Virtualisation: Reaching tipping point?

The evidence from the NFV Deployment Tracker

Webinar, 22 May 2019

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Virtualisation: Reaching tipping point?

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What's happening with telco NFV?

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Our *NFV Deployment Tracker*

- STL Partners' *NFV Deployment Tracker* is a comprehensive and reliable source of market intelligence on NFV and SDN in live telco networks
- Updated quarterly – Excel spreadsheet of global database, and regional or global analytical reports

NFV Deployment Tracker: Europe 2018 Update

Updated analysis of STL Partners' NFV deployment tracker. What have Europe's major telcos done, how are vendors faring, and who leads the pack?

NFV Deployment Tracker: Global review and update

SDN and NFV deployment is growing deeper but not broader: the long tail lags behind the pioneers.

Data sources for this webinar

- Data is taken from the latest update of the *NFV Deployment Tracker*, due end of May 2019
- This includes info on 479 live, commercial deployments of NFV and SDN technology across 105 mainly Tier-One networks worldwide
- Data is drawn largely from publicly available information plus some confidential information from operators

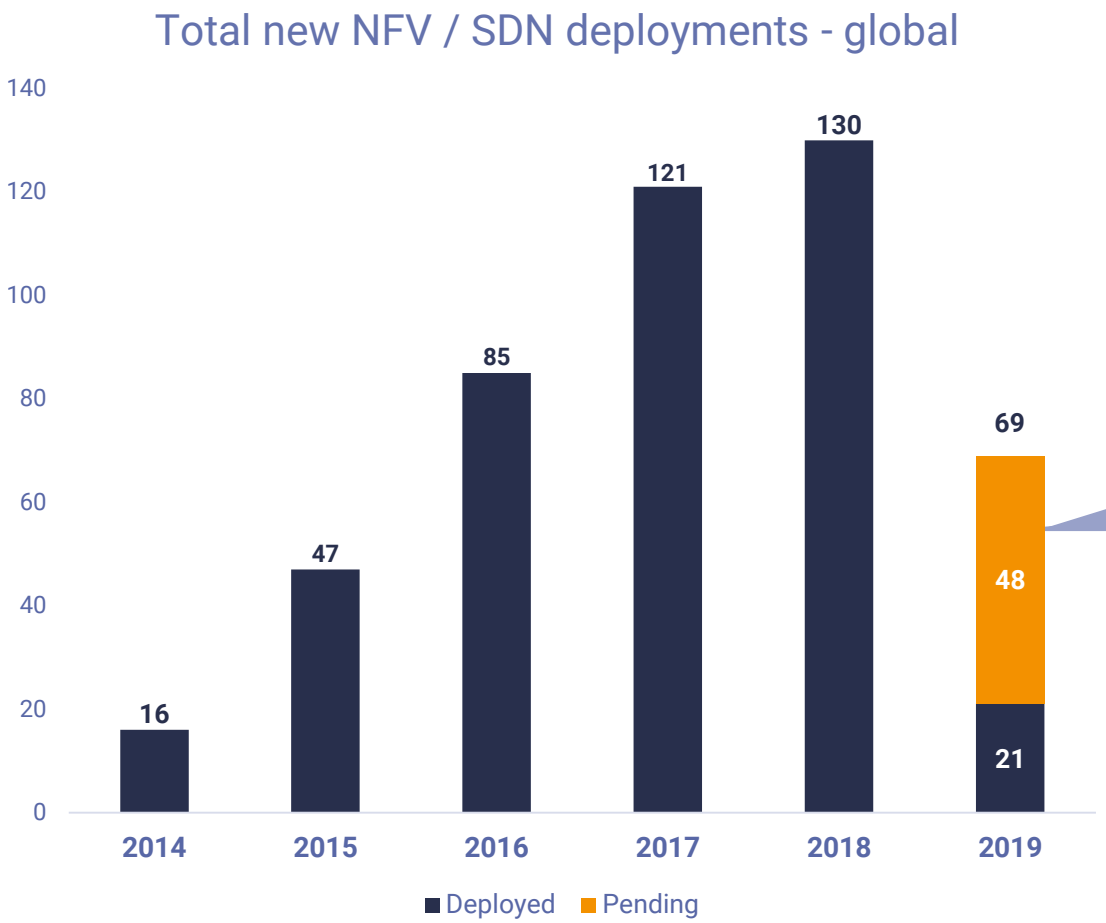
How do we define a ‘deployment’?

The implementation of a given Virtualised Network Function (VNF) and any named sub-components, or of a whole NFV or SDN solution including several explicitly referenced VNFs and components

- If the same NFV platform is rolled out across multiple operator natcos, we count this as a single deployment
- A lot of virtualisation is not publicised by telcos or vendors: ‘minor’ network functions
- But the most critical deployments – if successful – are eventually publicised, and feature in the *Tracker*

479 deployments comprise 1,000 instances of VNFs and other NFV or SDN components in live telco networks

NFV / SDN deployments keep growing

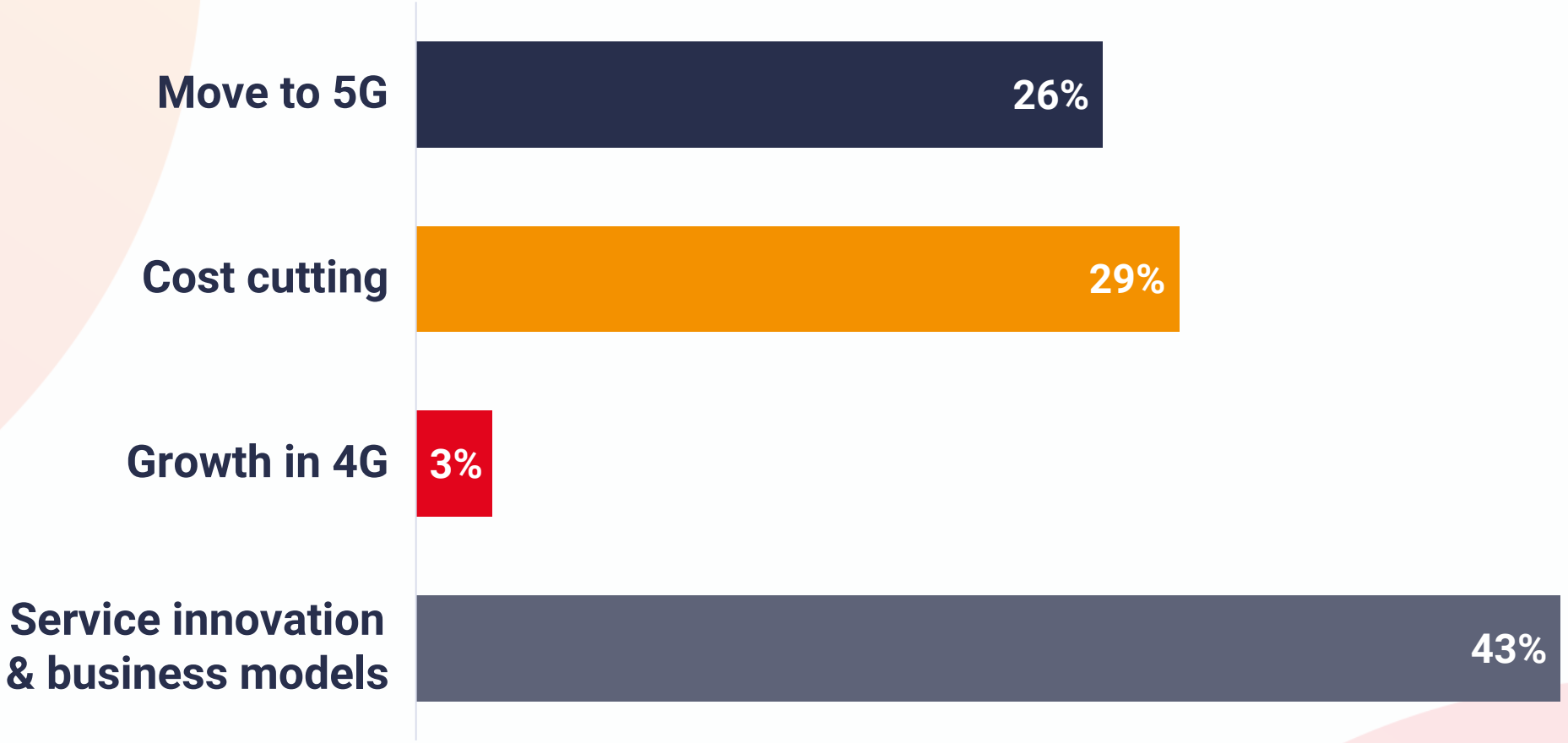


- Growth appeared to slow in 2018 but has accelerated in 2019
- Completed 2019 deployments correct to April (more will be publicised later in 2019 and 2020)

Deployments not yet reported as completed - we expect to be finalised by end 2019

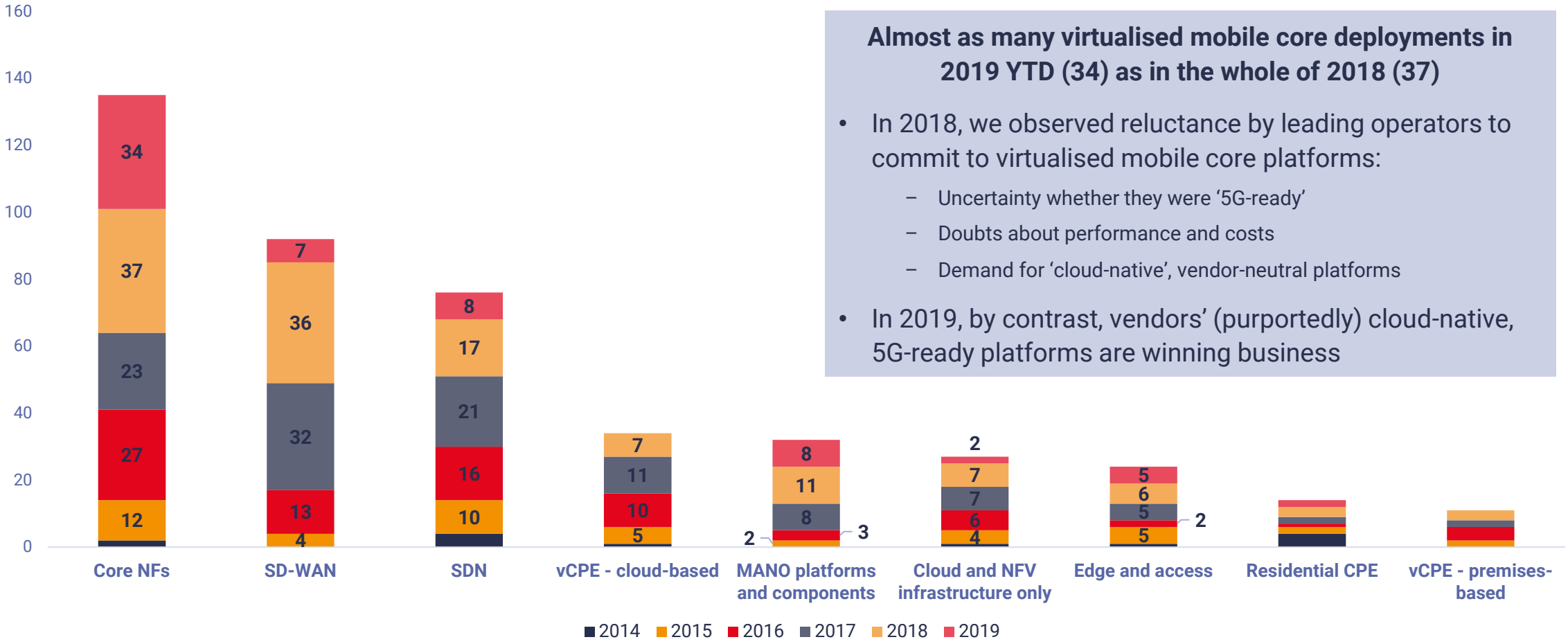
So on track for 150 to 200 deployments in 2019

Audience vote: What is driving NFV deployments today?



Mobile core virtualisation is driving the growth

Deployments by primary purpose

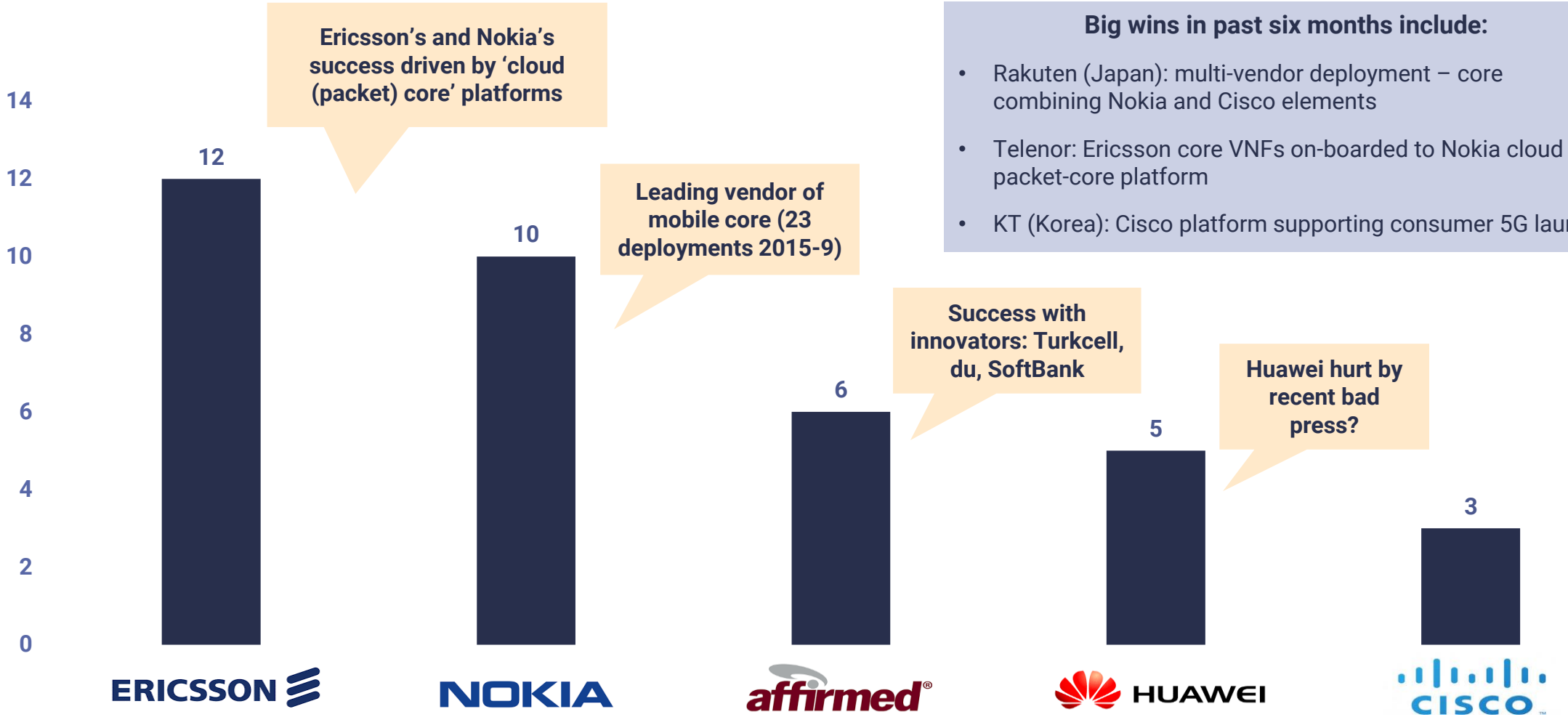


Almost as many virtualised mobile core deployments in 2019 YTD (34) as in the whole of 2018 (37)

- In 2018, we observed reluctance by leading operators to commit to virtualised mobile core platforms:
  - Uncertainty whether they were '5G-ready'
  - Doubts about performance and costs
  - Demand for 'cloud-native', vendor-neutral platforms
- In 2019, by contrast, vendors' (purportedly) cloud-native, 5G-ready platforms are winning business

Ericsson and Nokia lead in recent virtual mobile core deployments

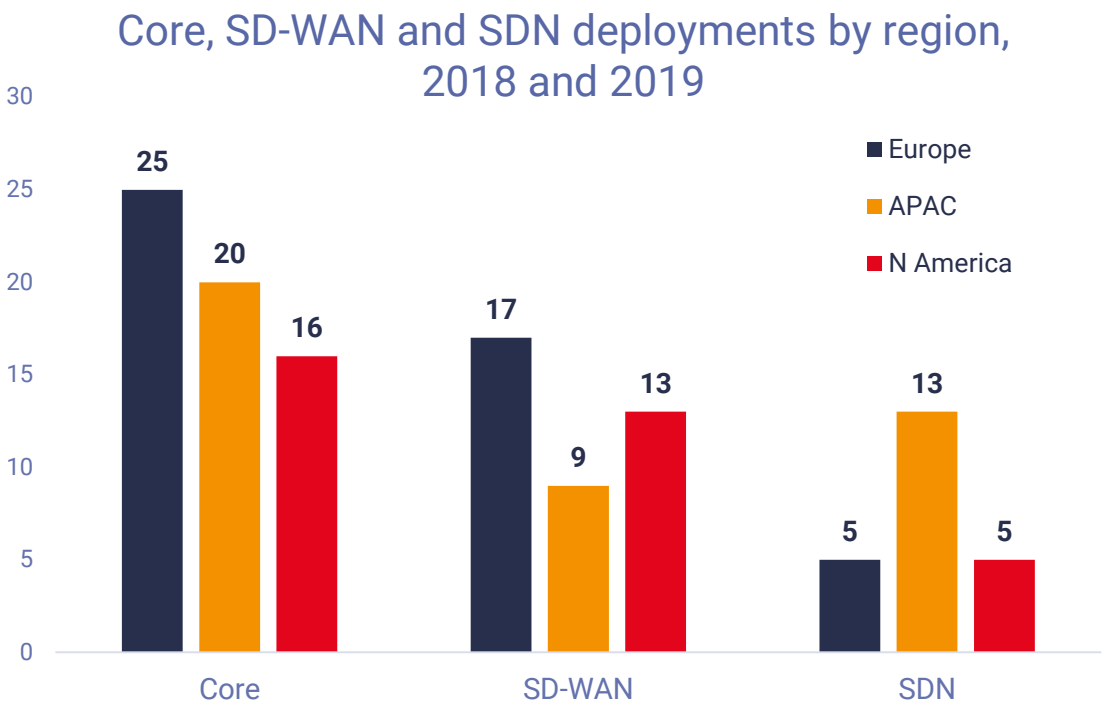
Virtualised mobile packet core deployments: leading vendors, 2018/19

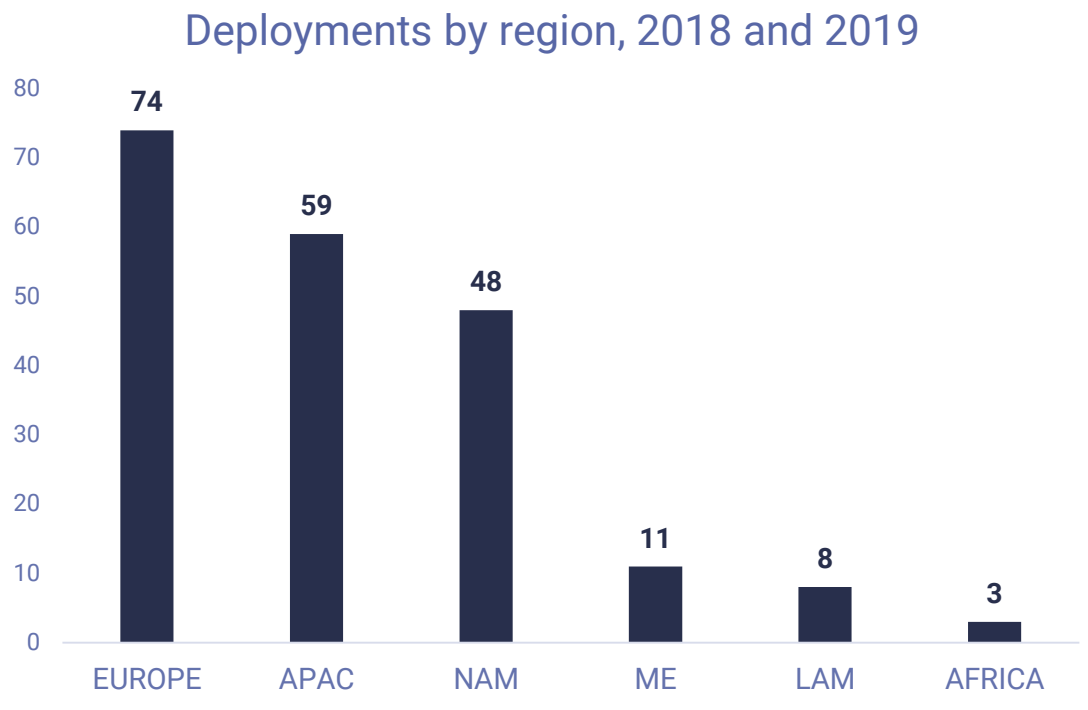


Big wins in past six months include:

- Rakuten (Japan): multi-vendor deployment – core combining Nokia and Cisco elements
- Telenor: Ericsson core VNFs on-boarded to Nokia cloud packet-core platform
- KT (Korea): Cisco platform supporting consumer 5G launch

Differing focus drives overall volume by region





- Europe's lead in 2018/9 driven by mobile core virtualisation – historically strong in the region
- SD-WAN is top category in N America since 2017, but volume of new deployments is falling there
- Asia-Pacific historically marked by innovative SDN roll-outs – core and SD-WAN also strong
- Overall, Asia-Pacific is the leading region: 33% of all deployments (Europe 32%, N America 25%)

Vodafone and Telefónica are the leading telcos

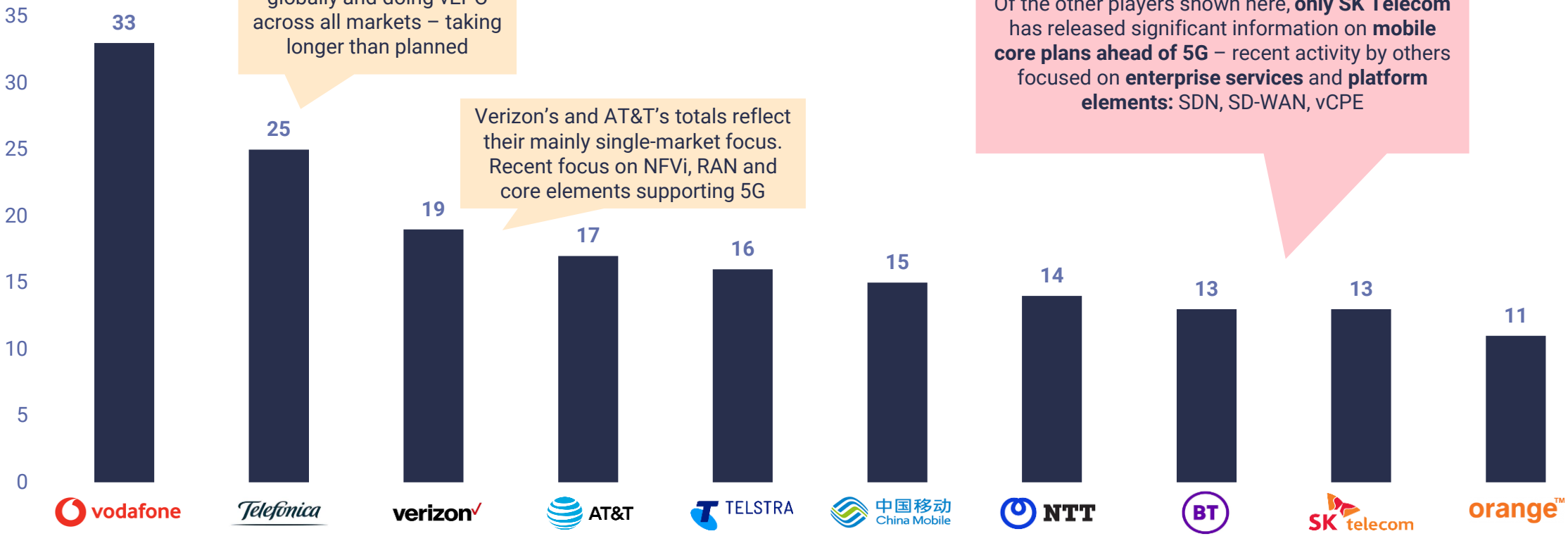
Vodafone's activity focused on NFVi and mobile core: several non-public-domain deployments added to our aggregate data set

Rolling out its 'UNICA' NFVi globally and doing vEPC across all markets – taking longer than planned

Verizon's and AT&T's totals reflect their mainly single-market focus. Recent focus on NFVi, RAN and core elements supporting 5G

Of the other players shown here, **only SK Telecom** has released significant information on **mobile core plans ahead of 5G** – recent activity by others focused on **enterprise services** and **platform elements:** SDN, SD-WAN, vCPE

Leading operators by number of deployments



Preliminary conclusions: mobile core and 5G drive growth – but cloud-native 5G mobile cores still some way off

- Volume of NFV / SDN deployments enjoying healthy growth
- Driven by actual and planned 5G roll-outs
- Telcos are (to some extent) buying in to vendors' promises that their 'cloud-native' mobile packet cores present a migration path from 4G to 5G: 'non-standalone' (NSA) to 'standalone' (SA)
- But substantive issues on core and NFV in general remain unresolved: competing software standards, performance, RoI, vendor-neutrality, use cases / business models, and true cloud-native
- Arguably, no one – not even AT&T – has yet delivered a truly cloud-native virtual mobile core, let alone a 5G core

Is 5G the tipping point?

Matt Pooley

Virtualisation Lead

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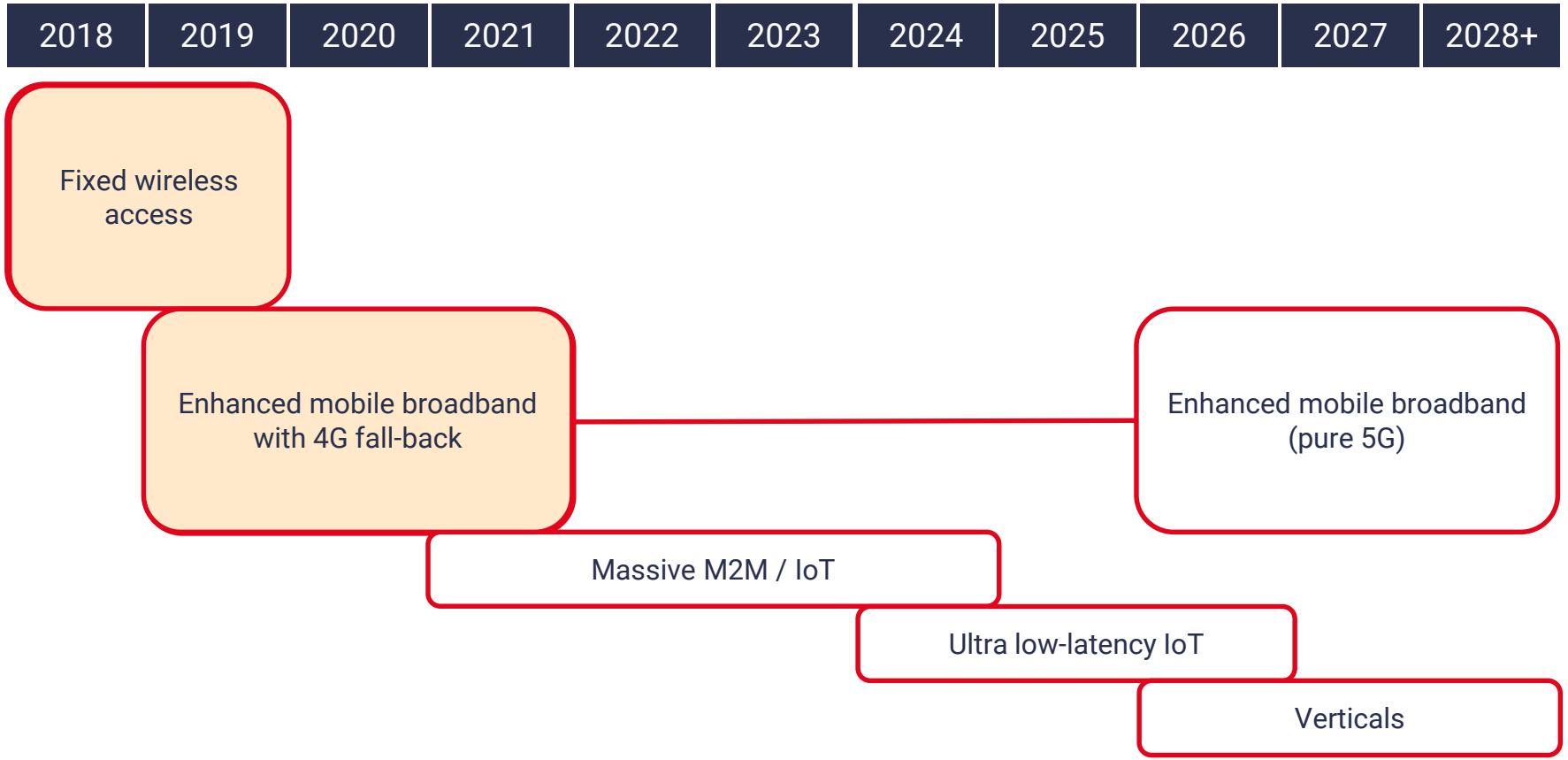
While there is no 5G killer app on the scene...

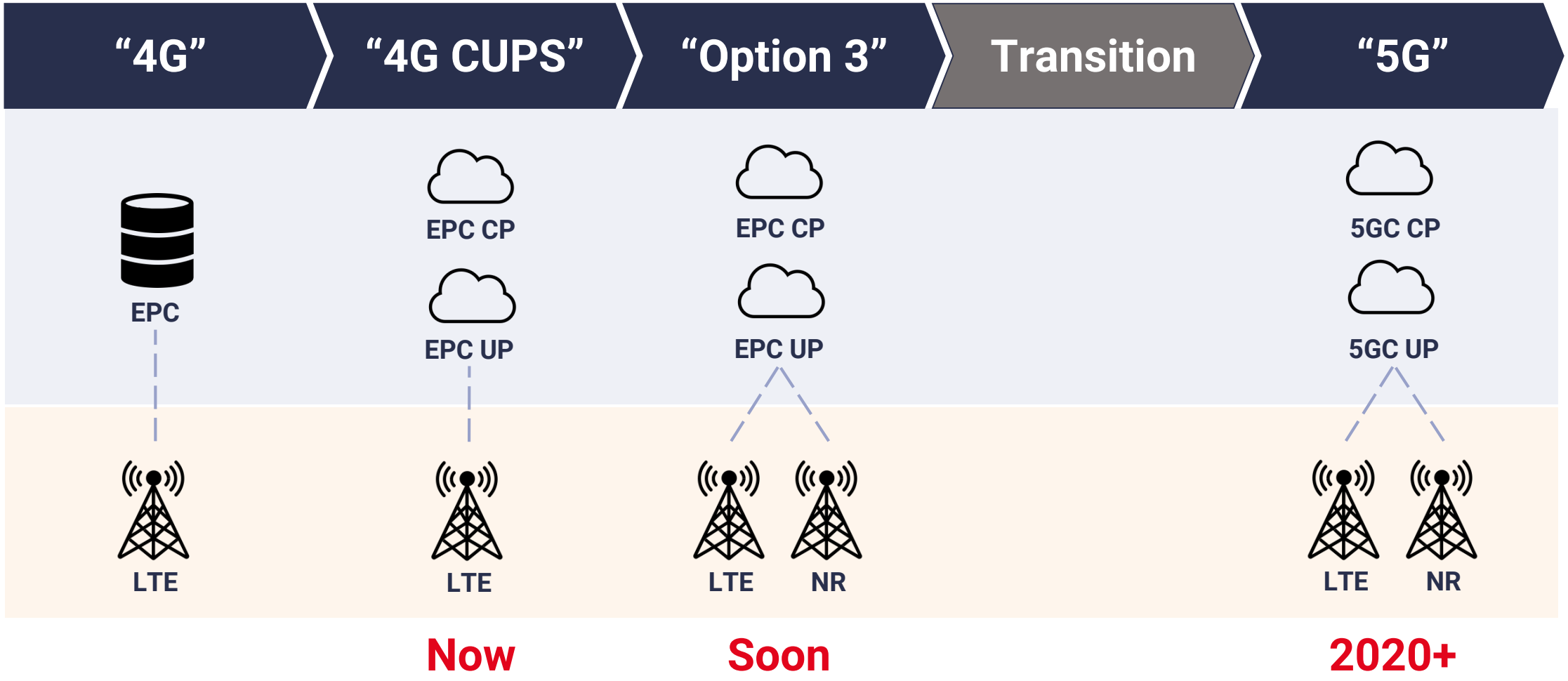
low cost + **speed** + **capacity** + **excited customers**

5G = powerful tool

… and the 5G investment cycle is emerging now



Virtualisation of 4G core is clear step towards “proper 5G”...



… and it makes sense short- *and* long-term

4G still a big challenge

LTE data traffic growing fast – but not revenues

Need to release value from expensive LTE rollouts

5G pressure mounting

Pressure to deliver 5G…

… core not coming until 2020+

Virtualise for **new and end-of-life** 4G traffic

Cure 4G headaches

Reduce cost of traffic growth

Sweat existing assets

Prepare for 5G rollout

Adapt to “cloudy” operations

“Easy” to add 5G radio…

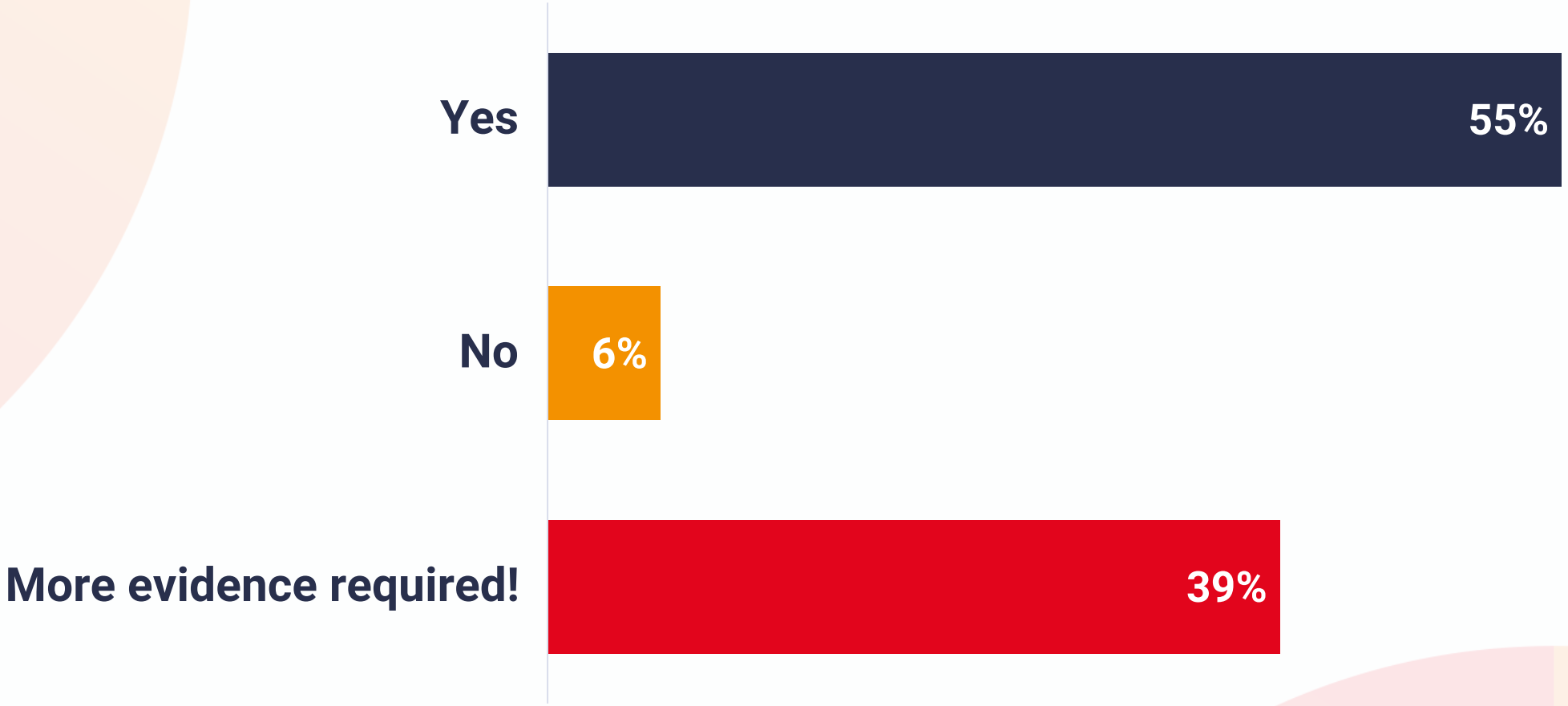
… and move to 5G core when vendors can deliver and MNO ready

Growing push to solve (many) remaining problems indicates that momentum is building

NFV performance & reliability	"Cloud native" availability	5G maturity
"Better" than PNFs	"Software first" NFs	Radio that works
Scales properly	Microservices architecture	5G core available
⬇	⬇	⬇
High pressure on vendors	Vendors talking	BTS already shipping
Function perf. improving	Telcos experimenting	FWA working, mobile <12mo
Increasingly "open" platforms	PNFs being "re-written"	Vendors racing for core

= Virtualisation going mainstream

Audience vote: Virtualisation at tipping point - do you agree?



Questions or comments?

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