OpenCloud: A Unified Service Framework

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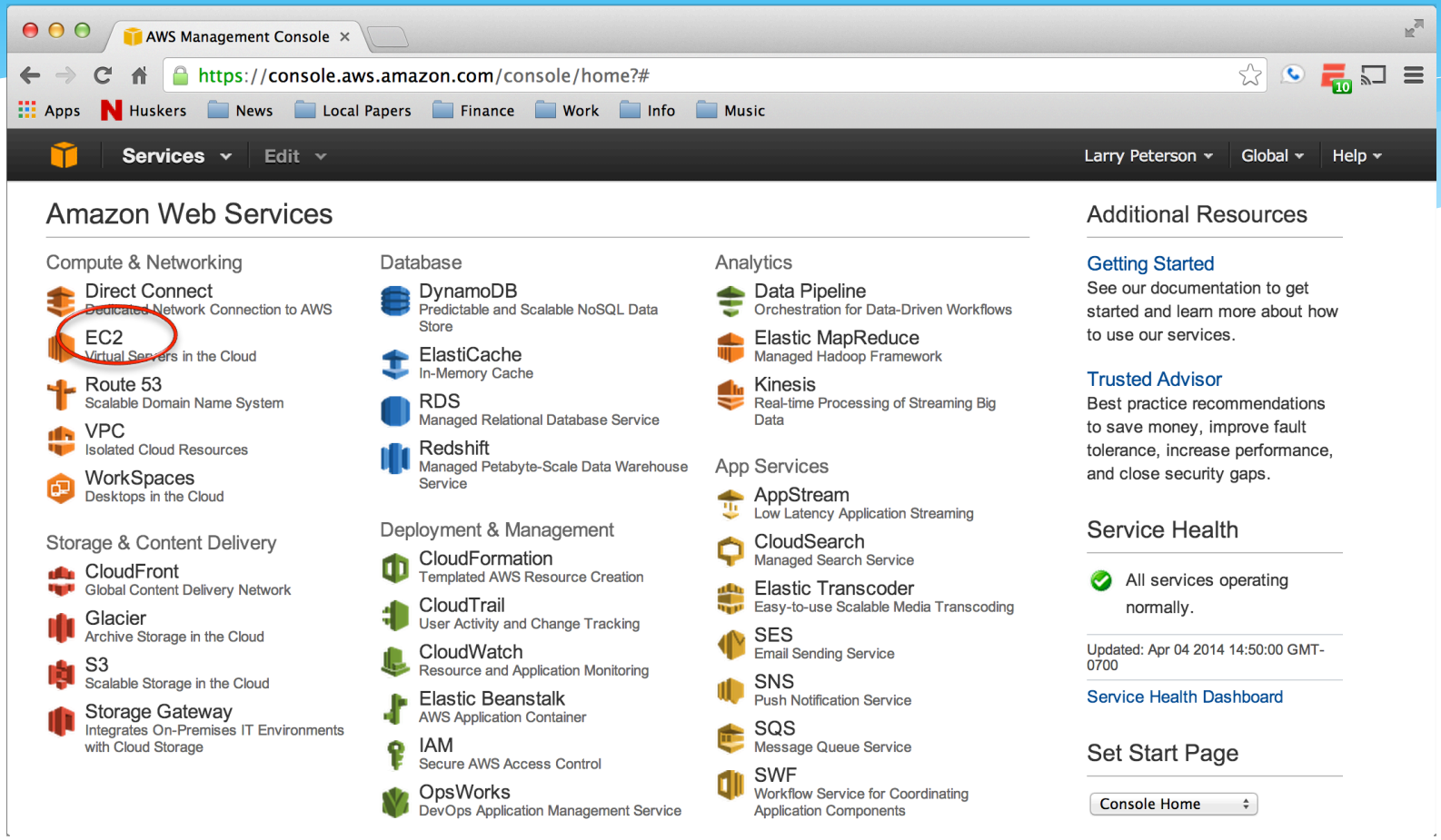
NSFCloud Workshop

The Cloud is about services

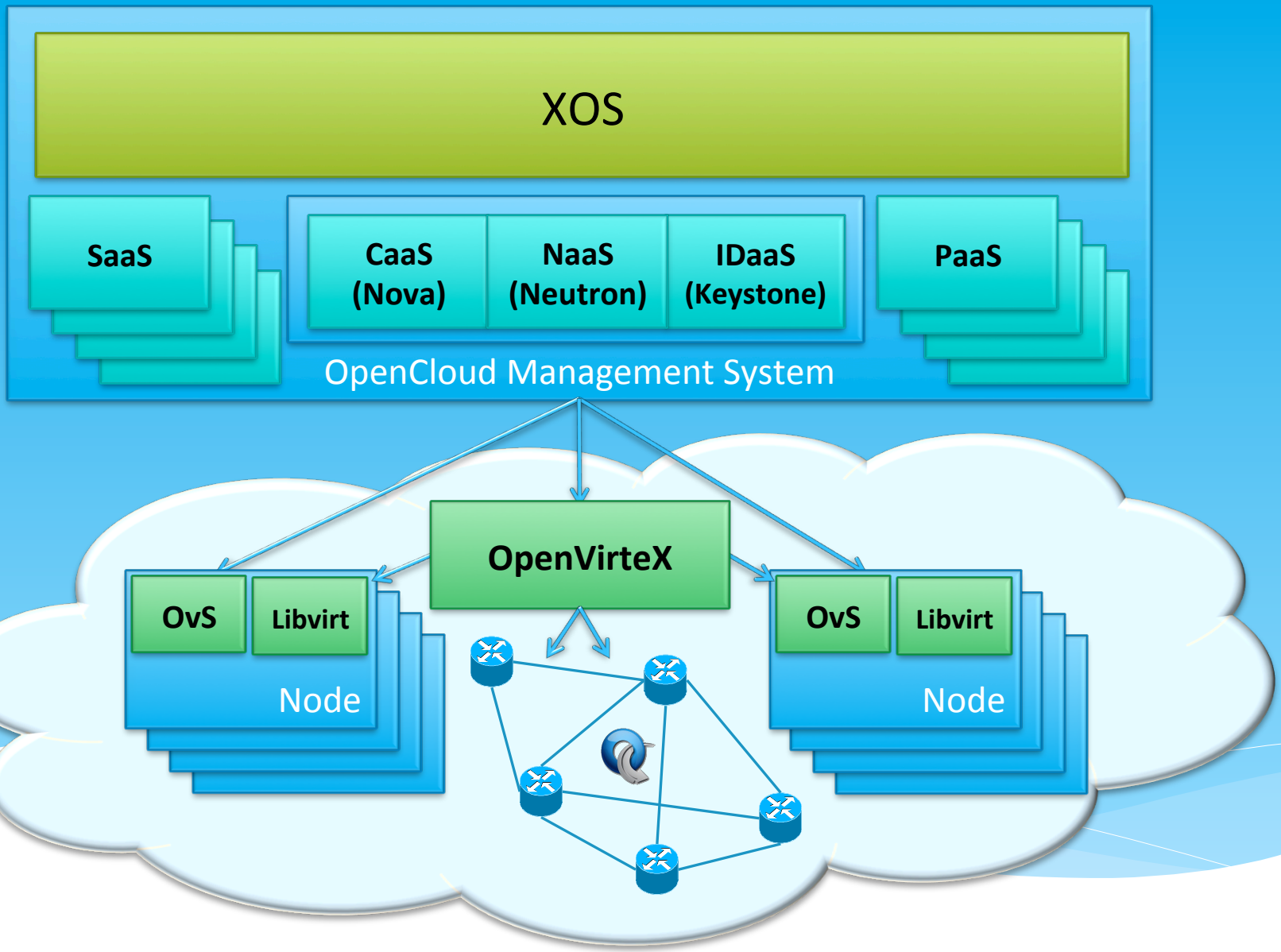


Can we create a similar ecosystem of research services?

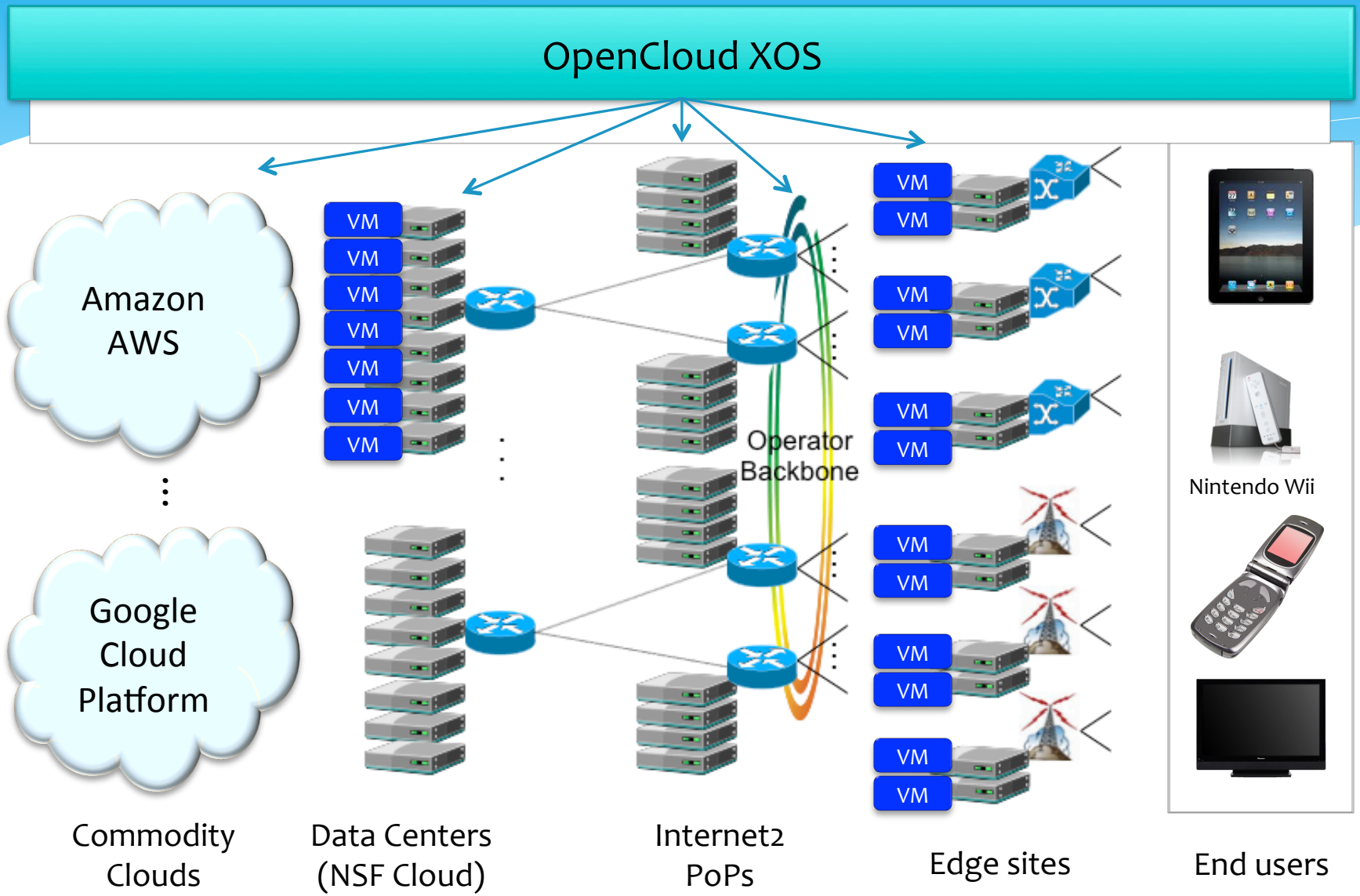
OpenCloud's goals

* Build and operate a "meta-Cloud"
  * Support *long-running services*
  * Integrate with commodity clouds (e.g., EC2), research clouds (NSF Cloud), testbeds (GENI, PlanetLab)
  * Spans data centers, network PoPs, edge sites
* With a unifying architecture
  * Designed around *composable services*
  * Key principle: XaaS - Everything as a Service
* Leveraging open-source software
  * XOS, OpenStack, OpenVirteX

Software architecture



The meta-cloud



Desired NSFCloud capabilities

* We want *long-term resources*
  * Clusters of bare metal servers at multiple sites
  * Programmable OF inter-cluster networks
  * Dependable BW between clusters
* We hope to *grow the clusters and BW* over time
  * Can start small (~10 servers per site)
  * Expand when we see growth in our user base, services

http://www.opencloud.us