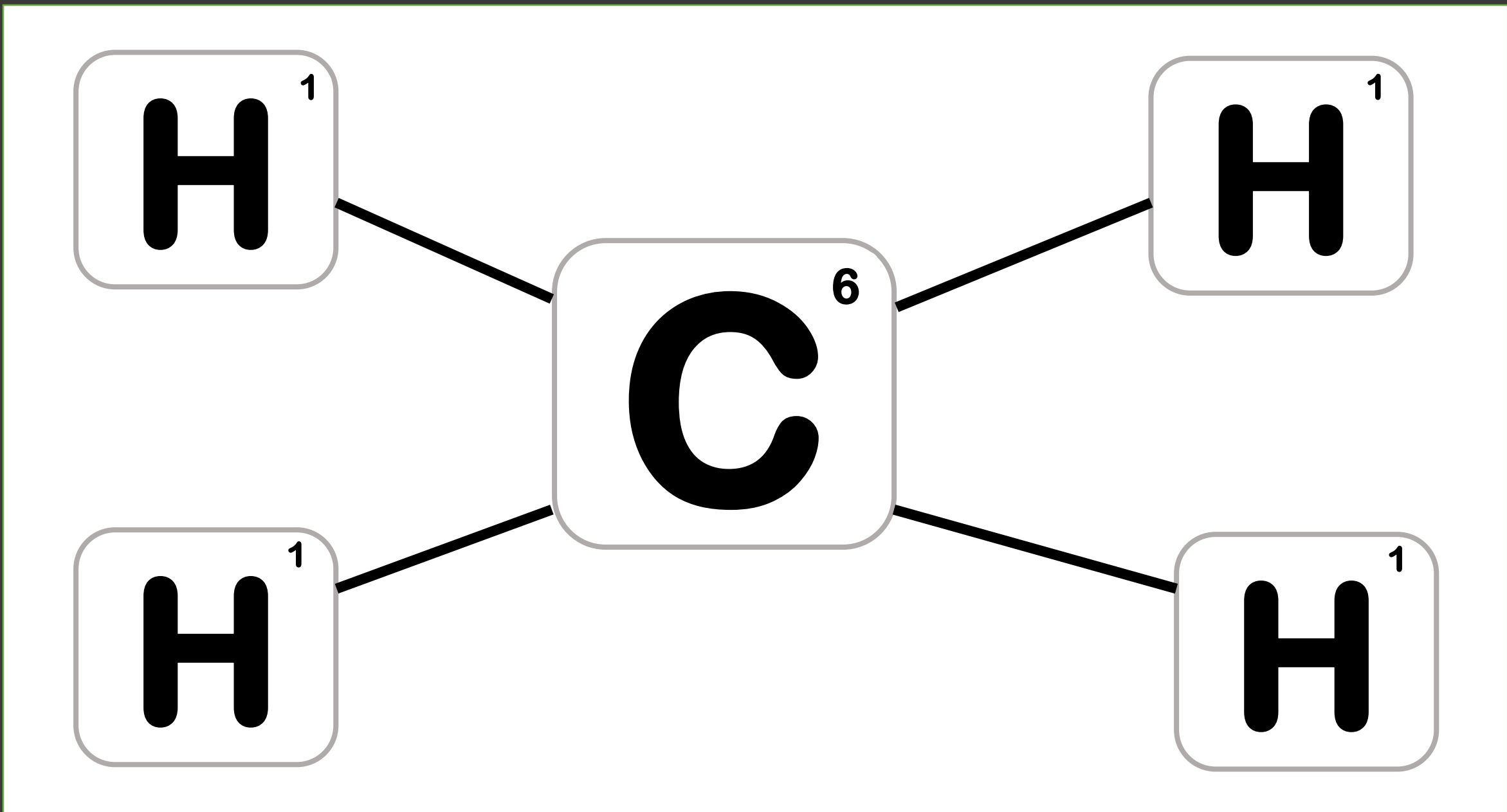
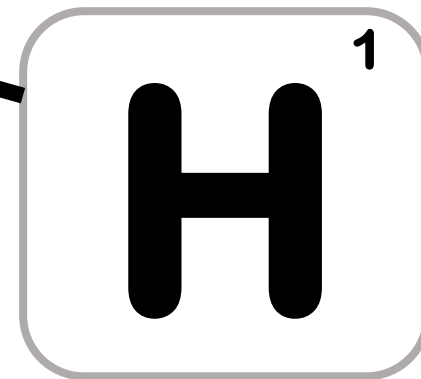
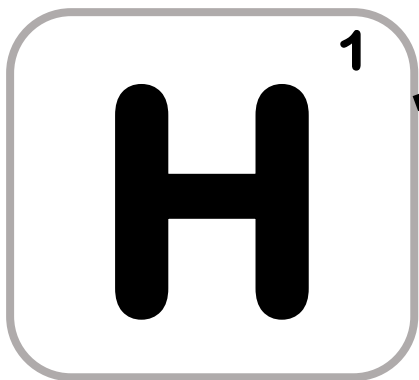
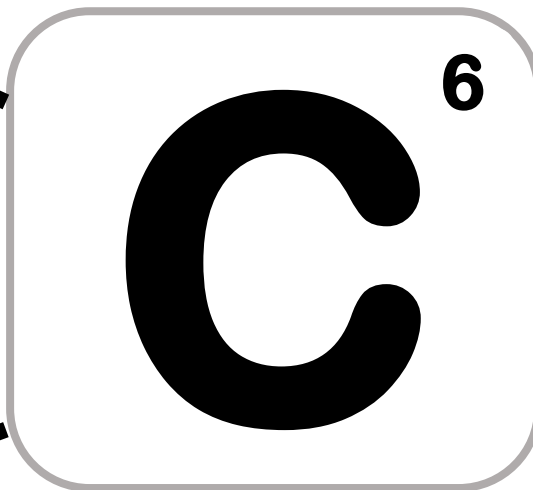
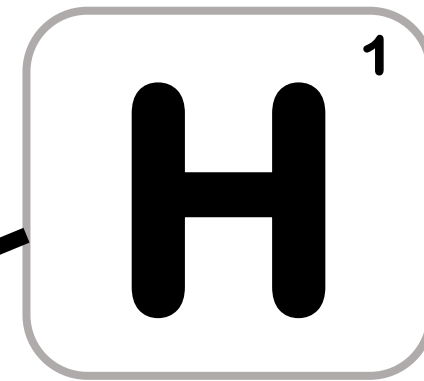
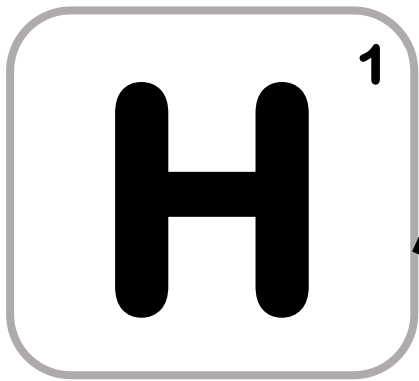
1

# The Adjacent Possible

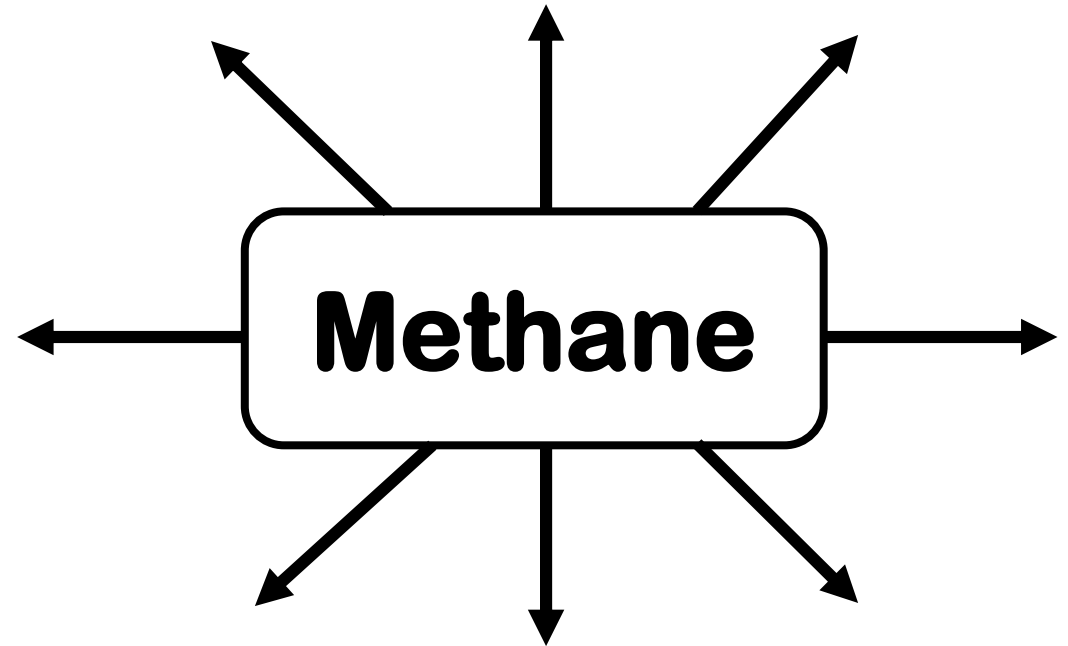
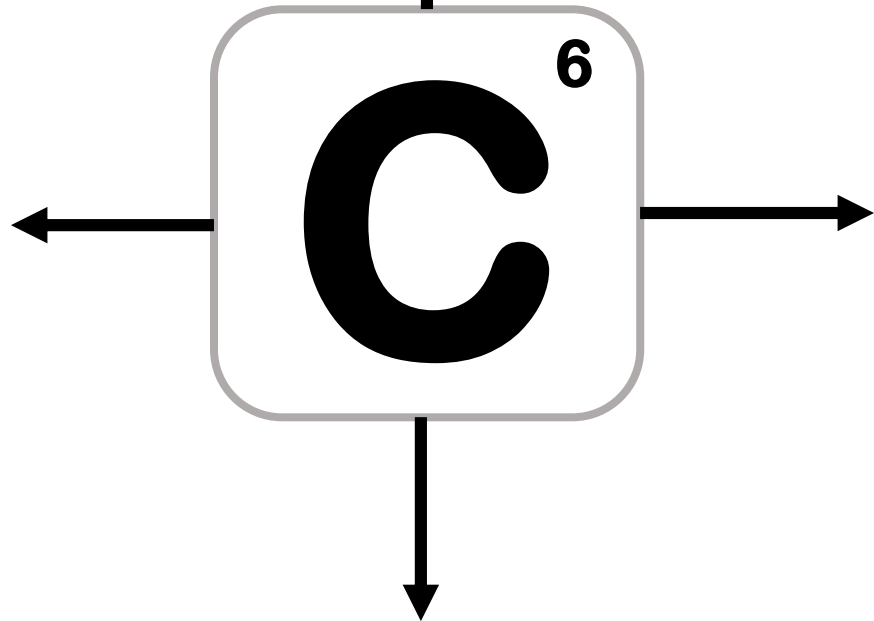








**Methane**





Touch Screen



Celluar data

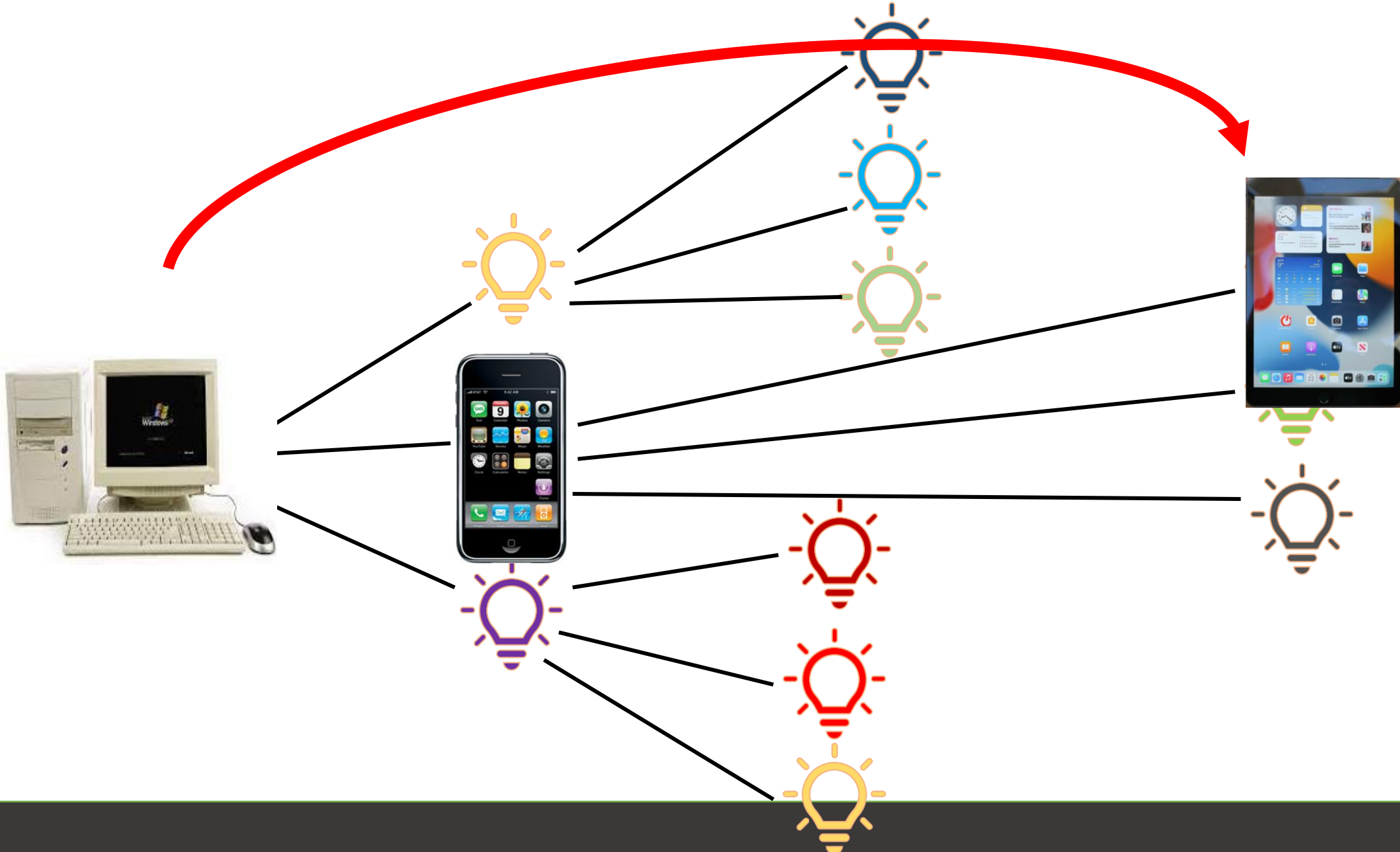
Flash Storage

Gyroscope

Maniturized CPU







## 2. Slow Hunches

- Rarely inventions are created through Eureka moments.
- Most ideas come into the world half-baked, more 'hunch' than revelation.
- More often than not, the missing element is somewhere else living as another hunch in another head.
- The theory of natural selection didn't simply popped in Darwin's.
- Tim Berners-Lee developed the hunch which led to the creation of World Wide Web inspired by the book he read during his childhood. This hunch took decades to mature and actualize.

## 3. Platforms

- Platforms play the role of springboard which help launch innovations.
- The Global Positioning System (GPS), originally developed for military use, it has now spurred countless innovations from GPS trackers to location-based services and advertising.
- Platforms are often built on stacks of other platforms.

## 4. Large Networks

- The reason that carbon is the basis life on earth is because it is good at connecting with other atoms.
- Creative individuals have broad social networks beyond their organizations.
- Most important ideas are discovered during informal discussions rather than lab meetings rather than working microscope.
- Cities are disproportionately more creative than smaller towns.

## 5. Collaboration vs Competition

- Collaboration is at least as important as competition.
- Great discoveries made during last 600 years have increasingly moved away from individual inventors to networks of people collaborating.
- Market-spurred innovation has done far better than command economies, still not the optimal way forward.
- Inventors do deserve reward, but the main concern should be to increase innovation in general.



1

2

MARKET/INDIVIDUAL

MARKET/NETWORK

NON-MARKET/INDIVIDUAL

NON-MARKET/NETWORK

3

4

Mason Jar  
 Tesla Coil  
 Gatling Gun  
 Nylon  
 Vulcanized Rubber  
 Programmable Computer  
 Revolver  
 Dynamite  
 AC Motor  
 Air-Conditioning  
 Transistor

Airplane  
 Steel  
 Induction Motor  
 Contact Lenses  
 Moving Assembly Line  
 Locomotive  
 Electric Motor  
 Refrigerator  
 Telegraph  
 Sewing Machine  
 Elevator  
 Steel  
 Typewriter  
 Plastic  
 Calculator  
 Internal Combustion Engine  
 Telephone

Lightbulb  
 Automobile  
 Radio  
 Welding Machine  
 Motion Picture Camera  
 Vacuum Cleaner  
 Washing Machine  
 Vacuum Tube  
 Helicopter  
 Television  
 Photography  
 Jet Engine  
 Tape Recorder  
 Laser  
 VCR  
 Personal Computer  
 Bicycle

MARKET/INDIVIDUAL

MARKET/NETWORKED

NON-MARKET/INDIVIDUAL

NON-MARKET/NETWORKED

Spectroscope  
 Bunsen Burner  
 Rechargeable Battery  
 Nitroglycerine  
 Liquid Engine Rocket  
 Uncertainty Principle  
 Electrons in Chemical Bonds  
 Absolute Zero  
 Atomic Theory  
 Stethoscope  
 Uniformitarianism  
 Cell Nucleus  
 Benzene Structure  
 Heredity  
 Natural Selection  
 X-Rays  
 Blood Groups

Hormones  
 $E = mc^2$   
 Special Relativity  
 Earth's Core  
 Radiometric Dating  
 Cosmic Radiation  
 General Relativity  
 Universe Expanding  
 Ecosystem  
 Double Helix  
 CT Scan  
 Archaea  
 World Wide Web  
 Continental Drift  
 Superconductors  
 Neutron  
 Early Life Simulated

Braille  
 Chloroform  
 Aspirin  
 Enzymes  
 Stratosphere  
 Cosmic Rays  
 Modern Computer  
 Artificial Pacemaker  
 Radiocarbon Dating  
 Graphic Interface  
 Endorphins  
 Infant Incubator  
 Oncogenes  
 Atoms Form Molecules  
 Punch Cards (Jacquard Loom)  
 Suspension Bridge  
 Second Law  
 Anesthesia  
 Germ Theory

Periodic Table  
 Cosmic Microwave Background Radiation  
 Cell Division  
 Cell Differentiation  
 Radioactivity  
 Electron  
 Mitochondria  
 Vitamins  
 Neurotransmitters  
 Genes on Chromosomes  
 Chemical Bonds  
 Radiography  
 Penicillin  
 Universe Accelerating  
 Quantum Mechanics  
 Radar  
 GPS  
 Liquid-Fueled Rocket  
 DNA (as Genetic Material)  
 RNA (as Genetic Material)  
 Asteroid K-T Extinction

## 6. Serendipity

- Modernist cultural innovations of the 1920s were largely a result of artists, poets and writers meeting at the Parisian cafés.
- Shared interactions allow ideas to diffuse, circulate and be combined randomly with others.
- Innovators like Benjamin Franklin and Charles Darwin favored working on multiple projects simultaneously.
- On an organizational level, the key to innovation and inspiration is a network which allows hunches to mature, scatter and combine with others openly.

## 7. Error

- Error is present in both the evolution of life and the innovation of great ideas, and it is not always a bad thing.
- In natural reproduction: Evolution would have long ago come to standstill if it was not for the mutations i.e. random errors.
- Alexander Fleming only discovered penicillin because of an error: he mistakenly allowed a bacteria sample to be contaminated by mold and began to wonder what had killed the bacteria
- In fact, major new scientific theories often begin as pesky little errors in the data which keep demonstrating that something in the dominant theory is wrong.

# Critique

- It is a very interesting summary of the history of good ideas. However, I think where this talk fell short is discussing how we can apply this in the modern environment.
- I am also curious about how to fit the internet in it – is this modern ultra-chaotic information sharing network more conducive to innovation? Or are we overloading ourselves and getting too much stimulus?
- Chaos is the mother of invention! Seems a very interesting idea the opposite of conventional wisdom which emphasize on focus on thing a time.

# Critique

- Arguments for open-source ideas instead of intellectual property protection also seems something especially presenting it from the lens of efficiency which is generally slated as the main argument for patents and commercial protection.
- This book seems best suited for the people who are good at chemistry and neurology as many of the examples and metaphors presented in this book are from these two fields.
- At times the vocabular used seemed difficult for explaining simple arguments or elements.

**Thank You!**