FACILITY FOR LARGE-SCALE ADAPTIVE MEDIA EXPERIMENTATION

Visions for SW Infrastructures

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Observations about the Internet

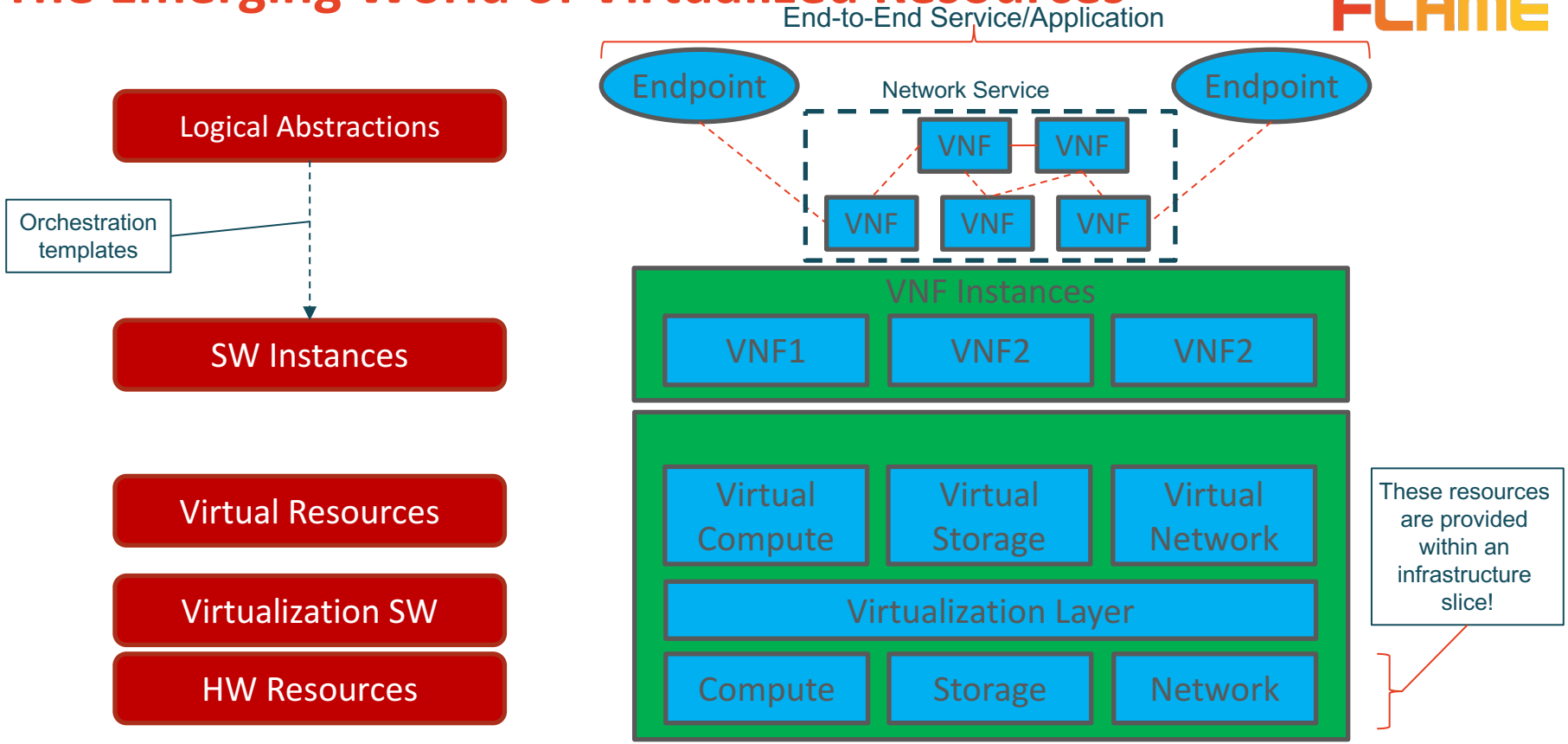
- Internet -> interconnecting **networks**, mainly belonging to organisations, ISPs, businesses, …
- WWW -> interconnecting **services**, mainly being provided by organisations, ISPs, businesses, …

Platforms

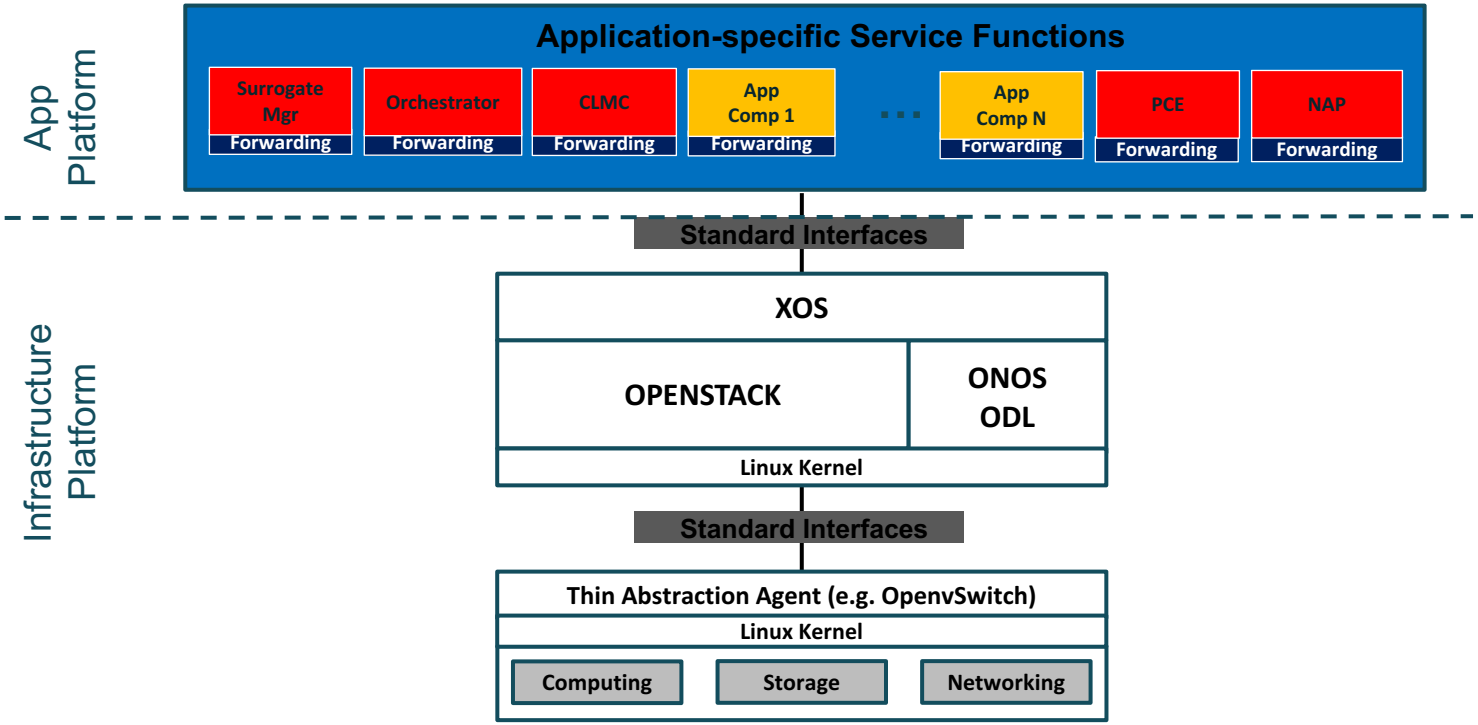
- Internet access via **mobile** has surpassed fixed usage in 2016
  - 95% of Chinese Internet users access via mobile devices
- With proliferation of smartphones, Internet access has become an experience of **installing** the right **application**!

Value Chains

The Emerging World of Virtualized Resources

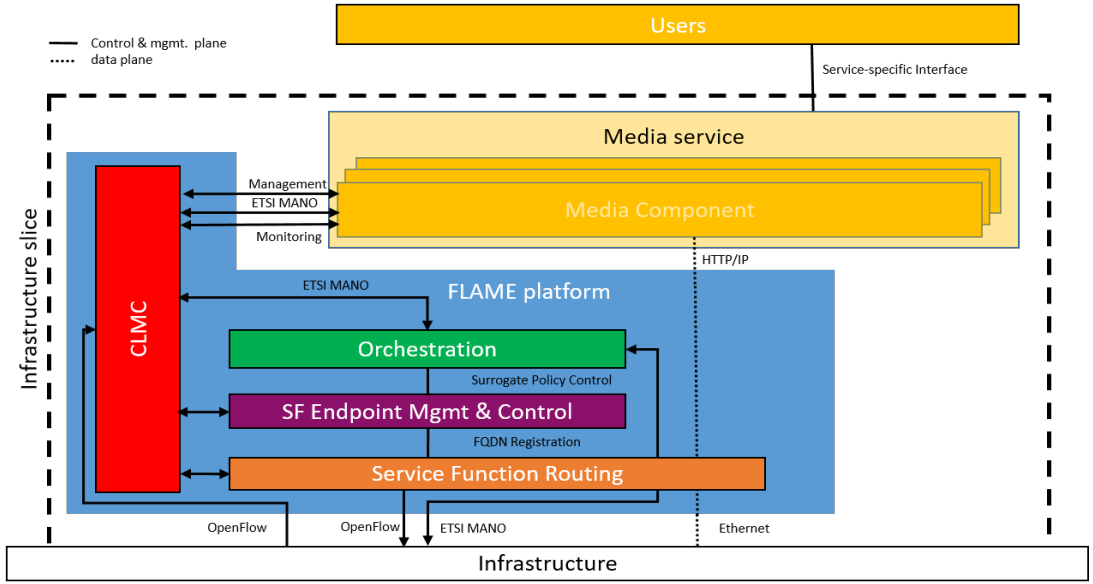


Emerging Platforms Drive the App View



The FLAME Service Delivery Platform in this World

- **A new dynamic content production and delivery platform**
  - layered modular architecture with cross layer optimisation, analytics and control
  - distributed computing models that combine media cloud with mobile edge
  - software-defined infrastructure (NFV, ICN, SDN) to support service endpoint management, routing and switching
  - VSN defines a network of media services utilising infrastructure
- **Supporting enhanced Quality of Experience**
  - personalised, interactive, mobile and localised media services



Technical Proposition

FAST, ADAPTIVE

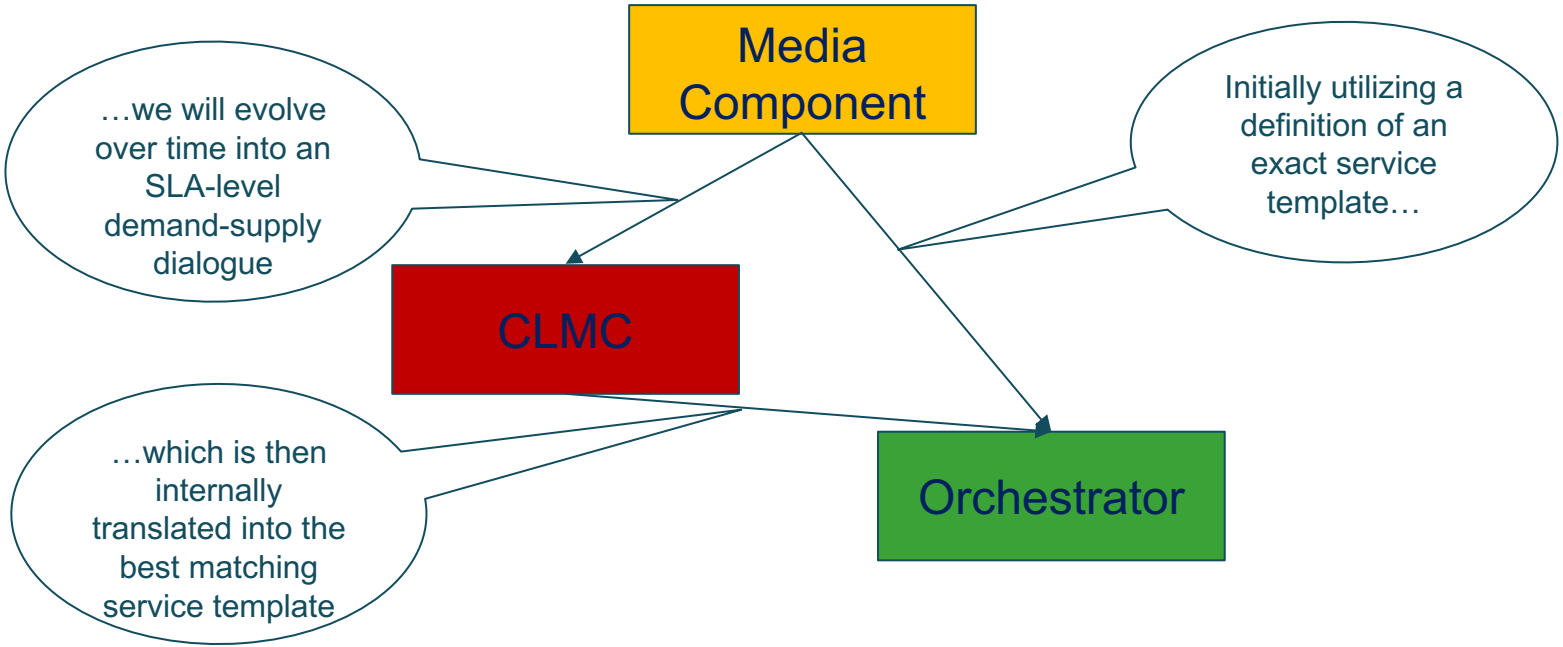
- **Faster response, better engagement**
  - service deployment at the edge of the network (e.g. in a street cabinet)
  - compute located just one hop away (at best) from the users, low latency access
  - compute workload distributed across the network
- **Improved service request routing**
  - fast (between 10 and 20ms) switching time from one service instance to another by not relying on the DNS.
  - overcomes inefficient ‘triangular’ routing of requests in current IP networks
- **Multicast delivery of http responses**
  - multicast-based delivery of HTTP responses to service request transparently to the (otherwise unicast) semantic of HTTP transactions.

ROBUST, SECURE

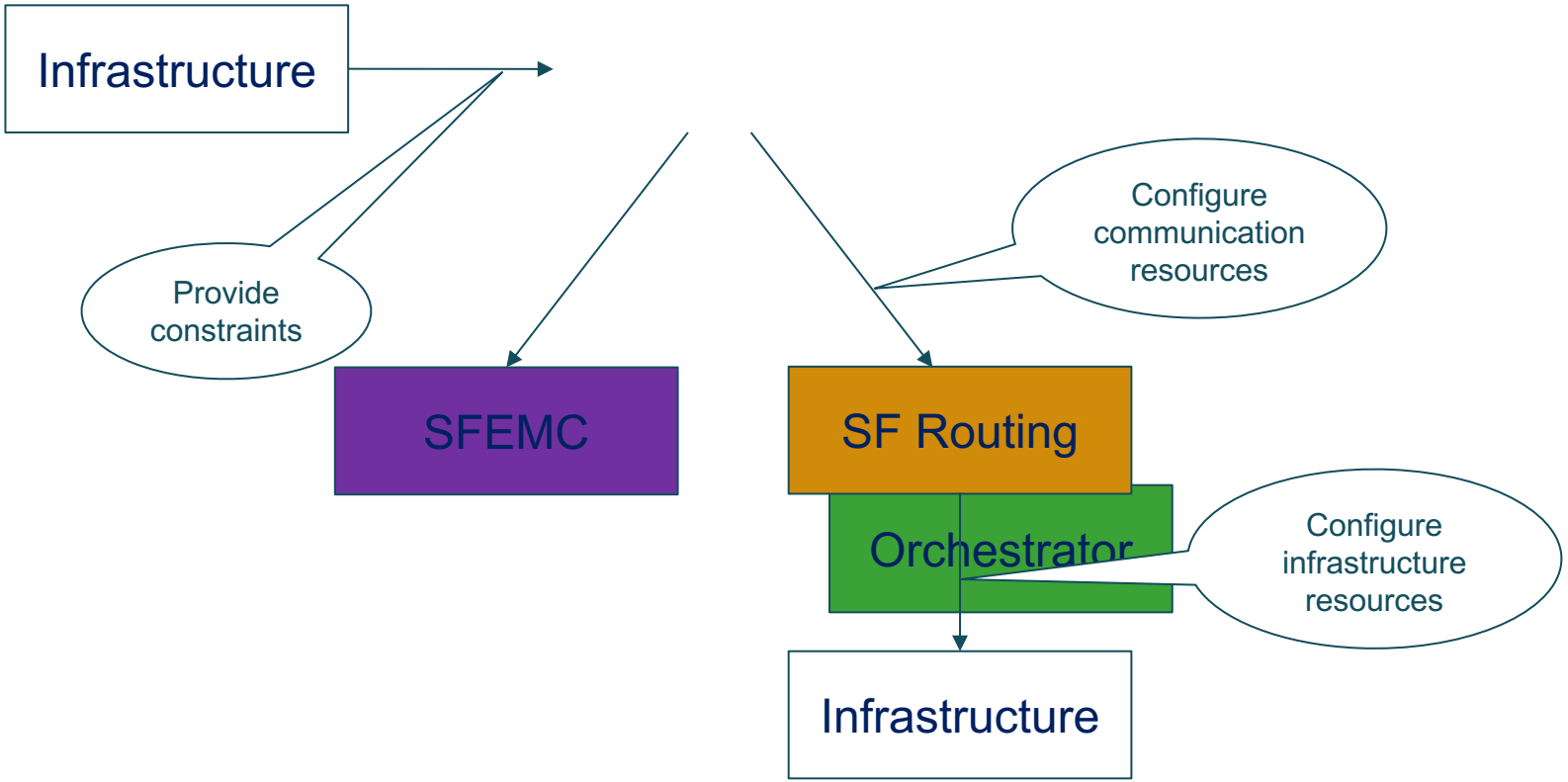
- **Net-level indirection**
  - indirection of service requests at the network level allowing error response to redirect the original request to another alternative surrogate
  - nesting operations leads to a net-level ‘search’ among all available surrogate instances
- **Less chance of insecure direct object references**
  - CDNs morph into surrogate service endpoints with the potential to hold the necessary security context when serving the desired content
- **Secure end-to-end access to content**
  - CDNs deployed as properly secured endpoints with the necessary certificate sharing between content
  - Securing content delivery according to the originally intended end user facing contract -more secure for provider and consumer.

…achieved through a unique cross-layer information approach

An Increasingly Rich Dialogue between Experimenter & Platform



Supported by Flexible Management and Control



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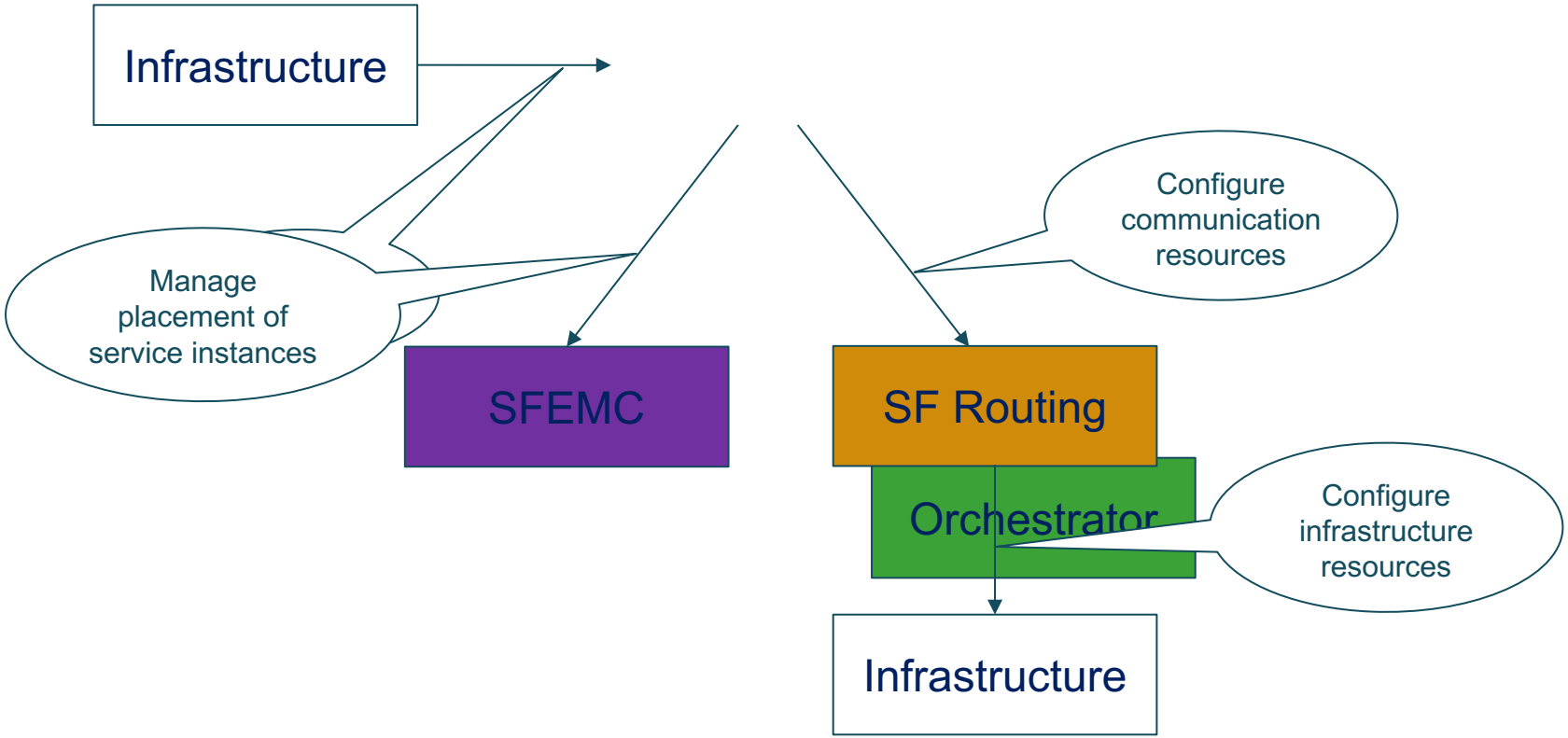

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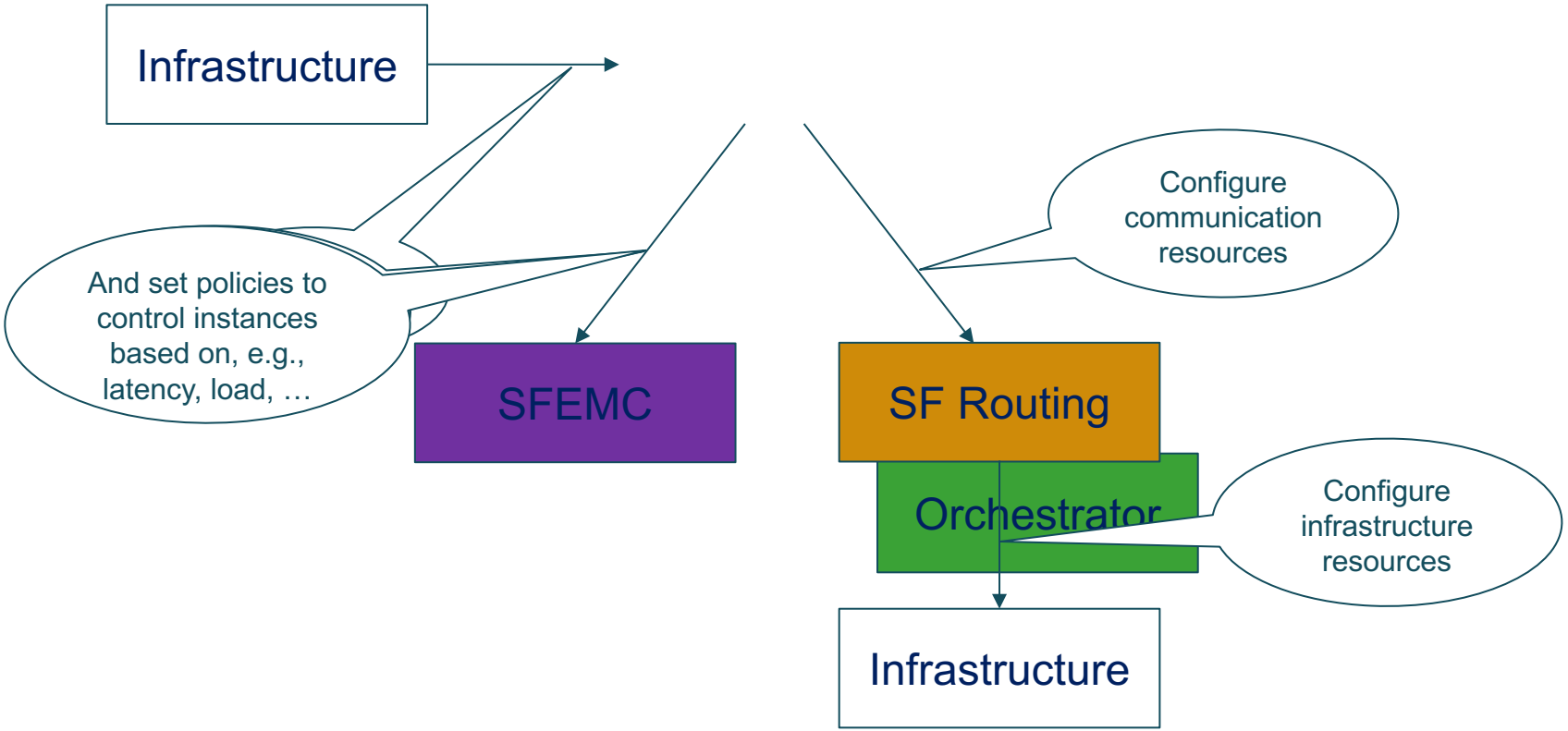
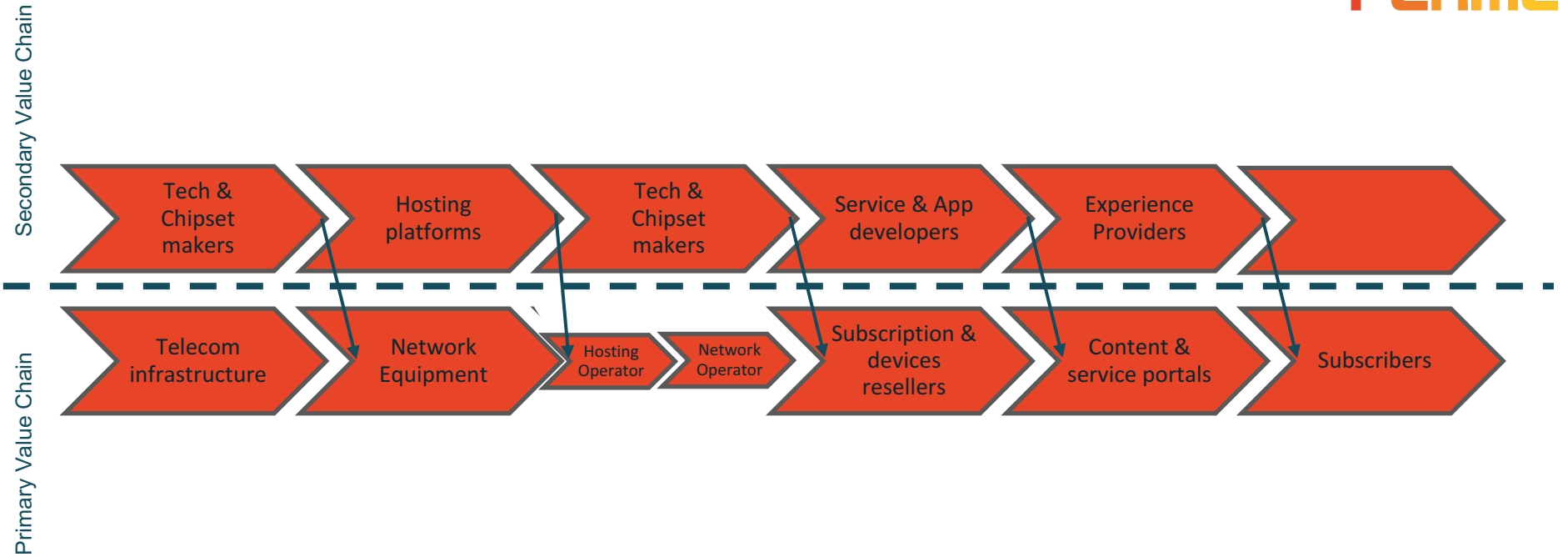
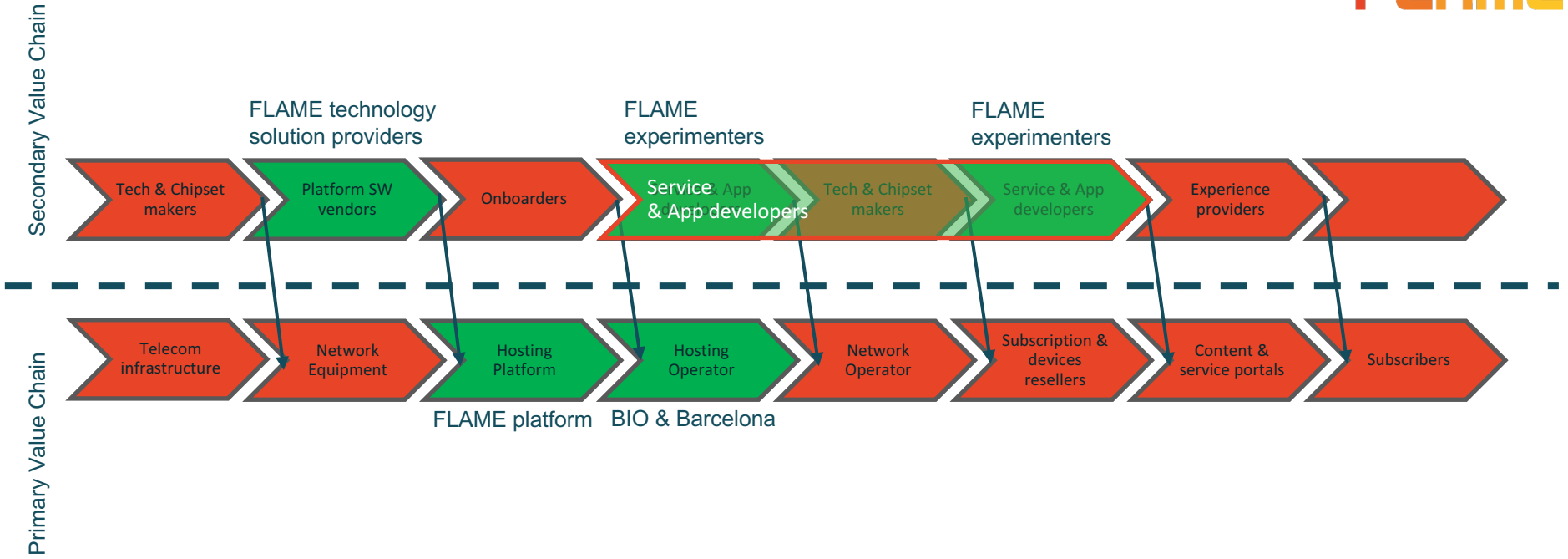


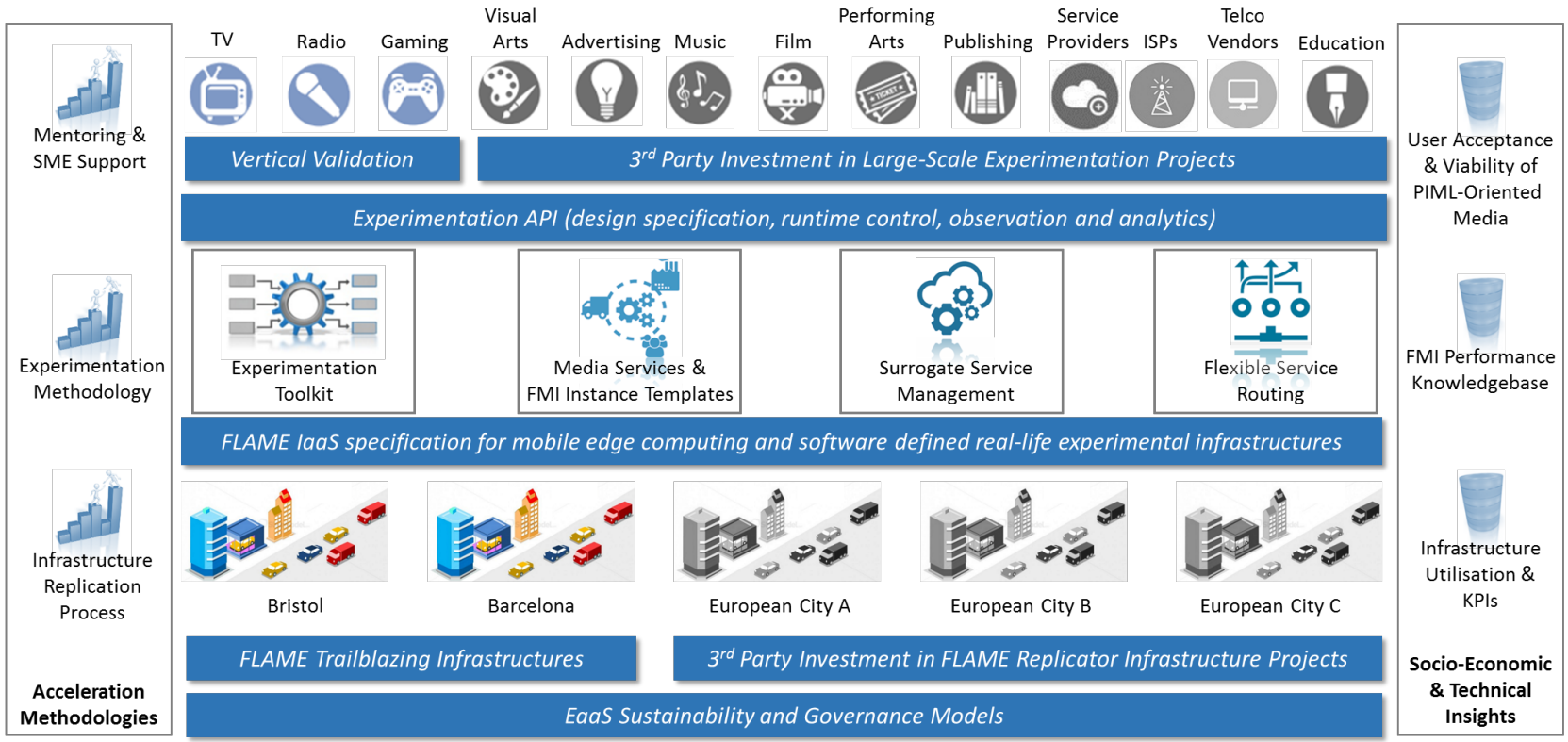
Evolved from the Traditional Value Chain



Towards a Platform-Based Value Chain



Overall FLAME Offering



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