INTRACOM TELECOM

Technology Shaping the Future

"The second telecom Age"
How NFV and AI Facilitate 5G

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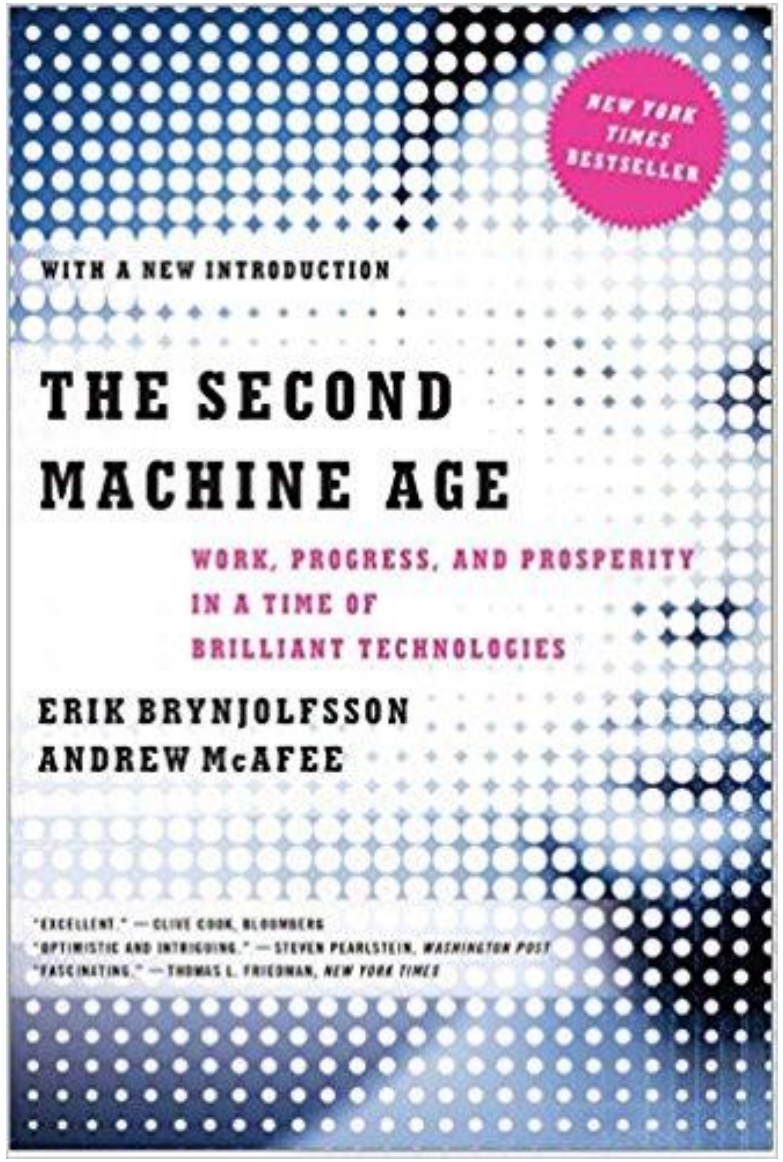
Source is a great book!



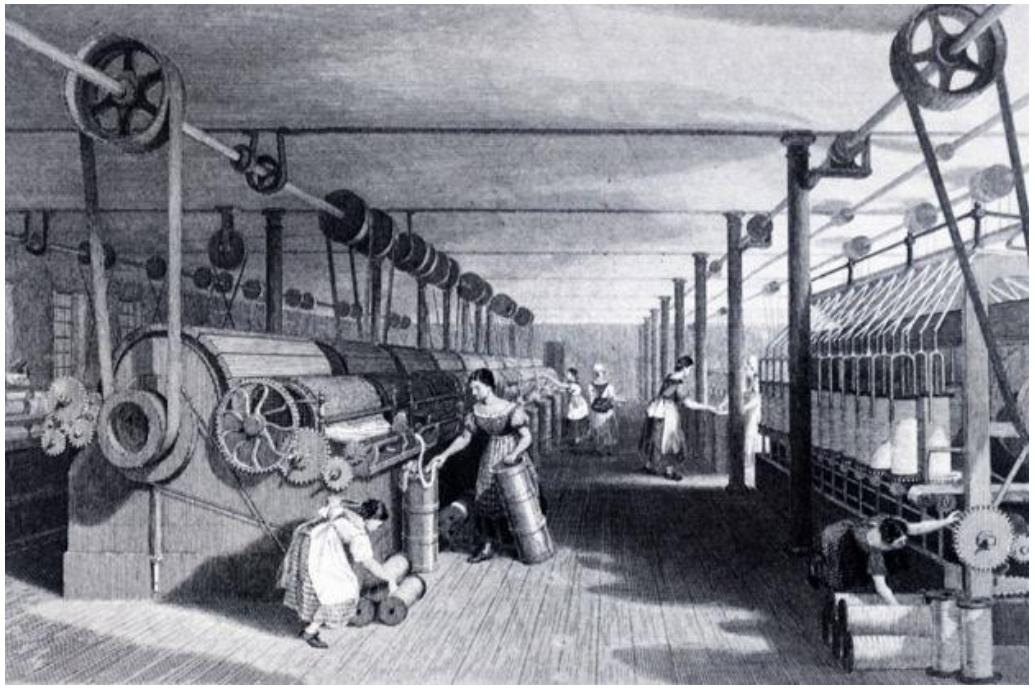
What is the Second Machine Age

Second Machine Age key points:

- During the Industrial Revolution, physical labor was replaced by machines
- Now automation of cognitive tasks replaced by software-driven machines
  - Cloud and AI convergence
- There is always a delay before we see productivity gains due to sub-optimal use of the technologies at hand:
  - Electricity and the electric motor in the 19th century -> 50 years before it increased productivity

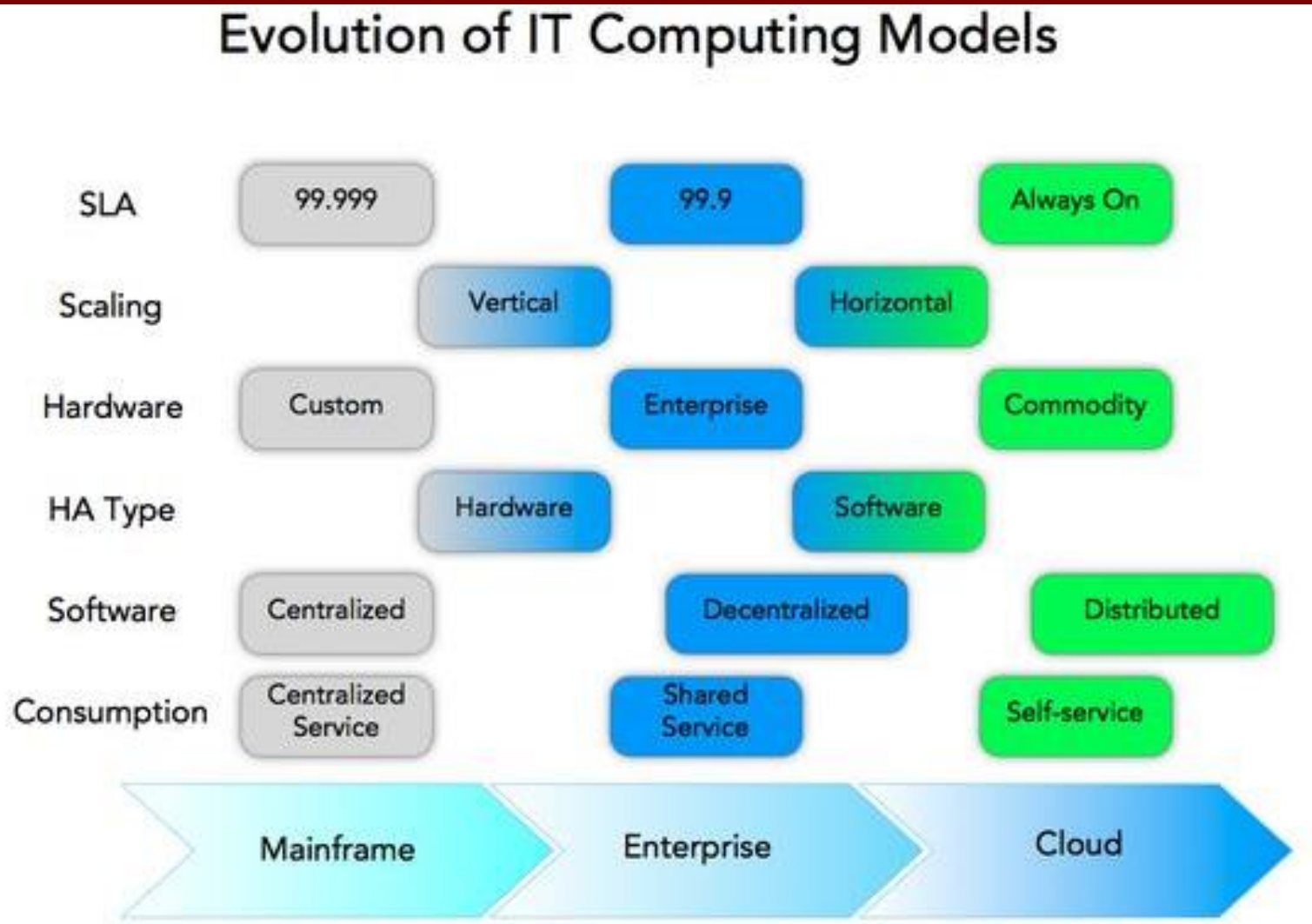
What is the Second Machine Age

Industry did not immediately realize that with electricity you can distribute power everywhere and decentralize the machinery!



~ 50 Years

It took 60 years to learn how to use virtualization



1960's
IBM CP-40

1990s
VMWare

2020s
AWS,GCP, Azure

What is the analogy?

- **Telecom Industry**:
  - IT technologies **penetrate** the telecom sector since the 1990's
    - MSC -> IMS
    - SS7 -> IP
  - There is a **gap** between capabilities of IT technologies and learn how to use them in the telecom sector

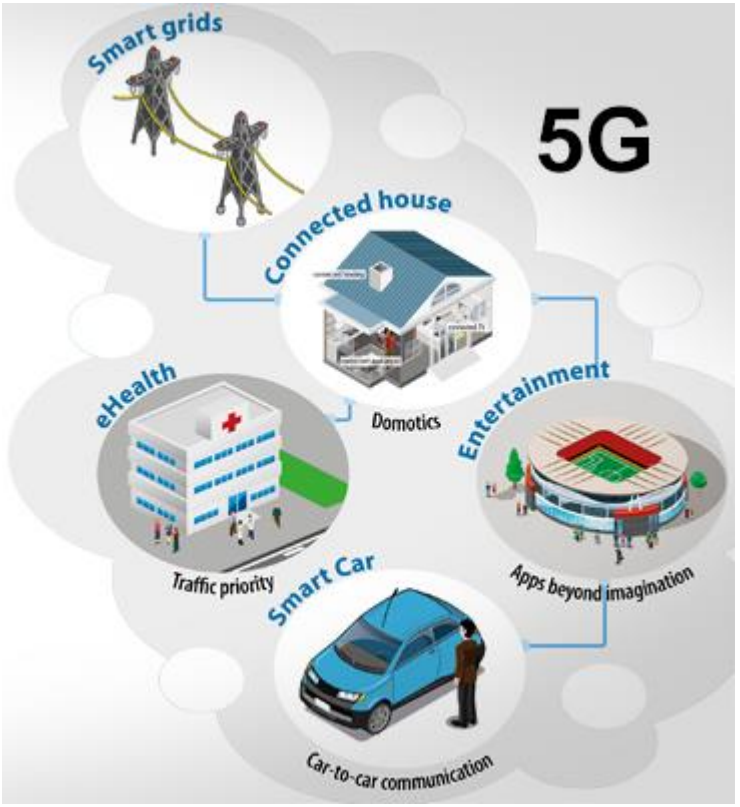
- Let's call the closing of that gap "**Digital Singularity**":
    - **Fast time to market** – any service imaginable or unimaginable can be easily delivered over the network
    - **Adaptable** to individual subscriber or device needs
    - **Self healing**

35 Years to 5G “Singularity”

1980’s 1990s 2000s 2010s 2020s

35 Years to 5G “Singularity”

- 5G will reach its **full potential** only when we learn how to use the following technologies:
  - Virtualization
  - Big Data & Artificial Intelligence



What is NFV?

“Cloud Computing for Carrier Grade Service Delivery”

- Cloud Computing only guarantees availability of compute resources
- NFV:
  - Monitors KPIs of all network services
  - Dynamically adjusts compute resources available to each service in order to maintain SLAs

- Benefits of NFV
  - **HW Flexibility** – COTS deployment, easier and faster to upgrade
  - **Faster Service Life Cycle** – Network Functions can be created and removed on the fly
  - **Scalability & Elasticity** – Compute resources are dynamically provided to each Network Function
  - **Rapid Development & Validation** – New functions can be developed and tested rapidly
  - **Amorphous Service Offering** – Adapt to market needs e.g. “Follow the Sun” paradigm
  - **Operational Agility** – Possible to automate operations via Orchestration

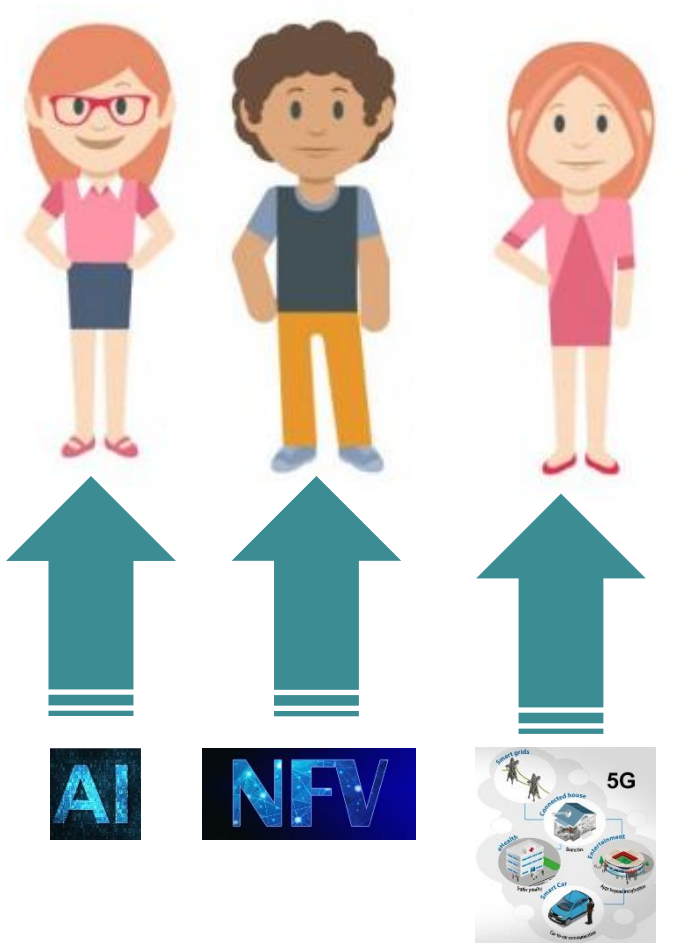
What is Artificial Intelligence?

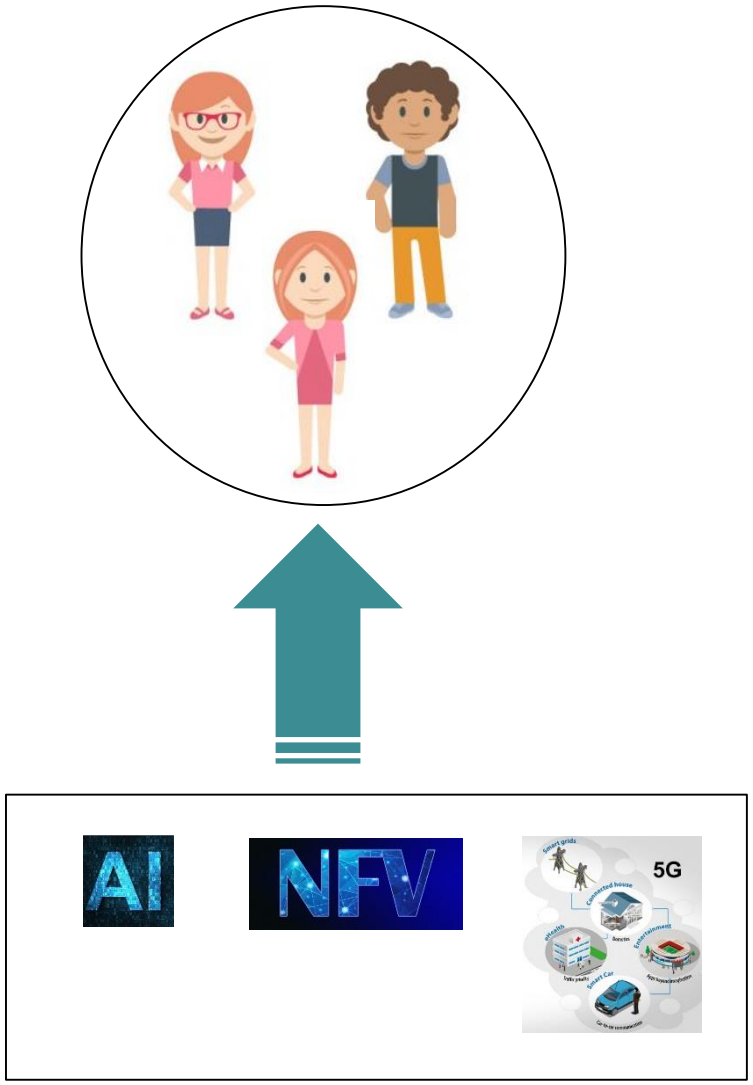
“No one agrees!”

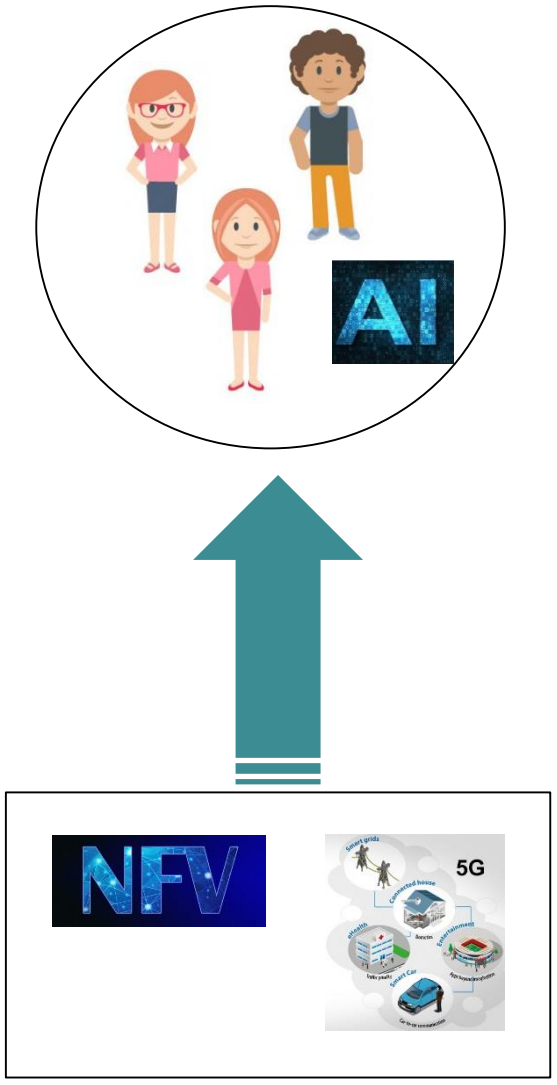
- Big Data and AI Tools:
  - Big Data Visualizations and Ad-Hoc Reports -> Answer **Descriptive** and **Exploratory** questions
  - Statistical Analysis -> Answer **Inferential**, **Causal**, **Mechanistic** questions
  - Machine Learning -> Answer **Predictive** questions

- Benefits of AI:
  - **Product Marketing Innovation** -> Discover what subscribers like, reduce churn
  - **Cost Optimization** -> From better network planning to fairer tariffs
  - **Operations Optimization** -> Root Cause analysis, ad hoc log queries, discover hidden correlations
  - **Quality of Experience** -> Discover what is the perceived QoE, pro-actively alert and schedule maintenance activities
  - etc. etc. etc.

3 Steps to 5G “Singularity”:

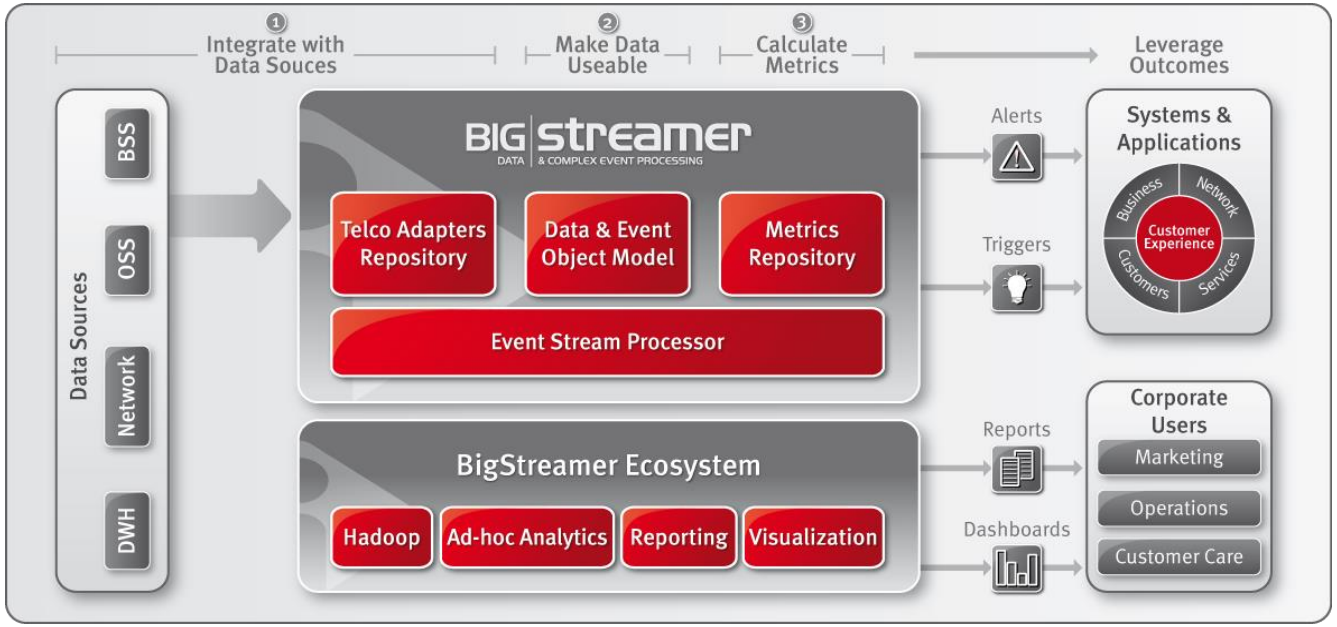






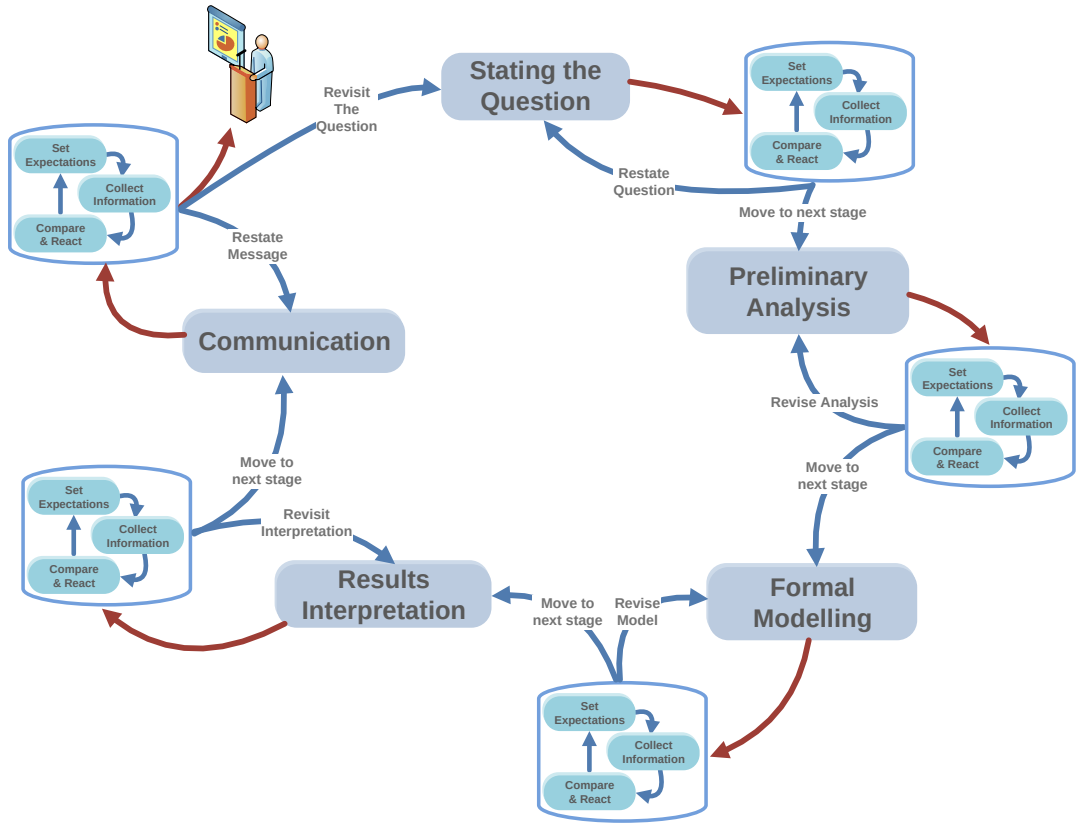
OK so what is Intracom Telecom doing?

Collect and Process Data from all Telco Sources in Real Time



New Data Science Methodology

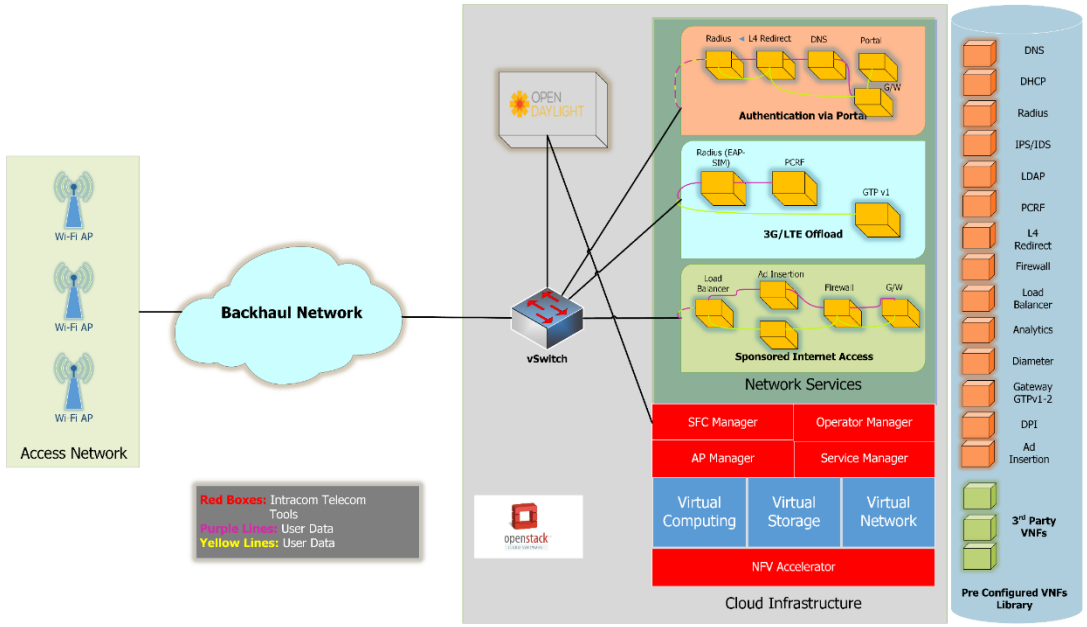
Reduce the current ratio of failed Data Science Projects



OK so what is Intracom Telecom doing?

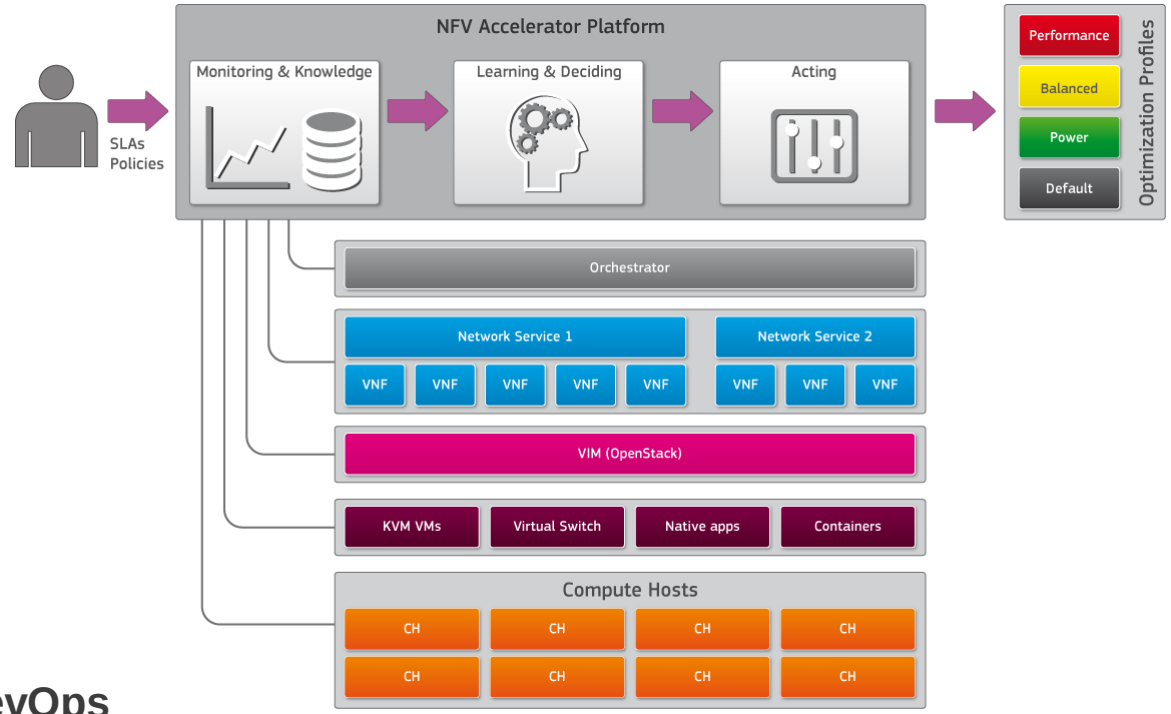
Free NFV Infrastructure!

Virtualized WiFi Solution



NFV

Service Assurance Controller



NFV DevOps

thank you

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