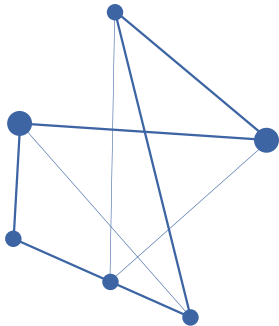




Our Industry: Technology-driven or driven by technology



**Your 1st choice
of global FSP partner**

**Author:
Faheez Rangunwala**

**GCE Position:
Senior Statistical Programmer**



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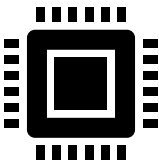
Overview



Our history with Technology



Current Adoption and Implementation



Our future with Technology



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| Our history with Technology

```
graph LR; A[Trial Processes] --> B[Data Management]; B --> C[Biostatistics and Programming];
```

**Trial
Processes**

**Data
Management**

**Biostatistics and
Programming**

- Regulated Industry
- Reliable Technology
- Time
- Budget and cost implications





The Internet of Things



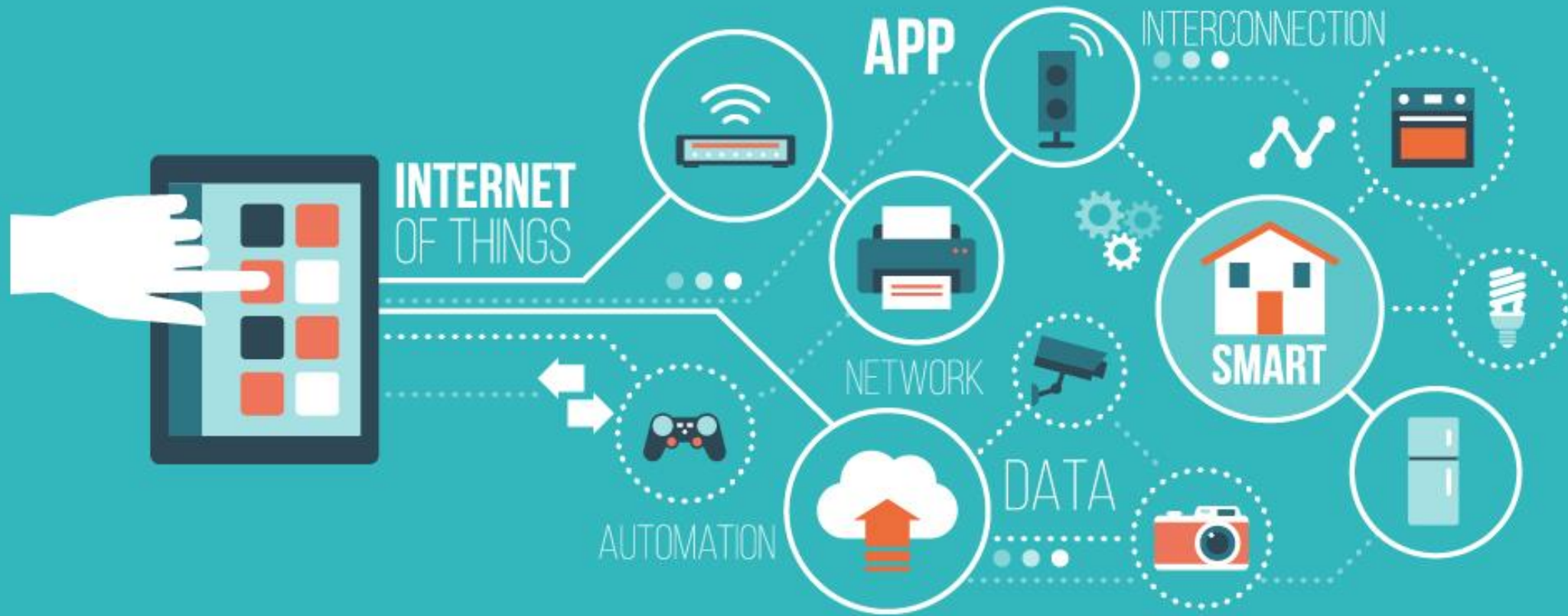
Augmented Analytics



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| The Internet of Things (IoT)





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| Uses of IoT

Industry specific uses



Adoption in other industries

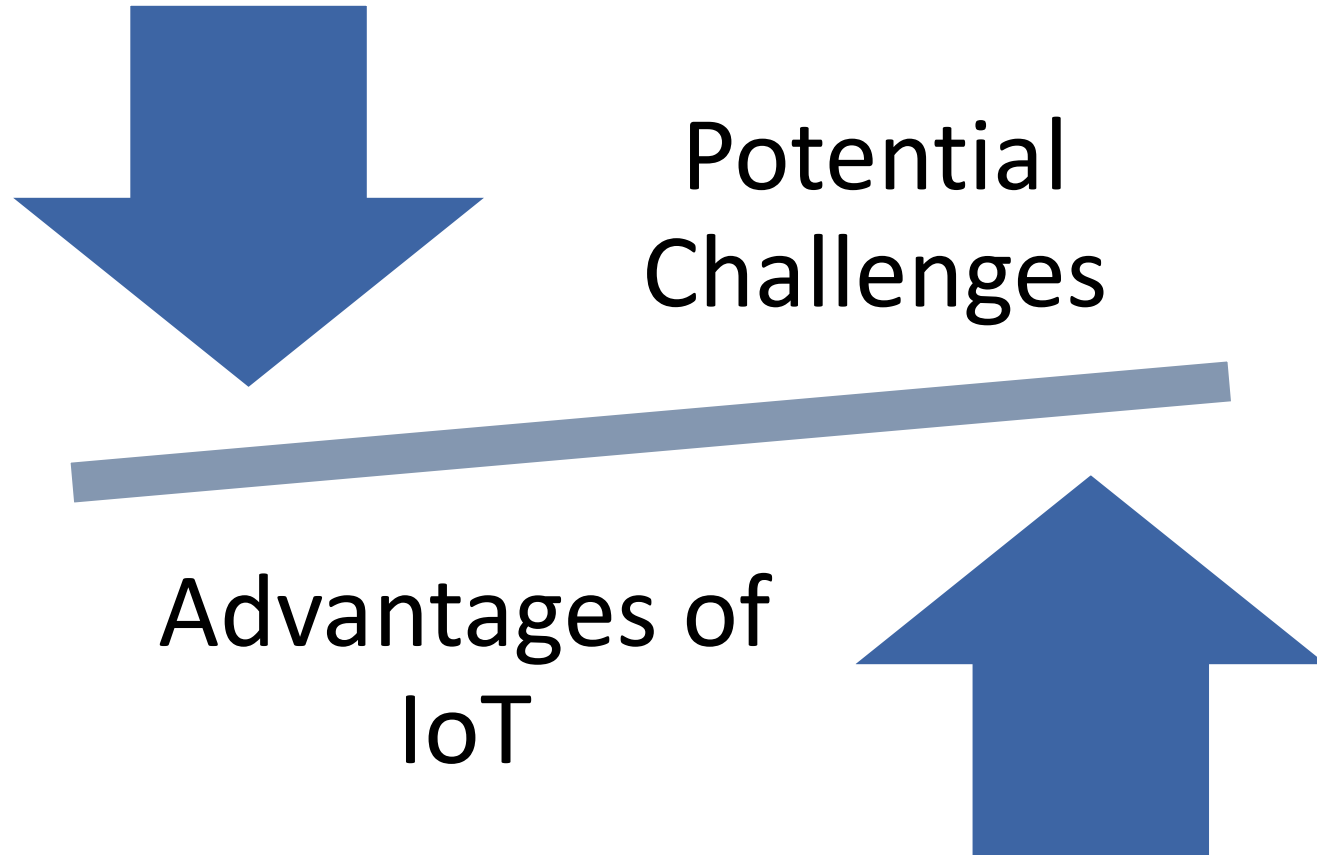




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| IoT – Potential Challenges and Advantages



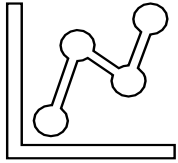


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Augmented Analytics (AA)





Industry specific uses



Adoption in other industries

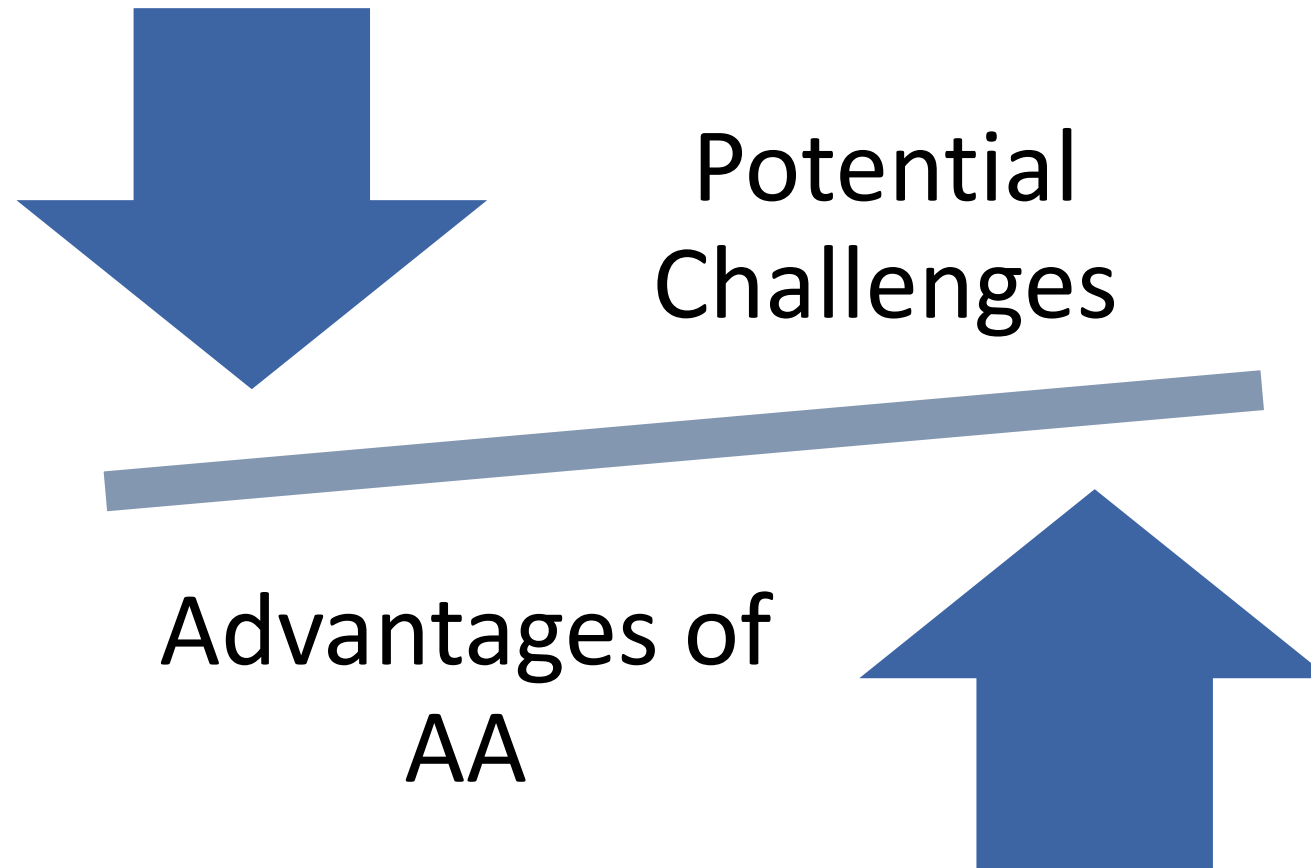


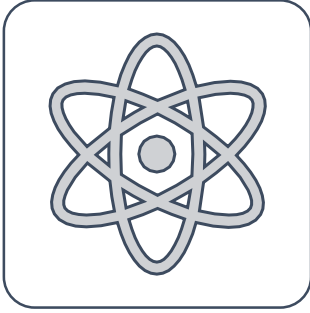


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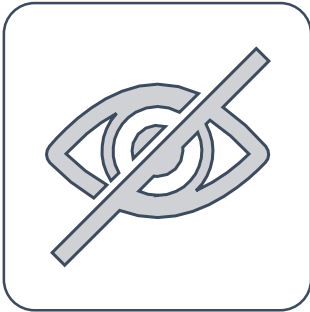
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| AA – Potential Challenges and Advantages





Quantum Computing



Digital Ethics and Privacy

Quantum Computing

Bit
(Classical Computing)

0



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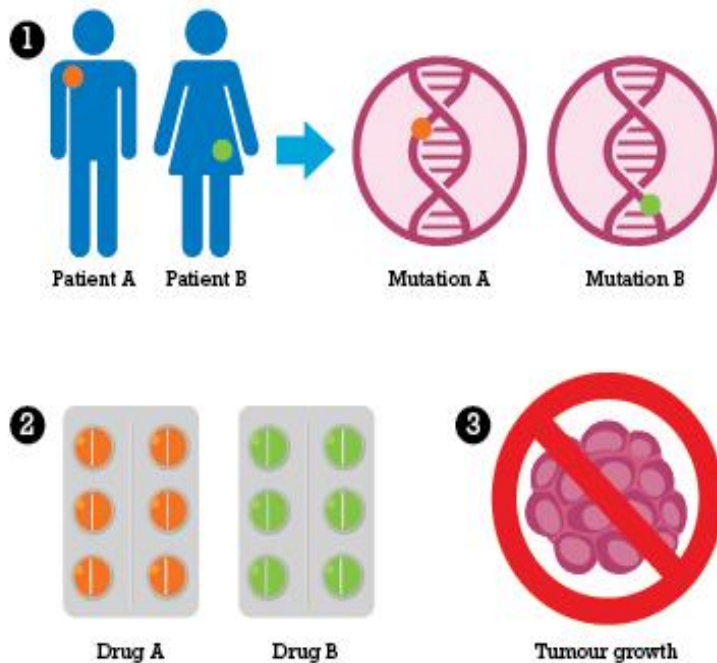
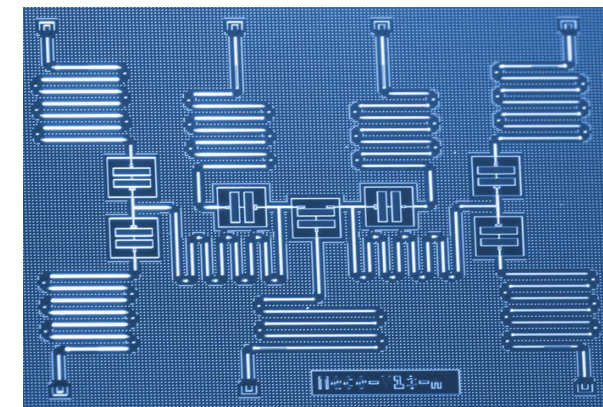
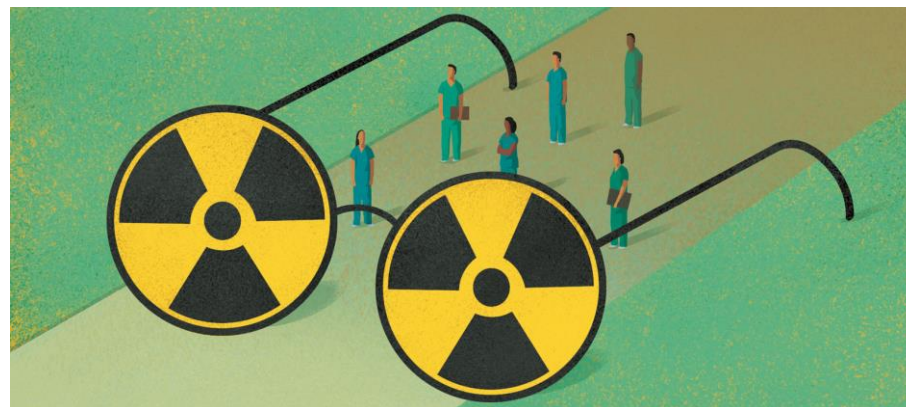
Qubit
(Quantum Computing)

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1

QC - Possible Industry specific uses



Personalized medicine:

1. The genetic changes in a person's cancer are discovered.
2. Drugs that target these genetic changes are identified.
3. The patient is treated and their response to therapy is monitored.

A team of researchers at IBM have successfully used their quantum computer, IBM Q, to precisely simulate the molecular structure of beryllium hydride (BeH_2). It's the most complex molecule ever given the full quantum simulation treatment.



- **Faster drug discovery and production**
- **Reduced cost of the drug development process**
- **More precise and accurate drugs**
- **Fewer side effects** associated with treatments
- **Potential cures** for currently incurable diseases

| Readiness and availability of QC



Suggested key dates:

- 2022 – Research
- 2023 or 2025 - Implement

| Prepare for the Quantum Leap?

- **Research and learn**
- **Find all the areas in our line of business that could benefit**
- **Establish relationships with technology companies that manufacture Quantum computers**
- **Develop our talent pool**

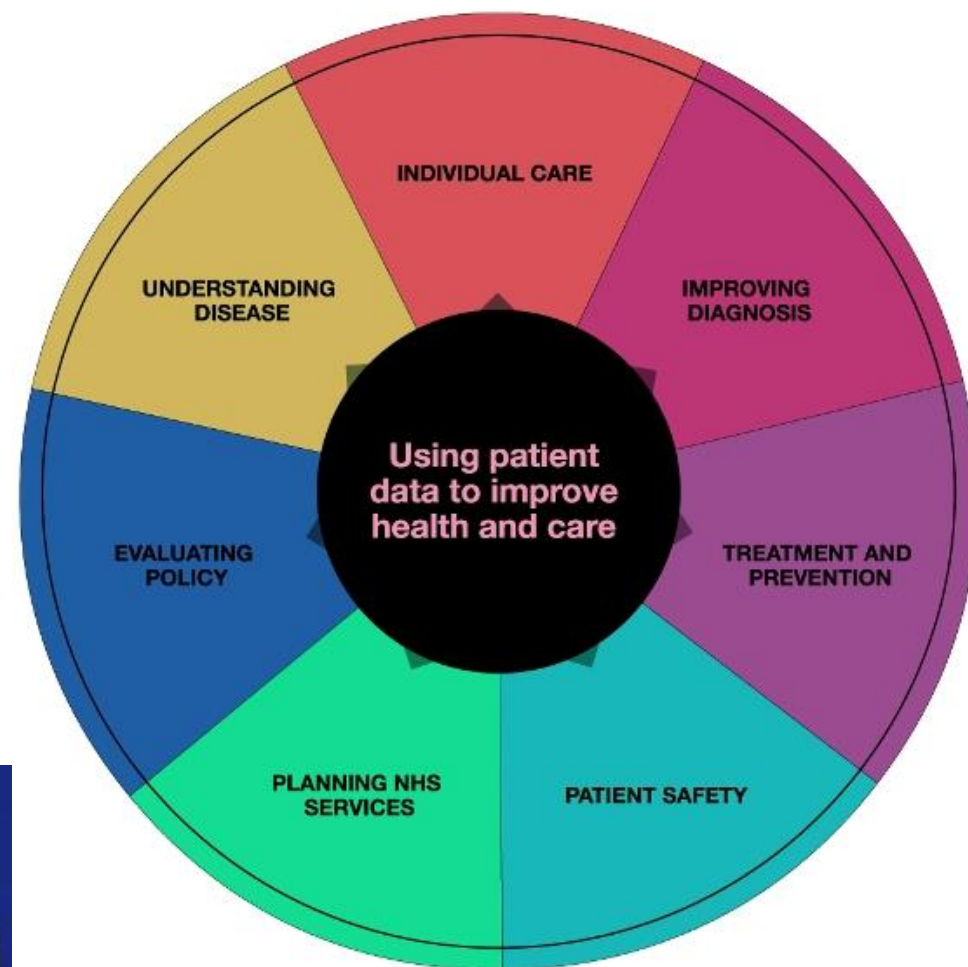


Digital ethics and privacy in Pharma

Humanism is a philosophy of joyous service for the greater good of all humanity, of application of new ideas of scientific progress for the benefit of all.

Linus Pauling

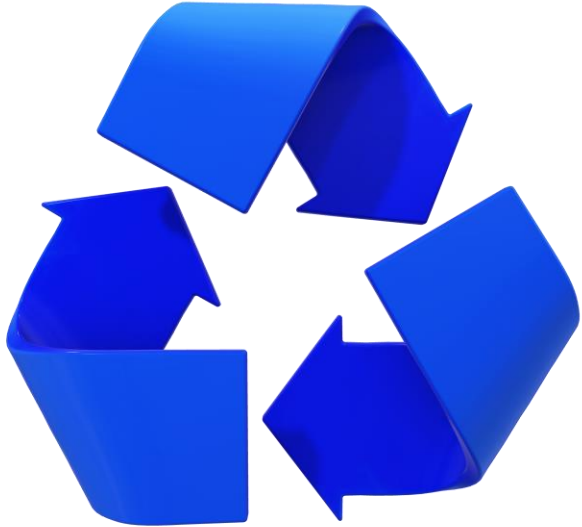
quote fancy



EMA Policy
0070

| Digital ethics and privacy in other industries



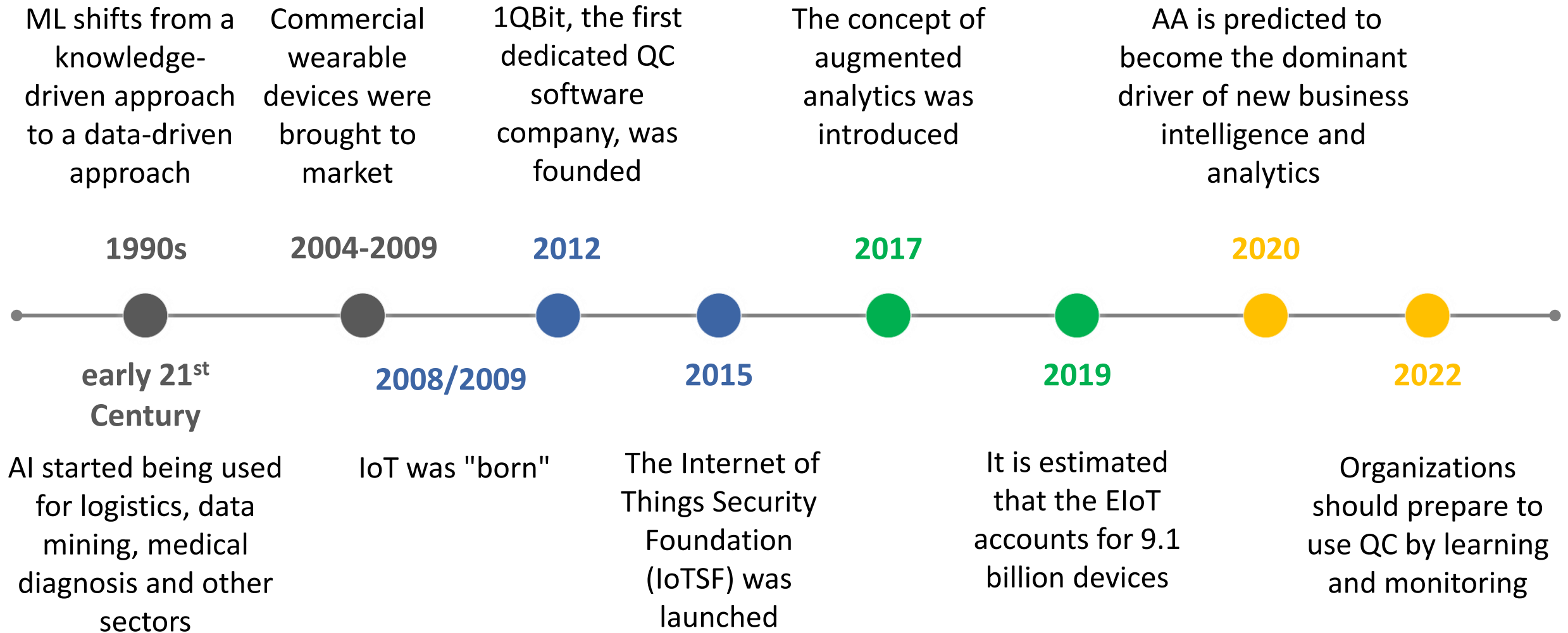




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Timeline





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How are we doing?





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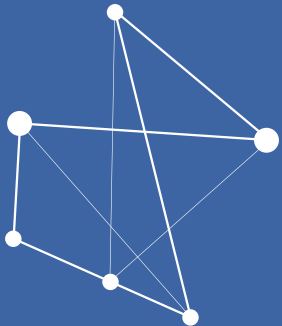
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| Conclusion





Thank You for watching



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| Any Questions?

