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14th Annual International IPR Seminar

4 IR & IPR

(A I , IOT, 3 D printing and what not !!)

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For academic discussions only
Data and information are indicative

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Kindly note . . .

- *This particular presentation is indicative and gives an overview. Actual presentation may differ to some extent.*

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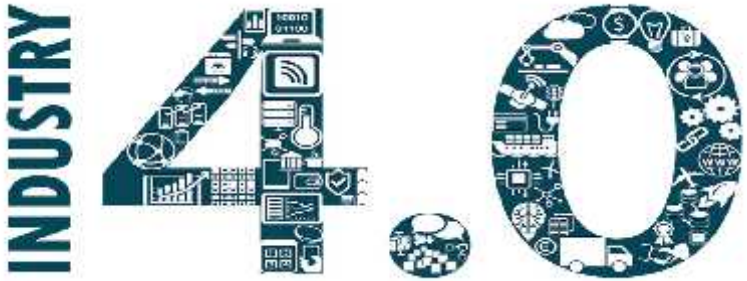

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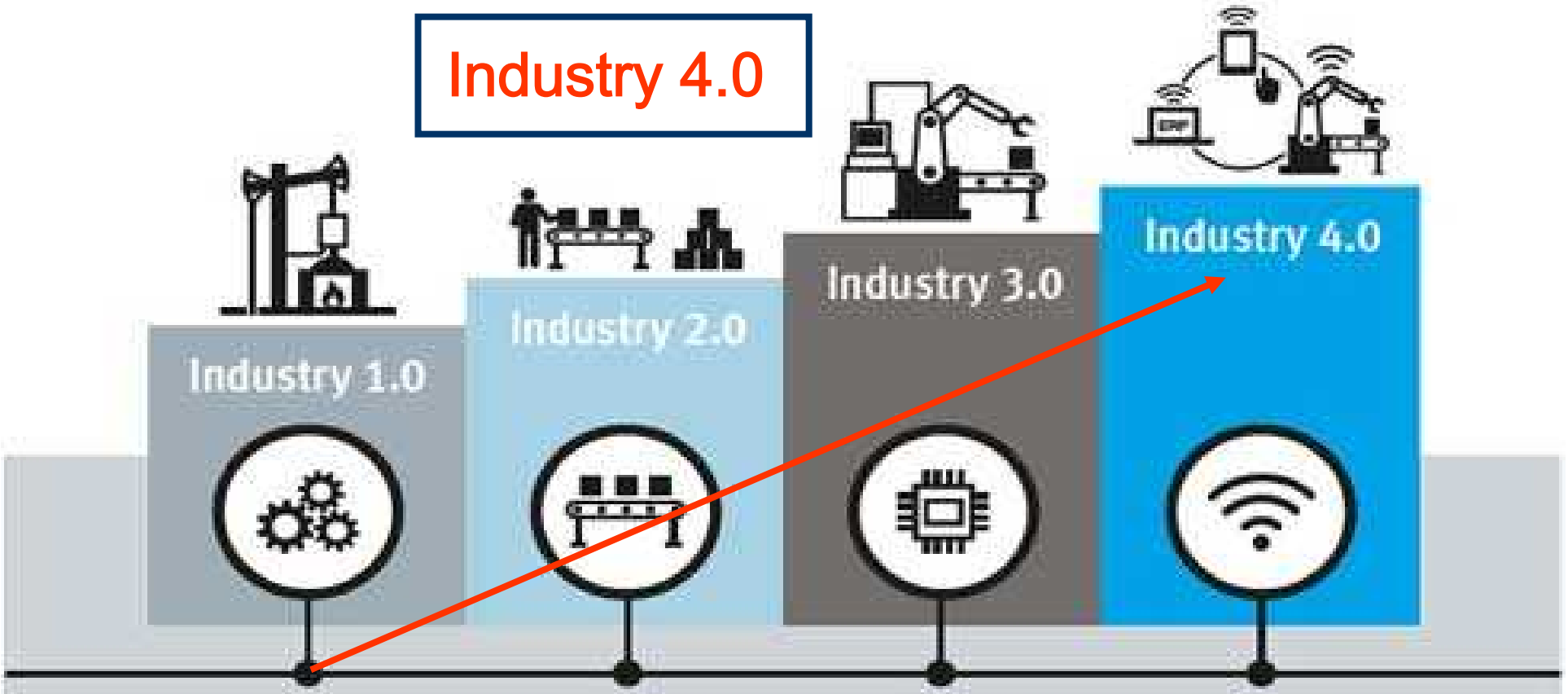
Industry 4.0

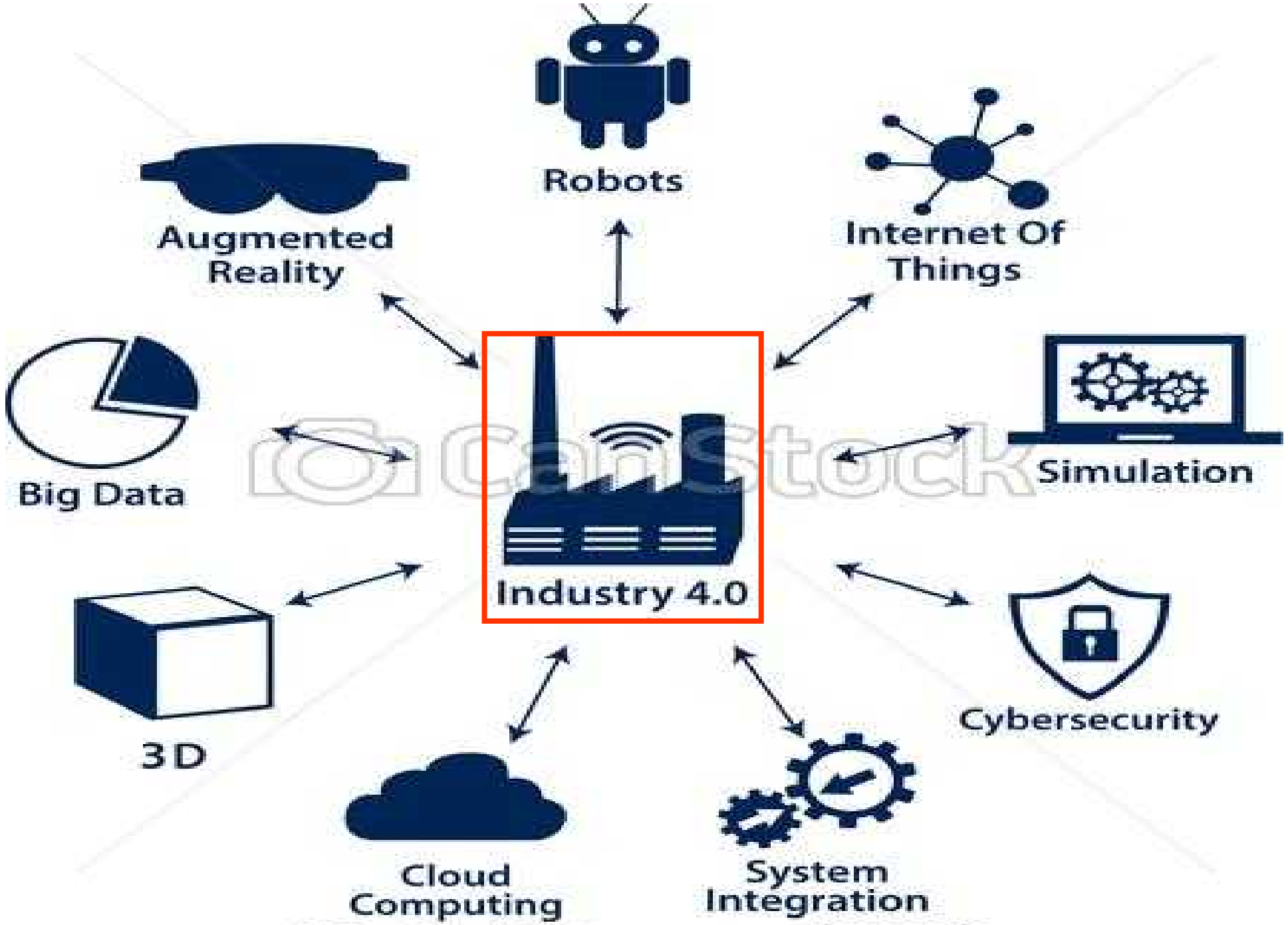


The **first industrial revolution** mechanised production using water and steam.

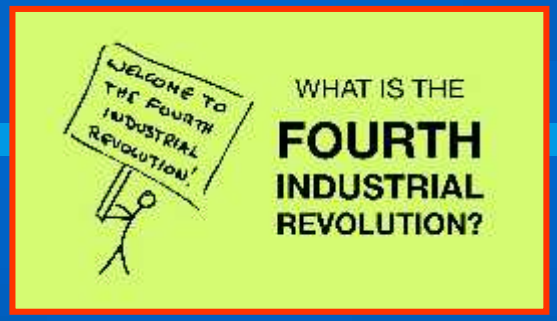
The **second industrial revolution** introduced mass production with the help of electrical power.

The **third industrial revolution** was the digital revolution with the use of electronics and IT to automate production.

In the **fourth industrial revolution** cyber-physical systems will communicate with one another using the Internet of Things.


Robots
Augmented Reality
Internet Of Things
Big Data
Simulation
Industry 4.0
3D
Cybersecurity
Cloud Computing
System Integration

Industry 4.00



- Artificial Intelligence (AI)
- Internet of Things(IoT)
- 3- D Printing
- Blockchain Technology
- Others

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The main component in the Industry 4.0 is Artificial Intelligence

or better known as A I

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"AI is a new digital frontier that will have a profound impact on the world"

……WIPO Director General Francis Gurry

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Basic AI Notions

- One common way of defining **Artificial Intelligence** is as

- **“The study of how to make computers do things at which, at the moment, people are better ”.**

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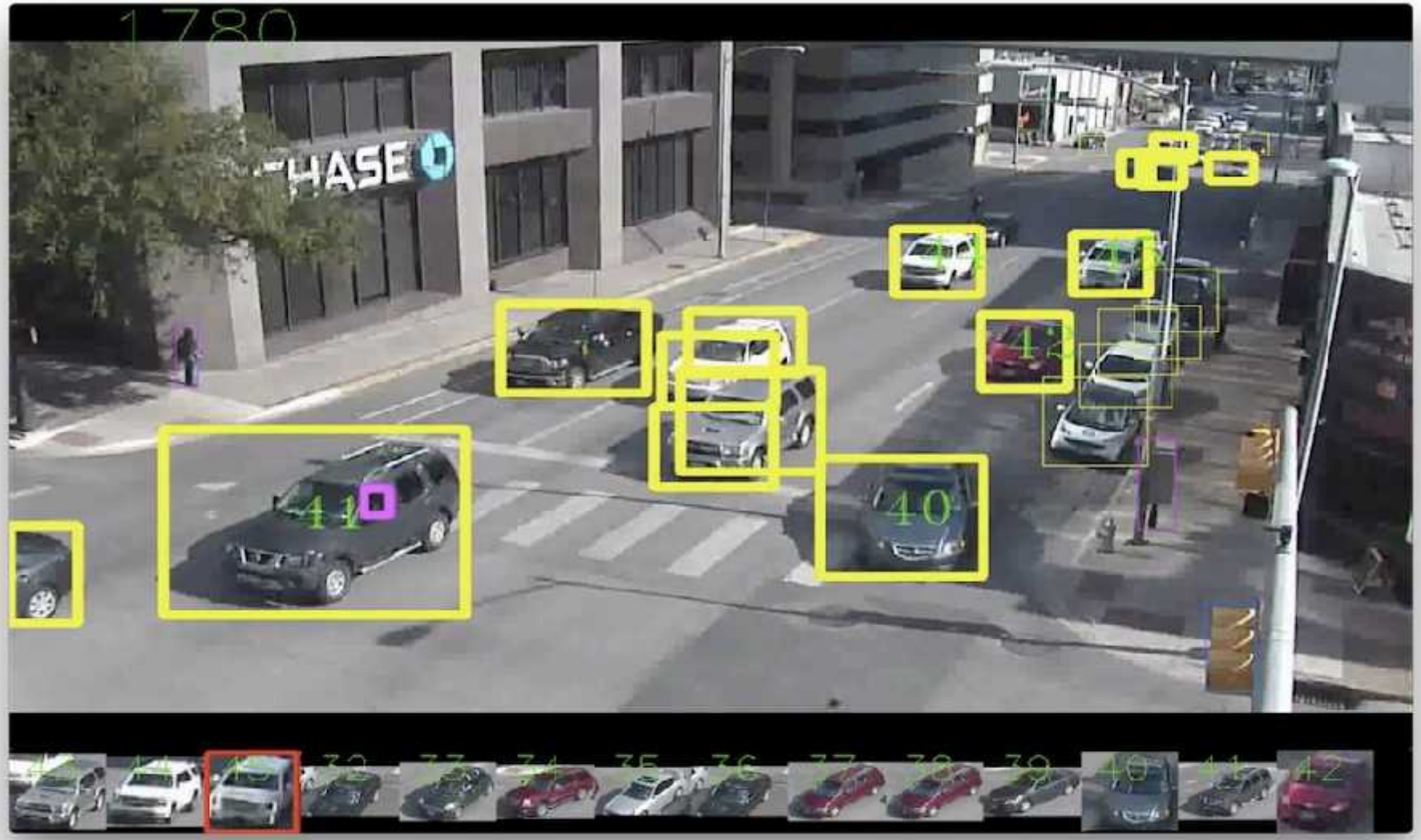
AI- Vacuum cleaner

AI- Traffic lights



Industry 4.00

"The next logical step in the technological revolution connecting people anytime, anywhere is to connect inanimate objects. This is the vision underlying the **Internet of things: anytime, anywhere, by anyone and anything**" – ITU

Industry 4.00
The Internet of Things

- Future growth in internet will be driven by machines connecting machines and rather than machines connecting to people.

- IoT is a combination of hardware and software that monitors & communicates data – either for analysis or action.

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Industry 4.00

3 D Printing

3D printing is a process of taking a digital 3D model and turning that digital file into a physical object.

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Industry 4.00
3 D Printing

Applications

Industrial uses

Rapid Prototyping

Rapid Manufacturing

Mass Customization

Mass Production

Domestic and hobbyist uses

Clothing

3D Bio-printing

3D Printing For Implant And Medical Device

3D Printing Services

Industry 4.00
Blockchain Technology

- Heralded by some as the future of financial transactions
- It’s a way of of creating a shared database which can record and track transactions and assets.

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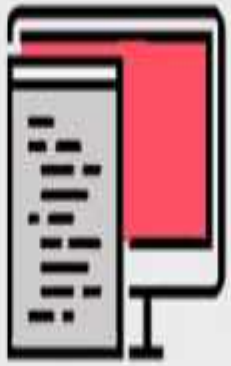
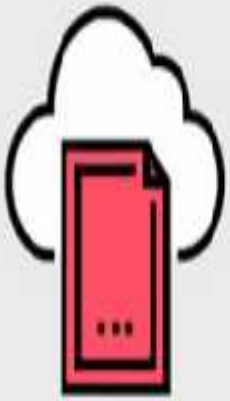
WHAT IS BLOCKCHAIN TECHNOLOGY?

A digital ledger that keeps a record of all transactions taking place on a peer-to-peer network



All information transferred via blockchain is encrypted and every occurrence recorded, meaning it cannot be altered

It is decentralised, so there's no need for any central, certifying authority



It can be used for much more than the transfer of currency; contracts, records and other kinds of data can be shared

Encrypted information can be shared across multiple providers without risk of a privacy breach

Source: *IoT World News*

IR 4.00 & IP

Some Issues . . .

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WHOSE IP IS IT ANYWAY?

- The Copyright To The Pen Or The Writer ?
- In AI- The User Uses No Creativity
- Copyright To AI Or
- The Programmer Or

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The moot point

- **Can an IP like copyright be granted to a non-human entity ?**

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A recent conference of USPTO posed the following issues:

- How is AI being used to enforce IP rights, protect inventions, and create new business models?
- How will AI alter the management and organization of research, innovation, and commercialization?
- What are the copyright implications when AI is used to create new works or when copyrighted works are used to “train” artificial intelligence systems?
- How will AI affect trademark protection and branding?

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AI-PATENTS

- **Under U.S. patent law, an "inventor" is defined as the individual who invented or discovered the subject matter of the invention. However, the U.S. *Patent Act* does not define "individual".**
- **The USPTO's *Manual of Patent Examining Procedure* adds that an inventor is the individual who conceives the invention and reduces it to practice.**
- **Thus, a non-human entity must overcome two thresholds to be granted a U.S. patent: (1) the ability to perform the mental act of conception and reduction to practice, and (2) such entity must be an "individual".**

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AI & IP : Some indicative cases

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THE NEXT REMBRANDT

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IP for AI

- **The Next Rembrandt is a computer-generated 3-D–printed painting developed by a facial-recognition algorithm that scanned data from 346 known paintings by the Dutch painter in a process lasting 18 months.**

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The Next Rembrandt

- The portrait consists of 148 million pixels and is based on 168,263 fragments from Rembrandt's works stored in a purpose-built database.

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HUMAN AS AUTHOR-AUSSIE CASE

- **Australian Case** (***Acohs Pty Ltd*** **v** ***Ucorp Pty Ltd***), a court declared that a work generated with the intervention of a computer could not be protected by copyright because it was **not produced by a human.**

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HUMAN AS AUTHOR- US

- In the **United States**, for example, the **Copyright office** has declared that it will register an original work of authorship provided that the **work was created by a human being**
- This stance flows from case law (e.g. ***Feist Publications*** v ***Rural Telephone Service Company, Inc. 499 U.S. 340 (1991)***) which specifies that copyright law only protects **the fruits of Intellectual labour that are founded in the creative powers of the mind**

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The monkey - selfie copyright dispute

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To conclude . . .

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IR 4.00 & IP

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Intellectual Property and Economy 4.0

- Intellectual property is an important tool for economy development.
- IP system has enabled the grant of property-like rights over new **knowledge and creative expression** of mankind, which has made it possible to harness the **commercial value** of o utputs of human **inventiveness and creativity**.
- IP system plays a significant role in helping business to gain and retain its **innovation-based advantage**. The **competitive edge** that an entrepreneurial business may gain is lik ely to be **longer lasting**.
- IP protection encourages creative intellectual endeavor in the public interest.
- IP system promotes fair competition in the market.
- Strong IP protection protects interest of consumers.

Three factors driving the use of AI in the administration of IP systems.

- The first is volume
  - In 2017, the year for which data are available, around 3.1 million patent applications, some 7 million trademark applications, and 963,000 industrial design applications (covering 1.2 million designs) were filed worldwide.
- Quality and cost are also important drivers

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Volume is a principal driver of the use of AI in IP administration

- For example, in the area of **trademarks and designs**…
- the judgment, on the registrability of a trademark or a design – the benchmarks of which are **distinctiveness for a trademark and originality for a design** –
- is made by reference to **pre-existing marks and designs.**

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Use of AI in IP administration : The Volume factor

- It is simply not possible for a human to sift through the millions of trademark and design applications received each year to determine whether a given trademark or design qualifies for registration

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Use of AI in IP administration
The WIPO initiative

- **WIPO has developed an AI-empowered image search tool for trademarks.**
- **Embedded in the WIPO Global Brand Database, the tool is a world first.**
- **It delivers results in a second and is highly accurate.**

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AI as a tool in IP transactions-WIPO

- **Automatic Patent Classification**
- **IPCCAT- neural helps patent filers and examiners in IPOs to automatically categorize patent applications into technical units according to their International Patent Classification(IPC)**
  - **class,**
  - **subclass,**
  - **main group or**
  - **sub-group.**

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AI as a tool in IP transactions-WIPO

- **WIPO Translate** is a world-leading instant translation tool, specially designed for patent documents.
- It's available through the **PATENT Scope database** and can also be integrated within IPO systems upon request

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Blockchain technology : Use in IP domain.

- One of the most potential application is as a registry of IP Rights.
- It would catalogue and store original works.
- May give clarity to copyright authors, owners and users.

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Concluding . . .

- In the Digital era the real value may come from **data . . .**
- Acquiring the sources of data and the means to quickly & accurately manipulate them for competitive advantage is likely to be the new **Intellectual Property frontline** in IR 4.00

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Concluding . . .

"Still these are early days. There is lot of interest among IP offices which see **Industry 4.00** and **AI** as opportunity to deal with volume, quality and cost. This will be major focus among the IP offices and the business in the coming months & years ….. "

Francis Gurry ,
Director General, WIPO

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THANK YOU….

….Padmin Buch

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