NANOG 80 Keynote:

The Awe, Angst, and Challenge of Being a Networker in 2020

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« kentik ®

Prelude

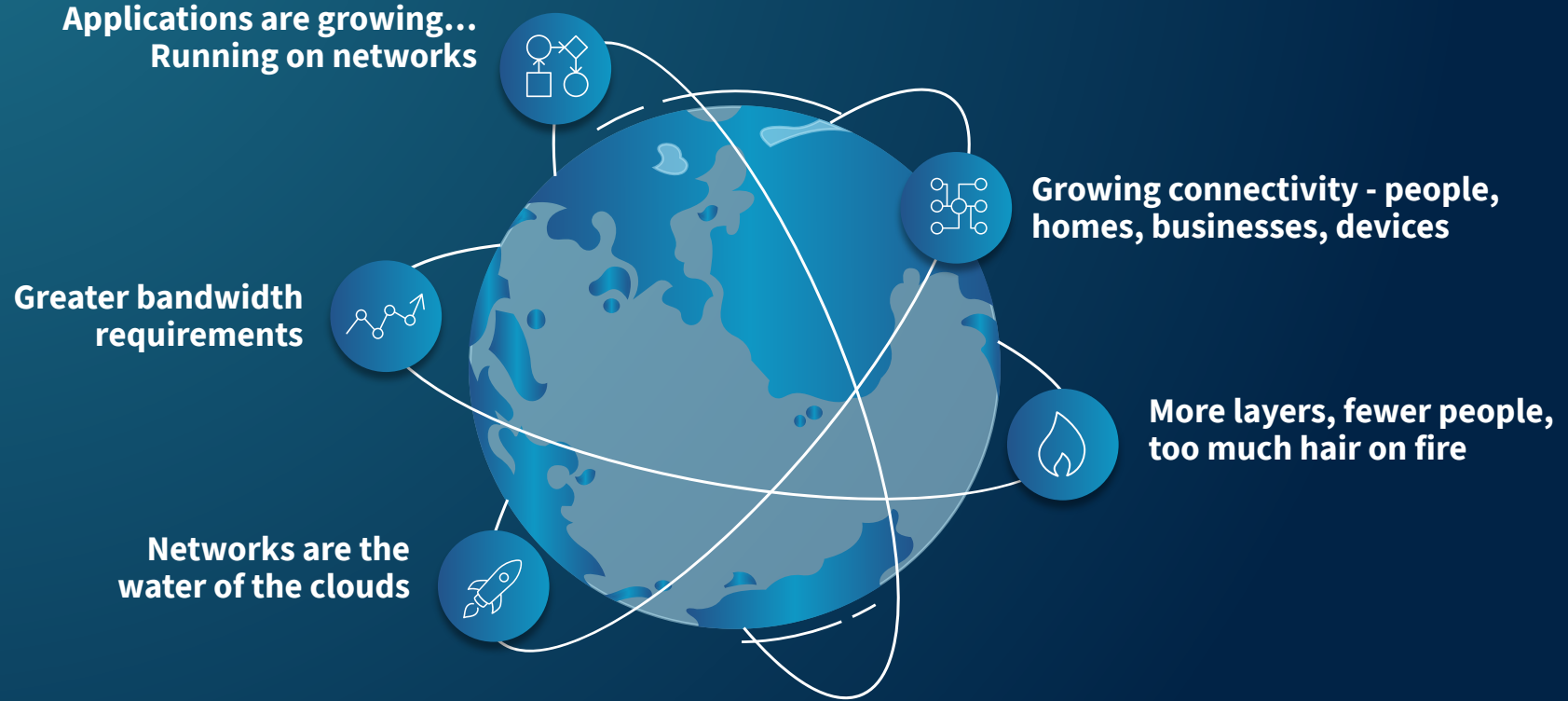2020 has been a difficult year.
In many ways,
the world depends on you!

THANK YOU!

State of the Network World

The Need For Networks is Growing

**Applications are growing…
Running on networks**

**Growing connectivity - people,
homes, businesses, devices**

**Greater bandwidth
requirements**

**More layers, fewer people,
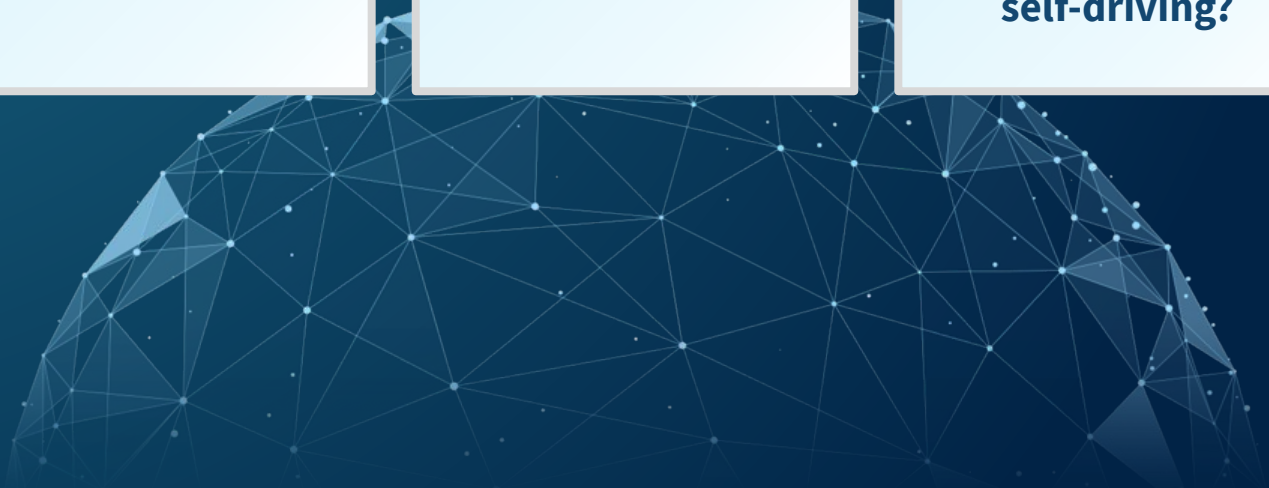too much hair on fire**

**Networks are the
water of the clouds**

But Wait - the Outsider View

Isn't it all virtual?

Isn't it all APIs?

Aren't networks self-driving?

Where We Have Been: Networker Evolution + DNA

History; Networking DNA

- A lot of us started as generalists + hobbyists

- And got fascinated by connections and how they work

- On the network front line, anyone who can help has opportunity!

- As a mix of 'book knowledge' and tribal knowledge / apprenticeship

- And breaking things

History; Networking DNA

- You've got to think it's cool to be reasoning from first principles!

    - (How often do you find a kernel bug, Mrs. SRE??????)

- It seems simple (make the packets go from here to there)

- But reality - convolved with politics - can often be more complex

History; Networking DNA

This is awesome but…

how do we replicate / scale / grow?

The Awe and the Angst

The Awe

- Networkers run the largest distributed system out there

- That is amazingly resilient

- And supports the digital world

The Atlantic

IDEAS

The System That Actually Worked
How the internet kept running even as society closed down around it

MAY 6, 2020

Charles Fishman

The Angst: 2020 Networker Challenges

OPS SILOS: TOOLS + KNOWLEDGE

CLOUD CLUE + TELEMETRY GAP

AUTOMATION != SIMPLICITY

BUZZ AND HYPE

GENDER AND RACE DIVERSITY

NEED TO ATTRACT NEXT GENERATIONS

Where We're Going:
Hype and Reality

Hype + Networking in 2020

CLOUD

AUTOMATION

STREAMING TELEMETRY

ML/AI

SELF-DRIVING/ CLOSED-LOOP NETWORKS

2020: Reality

2020: Reality

Automation is real, but early

General AI/ML to fix everything is not coming in 2021

Cloud is real and growing faster than on-prem

Streaming Telemetry is some, but not all, of what we need

Forecast: 2021+

Telemetry and AI will help

Specific ops patterns will be automated

Security, ops tooling will converge

Net + Dev/SRE/App ops will integrate

Public cloud will outpace 'owned' networking

Calls to Action

Suggestions For The Industry

Things we can do to help with diversity for
the next generation - and cross-ops understanding

Agree on common and clear terminology

Cut the hype - it holds us back

Education, foundations AND cutting the hype!

Help other groups see into the network

How Do We Get There?

Specific suggestion for NA networkers -
Panels, more tutorials, working groups to curate great content

As individuals

**As companies -
Do well by doing good!**

**As an industry -
NANOG, ARIN,
RIPE, IETF, ...**

Practitioner Recommendations

Automation

APIs are your friend

Cloudify

We need to learn the 'cloud' side

Career + Community

Document, teach, and mentor

Questions?

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