GIRIK MALIK

INNOVATION & IP

OBJECTIVES

- Describe types of innovation
- Illustrate the barriers and challenges of innovation
- Identifying process of knowing to doing gap

HISTORICAL PERSPECTIVE

- Wright brothers, how they went to isolated islands and watched birds
- Henry Ford’s assembly line and 8 hour work day
- Edison’s invention of a light bulb
- Steve Jobs

MILESTONE MEDICAL INNOVATIONS

- Vaccine: Small-pox vaccine 1796
- Medical device: Hypodermic syringe 1844
- Pharmaceutical: Arsphenamine 1910

INNOVATION

- The design, invention, development, and/or implementation of new or altered products, services, processes, systems, organizational structures, or business models for the purpose of creating new value for customers and financial returns for the firm
- its more than invention…..its transformative

https://www.healthcatalyst.com/innovation-in-healthcare-why-needed-where-going

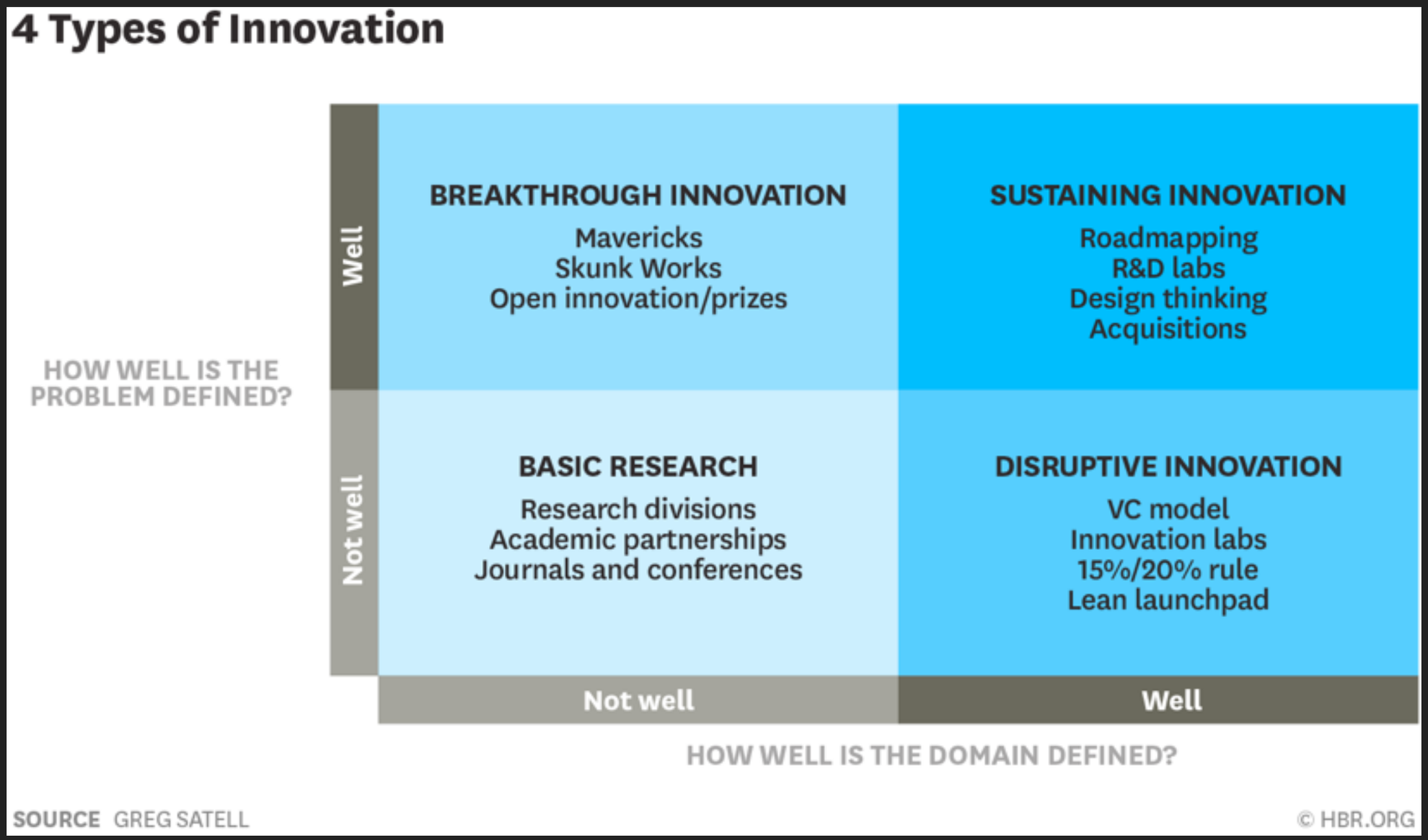
The greatest discovery comes not from seeing new landscapes but from seeing the familiar with new eyes

- Marcel Proust

THE INNOVATOR'S CHALLENGE

- To define clearly
  - the need
  - approach
    - cost effectiveness
    - comparison with the competition
- Solution looking for a new problem or solution of an existing problem
- The important thing is not to stop questioning; curiosity has its own reason for existing - Einstein

TYPES OF INNOVATION



https://hbr.org/2017/06/the-4-types-of-innovation-and-the-problems-they-solve

BREAKTHROUGH INNOVATION

- Unconventional skills and domains
- Multidisciplinary
- Collaborations are effective and essential

SUSTAINING INNOVATION

- Improvement
- Clarity
- Strategic Road-mapping, traditional R&D
- Mergers and Acquisitions

BASIC RESEARCH

- Core
- What RINCH does to some extent
- Discoveries
- Federally Funded, Local Universities and Institutes

DISRUPTIVE INNOVATION

- Disruption Theory
- Not every novel idea is a disruption, not every disruption is novel
- Targeting the right audience with the right product

DIGITAL INNOVATION

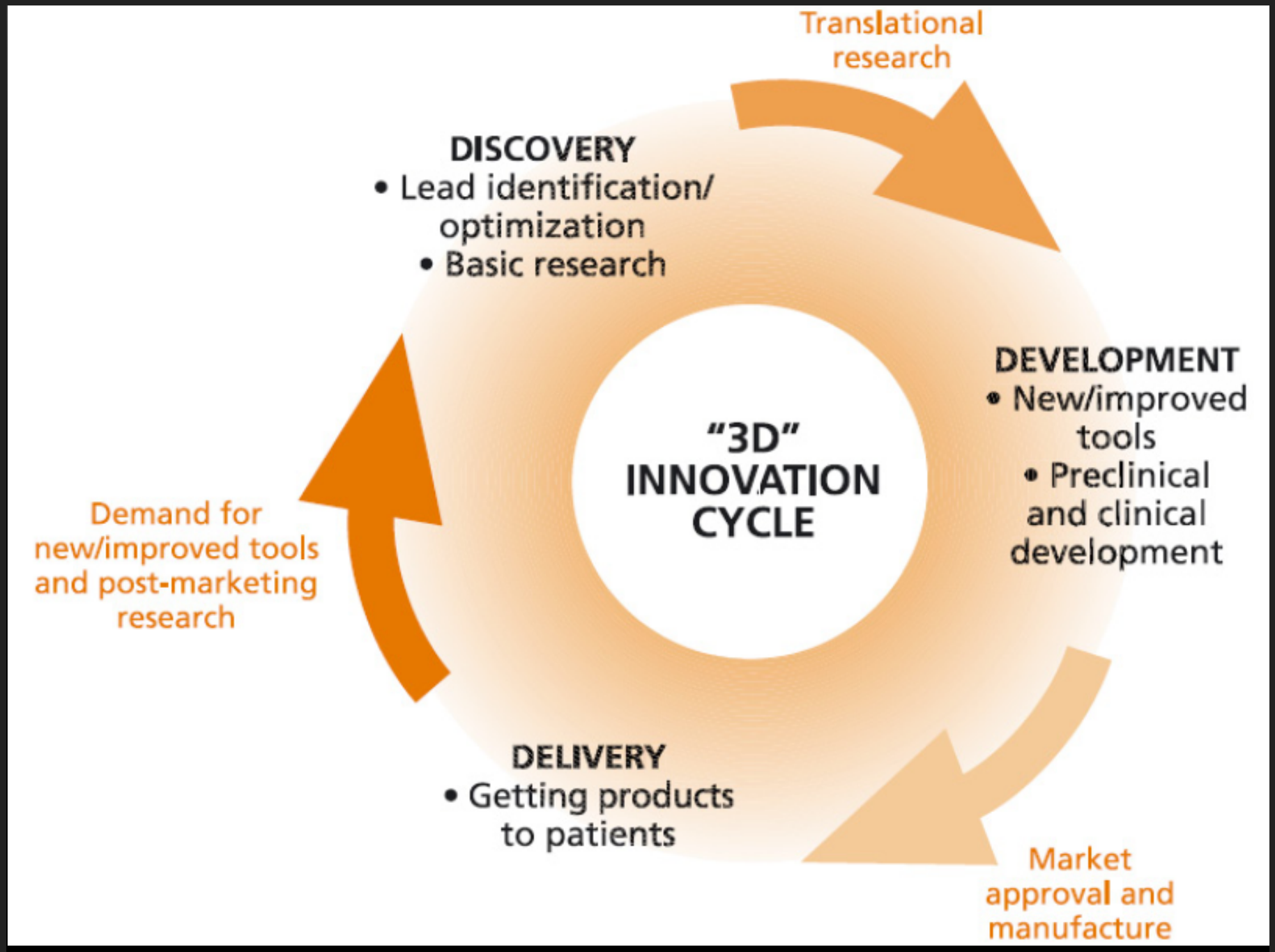
https://www.economist.com/news/business/21717990-telemedicine-predictive-diagnostics-wearable-sensors-and-host-new-apps-will-transform-how

LEARNING FROM ESTABLISHED INNOVATORS

- A culture that promotes the free exchange of ideas.
- An emphasis on internal cross-functional collaboration
- An openness to external expertise
- Prioritizing the best ideas to invest in

https://www.hhnmag.com/articles/8601-advancing-innovation-in-health-care

CYCLE OF INNOVATION



Source: WHO

OPEN INNOVATION

- Within organization
- Among generations
- Wide array of specialists
- Guided assembling of teams
- Social Interactions

WHERE DOES INNOVATION HAPPEN

- In a team. We live in a digital age
- Between generations
- Wide array of specialists - Bell Labs
- Intersection of Technology and Humanity

WHY INNOVATION IS SO HARD?

- The six forces affecting innovation
  - Industry Players
  - Funding
  - Policy
  - Technology
  - Customers
  - Accountability

https://hbr.org/2006/05/why-innovation-in-health-care-is-so-hard

AVOIDING THE OBSTACLES

- Mostly in the hands of legislators
- Recognise the six forces
- Turn them to your advantage
- Else, work around them, even push ideas for future years

CLOSING THE GAP

- Define the problem clearly
- Draw on a paper
- Prototyping
- Legal approval and IP protection

PROTOTYPING

- a-prototyping
  - 3D printing, moulding, carving, bread-board techniques
  - Controlled testing
- β-prototyping
  - Limited production for testers outside your team
  - Rigorous tests

A BIOMOLECULE BASED DATA STORAGE SYSTEM

Google Patents

Sign In

A biomolecule based data storage system

Abstract

The present invention describes a biomolecule based storage system for converting, storing the data in DNA coded form and retrieving data using pointer file approach. User input data is converted into 4base DNA sequence, called Nibble, which is further mapped onto the DNA sequence of an organism. The first position of each converted nibble is then obtained and stored in a pointer file. By mapping the positions of pointer file onto the DNA sequence of the organism, the data can be retrieved.

Classifications

G06F17/30345 Update requests

View 5 more classifications

WO2016059610A1

WO Application

Find Prior Art

Other languages: French

Inventor: Girik MALIK, Pawan K. DHAR

Original Assignee: Malik Girik, Dhar Pawan K

Priority date: 2014-10-18

Family: US (1) JP (1) CA (1) **WO (1)**

Date	App/Pub Number	Status
2015-10-16	PCT/IB2015/057964	
2016-04-21	WO2016059610A1	Application

Info: Non-patent citations (3), Legal events, Similar documents, Priority and Related Applications

External links: Espacenet, Global Dossier, PatentScope, Discuss

Description

FIELD OF INVENTION

[0001] The present invention relates to data storage system, particularly storing data in a naturally occurring or synthetically created biomolecule such as but not limited to Deoxyribonucleic acid (DNA), Ribonucleic acid (RNA), proteins, primary metabolites, secondary metabolites, their complexes and other combinations.

Claims

WE CLAIM:

1) A biomolecule based data storage system, comprising:

an E.coli Master DNA file, said file containing physical DNA sequence of E.coli;

an ASCII map having 256 characters and 256 combinations of 4-base DNA

METHOD OF DATA COMPRESSION

Google Patents

Sign In

Method of data compression and decompression

Abstract

The method of present invention relates to data compression (and decompression) wherein during compression, data is reshaped into a matrix and stored on an image preferably of 32- bit floating point of the size of the matrix. The data is reshaped into a two dimensional array by adding bits to the data so that it reaches to its closest integer size. The method of compression and decompression provides an in-built security features. It facilitates efficient memory management and minimal loss of data during data compression.

Classifications

H03M7/3068 Precoding preceding compression, e.g. Burrows-Wheeler transformation

WO2017187244A1

WO Application

Find Prior Art

Other languages: French

Inventor: Girik MALIK, Pawan K. DHAR

Original Assignee: Malik Girik, Dhar Pawan K

Priority date: 2016-04-28

Family: WO (1)

Date	App/Pub Number	Status
2016-07-19	PCT/IB2016/054294	
2017-11-02	WO2017187244A1	Application

Info: Patent citations (1), Similar documents, Priority and Related Applications

External links: Espacenet, Global Dossier, PatentScope, Discuss

Description

METHOD OF DATA COMPRESSION AND DECOMPRESSION

FIELD OF THE INVENTION The technology described herein relates to compression of data in floating-point for efficient data storage.

BACKGROUND OF THE INVENTION AND PRIOR ART The data compression involves

Claims

CLAIM

1) A method of data compression comprising:

reading the data to be compressed from a file and storing it in an array or list;

reshaping the data stored in the array or list into a matrix;

PATENT LAW

- 500 BCE - Chefs in Sybaris
- Encouragement for refinement in luxury
- Venice
  - 1416 - Ser Franciscus Petri of Rhodes
  - 1421 - Filippo Brunelleschi’s individual act

MODERN PATENT SYSTEM

- 1450 Venice - Decree for new and inventive devices
- Period of Protection - 10 Years
- Mostly in the field of Glass making
- 16th Century English Crown
- James I of England
- 18th Century - Full Specifications and Patenting Medicines

WHAT CAN BE PATENTED

- Novel
- Non- obvious
- Capable of industrial application
- Must not be declared as non-patentable under the patent act

WHAT CAN NOT BE PATENTED

- Any artistic creation
- Mathematical methods
- Business schemes
- Opposing universal law

PATENT INFORMATION

- Technology field of invention
- What technical problem is solved and how
- Prior art
- Who is the inventor
- When and Where the application for patent was filed
- Name and address of inventor

IMPORTANCE OF PATENT INFORMATION

- To researcher/inventor
  - to avoid duplication of research
  - to find real solutions to technical problems
  - to keep up to date with developments in technology
- To industry
  - to improvise existing technology
  - to increase production
  - to identify suitable technologies for adaptation

LIMITATIONS OF PATENT

- Cost
- Time
- Loss of information
- Infringers
- Exploitation of invention by inventor

SUMMARY

- This is an era of innovation revolution in technology
- We do not have to search the problems,…instead find the people who are adversely affected
- The idea lies in simplicity
- Close knowing-to-doing gap
- Sustain your ideas by brainstorming, prototyping and patenting

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QUESTIONS?