THE DEATH OF FIBER:

Why Satellite is the most relevant technology

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Software Defined Networking (un)Terminology

- **SDN is** programmatic network configuration, with separation of control plane from data plane

- SDN was first primarily defined by the OpenFlow Spec, and the term SDN was, for a short time, synonymous with OpenFlow.

- SDN has expanded past the OpenFlow protocol and has been widely abused by marketing departments.

- Most recently, the term SDN has expanded to encompass SD-WAN.

A better definition...

SDN is better defined by core tenents, such as those OpenFlow was based on, rather than specific implementations or technologies.

Technologies are SDN if they follow these core philosophies:

- **Programmatically Configured**: Allow direct user interaction through software they can write themselves.
- **Decoupled Functionality**: Network policy/control plane is decoupled from moving network data.
- **Agile**: Allow and apply changes quickly.
- **Centrally Managed**: Policy is stored centrally and has a global view of the network that policy applies to.
- **Open Standards**: Vendor neutral standards that allow users to write once, use anywhere.

# Traditional Networking is Dead

Traditional networking is slow to provision, slow to change, and not programmatically accessible. For example: Capacity, ACLs, and who and where traffic is directly exchanged with aren't instantly adjustable with an API call.

SDN requires that everything about a network be instantly changeable via and API, so it can adjust to changing business rules and events in real time.

If we want to have the tomorrow being pitched today - self driving cars, customer tailored cancer treatments, and every innovation resulting from the sharing of information on a scale never before seen - the underlying infrastructure to move data must be dynamic and accommodate real world needs.

Why Traditional Networking Doesn't Work

Example: Novel cancer treatments and research
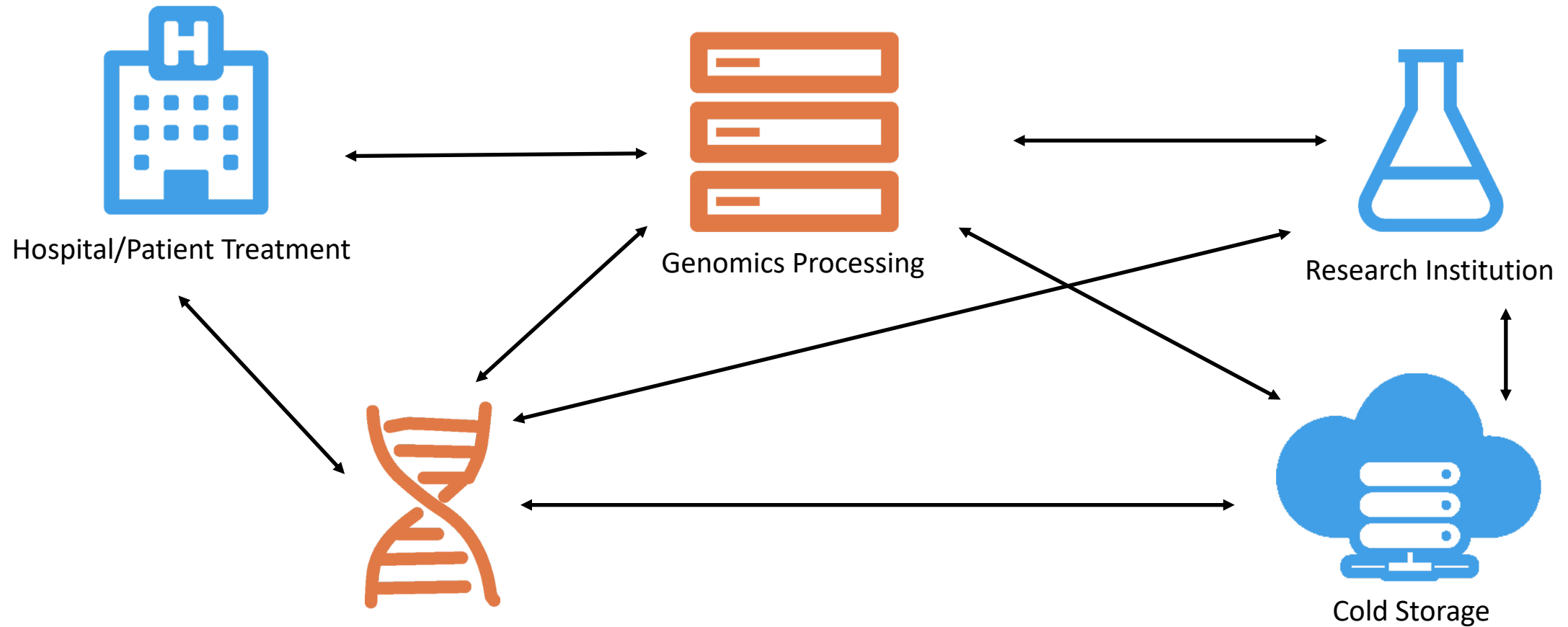
Now: Great things happening with SDN

- White box switches

- Yang

- Autonomic Networking Integrated Model and Approach
  https://datatracker.ietf.org/wg/anima/about/

- OpenConfig
  http://www.openconfig.net/

- Open Networking Models and APIs
  https://www.opennetworking.org/software-defined-standards/models-apis/

Next: How SDN will become even greater?

Intent Based Networking

- Remember the SDN core philosophy: decoupling of control plane and data plane? This allows for the development networking based on business intent.

Self Driving Networks

- Networks will heal, change, and grow based on user need without user instruction.

Next: How do we get there?

Stop working around the network.