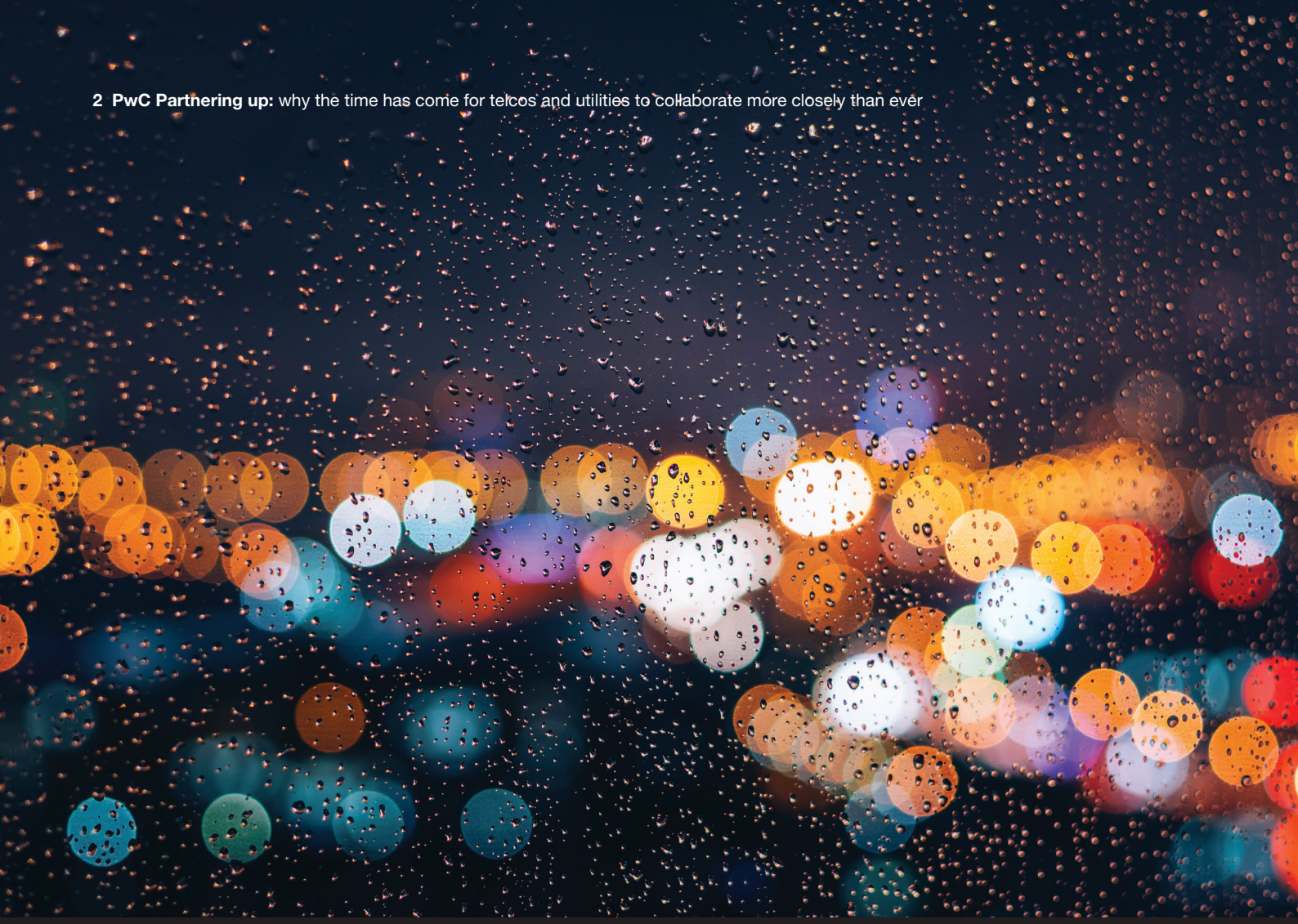
Partnering up: why the time has come for telcos and utilities to collaborate more closely than ever

www.pwc.com



The electric industry and telephone industry were both born in the 1870s. Over the century-and-a-half since then, they've had a "pole's-length" relationship – one often hampered by low levels of mutual trust, and usually focused on executing discrete transactions rather than forging long-term partnerships. But in PwC's view, that has to change.

Why? A range of drivers – ongoing advances in technology, evolving customer demand, regulatory pressures and climate change, to name but a few – are making collaboration between telcos and utilities not just increasingly logical, but also more desirable. By striking new types of cross-sector partnerships, organizations in both industries could realize significant future benefits for themselves, their customers and the planet. For example, by working together to increase sensorization of homes, telcos and utilities can both drive better energy efficiency and also help to realize the promise of the "smart home".

A changing landscape

The rising potential for collaboration springs from the fast-evolving operating environment for both industries. Foremost among the drivers is the rapid advance of technology – primarily the universal deployment of wireless communications, quickly followed by the "sensorization" of equipment. Utilities have been leaders in sensor deployment within their own operations. And telcos have been pushing out mobile sensors across virtually every other industry – logistics, transportation, manufacturing and more – generating a mass of data.

Rising penetration of the Internet of Things (IoT) and edge computing has enabled both telcos and utilities to harness this data to drive automation into their field forces – leveraging technologies like analytics and augmented reality to predict, triage and remediate issues faster and more effectively. We're already seeing utilities fly drones to inspect lines and equipment, and telcos using edge computing to maintain real-time communication with autonomous vehicles in a limited way.

But technology is just one change driver. With both energy costs and the urgency of climate change rising, telcos and utilities are providing tools to manage energy usage. As smart homes and smart factories become a reality, the two sectors are fostering both digitalization and environmental stewardship. Meanwhile, scrutiny of capital projects is intensifying, reflecting telcos' huge spending on networks and utilities' investments in electrification and renewables. But governments are helping by sharing some of the burden: take the US, where the Build Back Better Framework is offering financial backing for electric infrastructure and rural internet links. Or the UK, where the government led Shared Rural Network (SRN) is channeling a mix of public and private investment into leveling up mobile connectivity across the country.

The response from utilities…

No question, both industries are facing a blizzard of change. How have they responded? For utilities, a major focus in the US, Europe and worldwide has been grid modernization. The goals include improving reliability, absorbing new – often renewable – distributed energy resources feeding into the grid, and preparing for electrification of sectors like transport. All of this requires the grid to get smarter, informed by real-time communication across millions of devices. To provide this pervasive coverage, utilities have mostly built their own "mesh" networks, partly because cellular technology was too expensive. But as cellular's cost and latency have declined and its bandwidth has increased, it has become a viable option. The result? An opportunity for utilities to fill gaps in their coverage by leveraging a proven technology in partnership with telcos.

To do this, utilities must drop their historically conservative approach to technology. And they're now being forced to do this by the sheer scale of the required transformation: in the US alone, the replacement value of the electric grid – including power plants, transmission lines, distribution lines, substations and transformers – has been estimated at some US$4.8 trillion.

Looking globally, the International Energy Agency (IEA) calculates that worldwide investment in electricity grids needs to average around US$600 billion annually through to 2030 to stay on course for net zero by 2050 - almost double the current level of investment. This makes a proven, increasingly cost effective technology like cellular all the more attractive. What's more, communications is increasingly critical to utilities, whether for dispatching crews safely and efficiently, collecting data for asset analytics and visualization, or controlling energy flows from distributed generation. And when it comes to communications, telcos are the partners of choice.

…and from telcos

How about the telcos? Like utilities, they're capital-intensive businesses. But their problem in many markets is that, unlike utilities, their charging rates aren't based on their capital investments. This matters: with each successive generation of wireless technology –including 5G – they've effectively had to fund a new network and more spectrum every ten years with no certainty of a return. The resulting tight constraints on capital are adding urgency to their quest for new revenue-generating use cases. Focus areas include 5G itself, fixed wireless access (FWA), multi-access edge computing (MEC) and network-as-a-service (NaaS). However, the complexity of the business cases lengthens the time-to-revenue, causing frustration for investors eager for quicker returns.

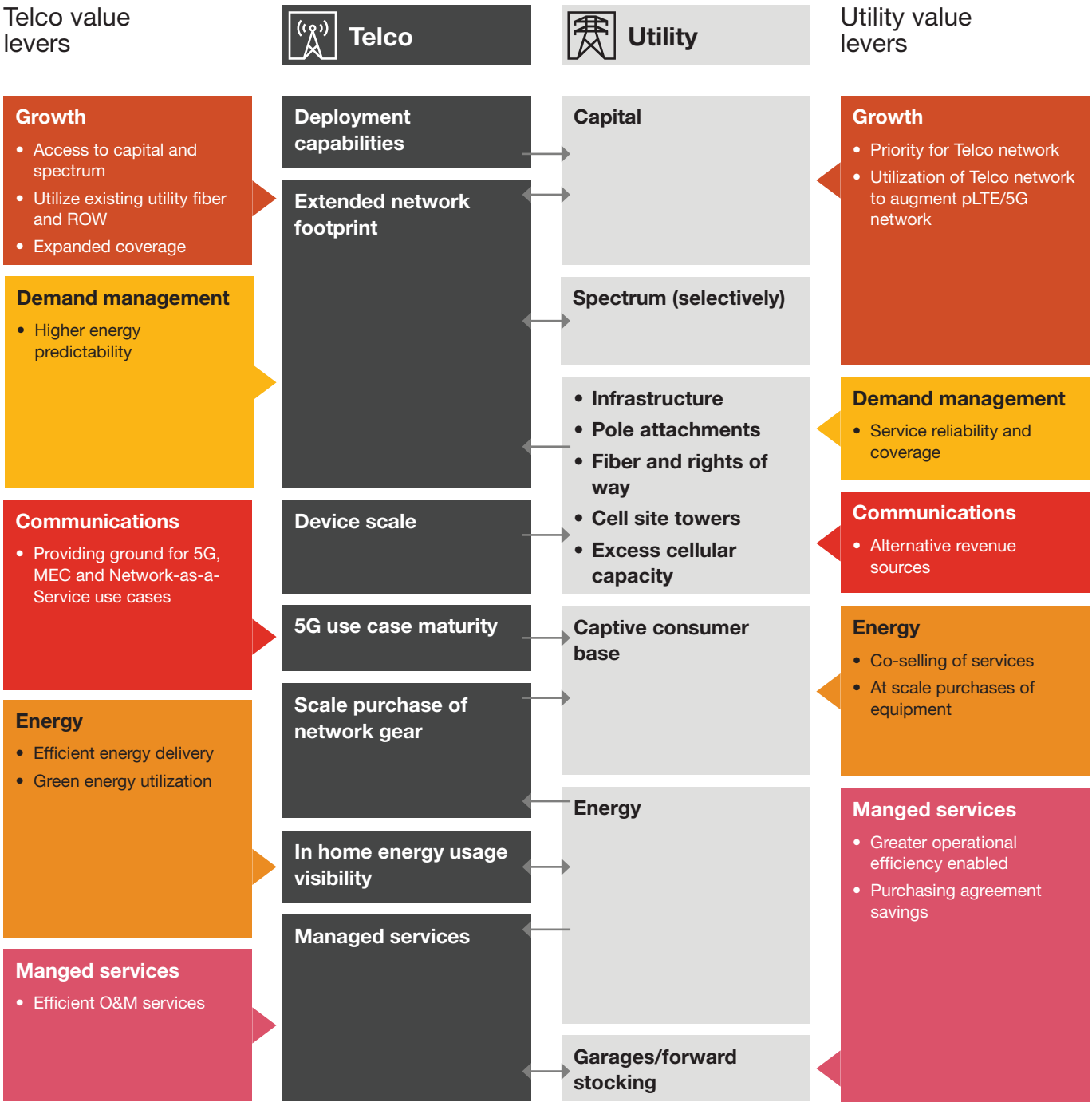
A further challenge looming large for telcos is extending coverage to the "last frontier": sparsely-populated rural areas. Their current 5G investments are largely targeting urban locations first. Electric utilities companies are the logical partners to help build out telcos' rural capacity, given their ubiquitous network infrastructure.

A final noteworthy trend is secure private networks. While telcos typically provide public access to their wireless networks, they're also now building private 5G or LTE networks for enterprises, campuses and other large customers seeking a better-than-Wi-Fi experience and cellular-grade quality, availability and security. Utilities are among the leading customers for private networks, as they seek to move from their proprietary networks to more standardized technology with a larger device and spectrum ecosystem.

What would the partnership model look like?

What's clear is that telcos and utilities face pressures and opportunities that are closely aligned – and often complementary. As Figure 1 shows, this dovetailing creates growing potential for them to collaborate, blending their differing strengths, assets and operations to create mutual value.

Figure 1: Telco and utility value levers



However, for collaboration to take off, the first hurdle to overcome is a legacy lack of trust that has existed between the two industries for many years. In the past, utilities were sometimes disappointed with the quality of the services they received from telcos, saying they'd encountered issues such as unplanned outages, poor responsiveness during weather emergencies, or unsatisfactory infrastructure maintenance. Elements of this trust gap between utilities and telcos persist to this day. And this low level of trust needs to be addressed, primarily through telcos demonstrating that their service quality and consistency meet the utilities' exacting expectations.

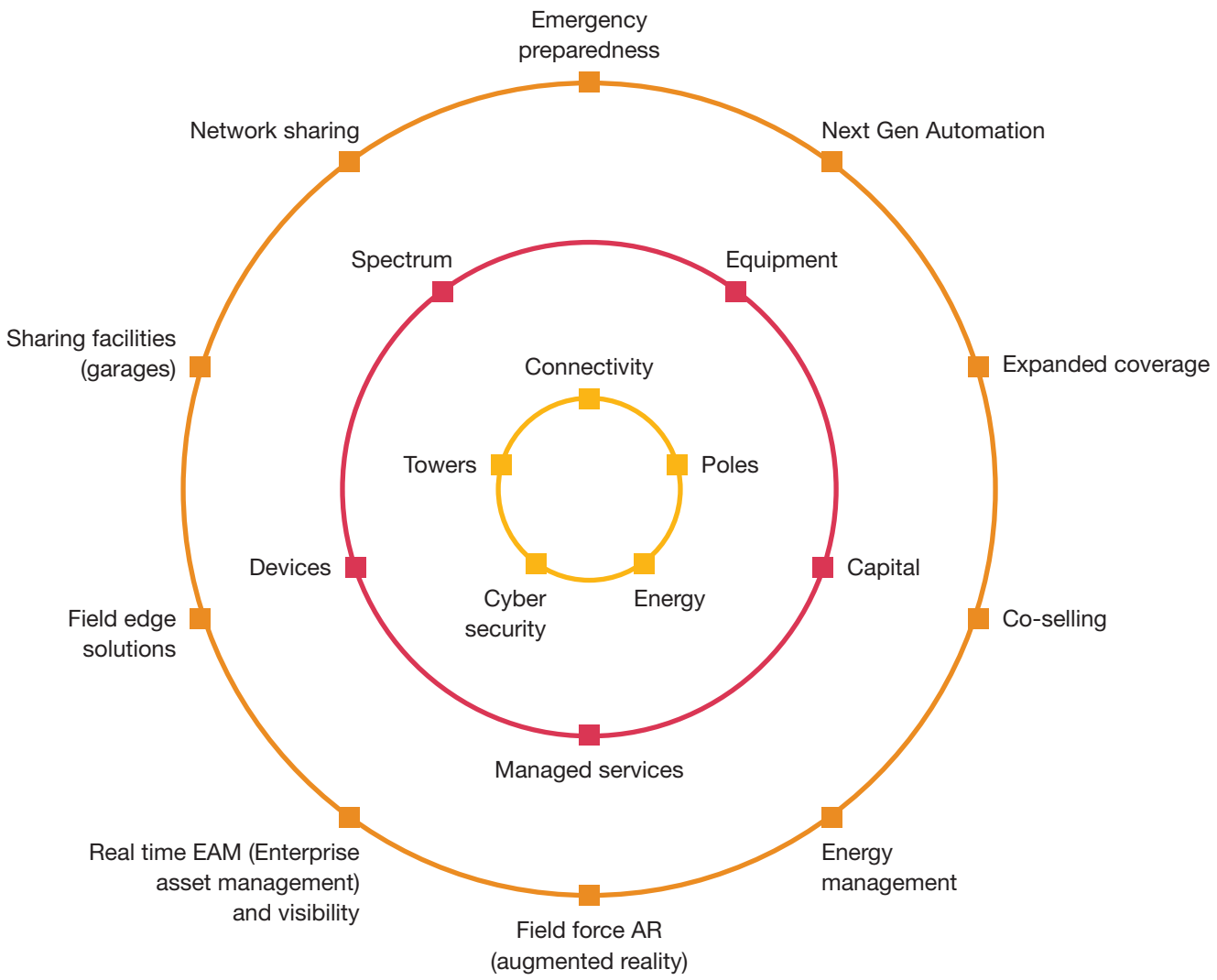
So assuming the legacy trust gap is bridged, how might these partnerships work? As an example take private networks. Telcos currently provide the extended network footprint for private networks within utilities. In the future, telcos could leverage their distinctive assets – large network operation centers, scale in terms of labor, design and engineering services, and huge purchasing power for equipment – to provide utilities with an end-to-end solution for private networks, all the way from procurement through deployment to operation as a managed service. In exchange the utilities would bring much-needed capital – but much less than if they were to go it alone.

Collaboration on private networks could be just the start. For example, the utility might contribute some spectrum that the telco can then "light up". Utilities already provide pole attachments, rights of way and – to some degree – fiber. In the future they could provide much more fiber, with the telco installing the wireless antennas on the end. Utilities also have strong and often captive customer bases, opening the way to co-marketing and co-selling. And in exchange for other benefits, utilities can bring energy to the partnership – a resource that telcos use heavily across their networks.

The elements mentioned so far might constitute the "core" partnership. But this could then go a layer deeper. For example, when the utility brings spectrum and the telco lights it up, there could be an arrangement where the telco provides that capacity as-a-service when the utility needs it, but buys back the excess when it doesn't – like a prosumer selling spare rooftop solar power back to the grid. This would extend the telco's reach to everywhere the utility has its network: if the utility had cell towers on its network and wasn't using that capacity, it could sell it to the telco.

Looking forward, other collaboration opportunities emerge. Take both sectors' physical footprint of garages, warehouses and so on. These could become joint infrastructure support and equipment storage locations, enabling both parties to unwind some assets. Another possibility is for telcos to provide "billing as a service" to the utilities, potentially realizing significant efficiencies. Figure 2 shows some of the opportunities on offer, ranging from the core partnership to much deeper collaboration.

Figure 2: How can telco and utilities firms work together?



Legend: The innermost ring is tried and tested and exists today; the middle ring is opportunistic and sparingly exists; the outermost ring is aspirational

Making it happen

The message? Sweeping change has brought telcos and utilities a golden opportunity to create more value by working together in new ways and PwC can help make this happen..

As we've highlighted, the first step is to bridge the trust gap between the two industries. PwC's publicly-stated global purpose is to "build trust in society and solve important problems" – a goal that we turn into reality through our proven ability to bring parties together to deepen trust and develop new solutions, including to help address the climate crisis. And when it comes to forging new telco-utility partnerships founded on this trust, we can bring specialist practitioners who have strong expertise in this area, in both industries. We can structure tax-efficient exchange of goods and services. And we can act as a trusted, neutral partner providing industry-aware support in areas from cyber risk to regulation. What's more, if there are common services that could be housed in a third-party, we can provide managed services.

Ask yourself this question: If, as a telco company or utilities provider you haven't considered collaborating with a partner from the other sector, isn't it time you did? It might be one of the best decisions you ever make.

If you'd like to discuss anything mentioned in this article, please do not hesitate to contact us.

Harish Nalinakshan

Partner, PwC United States
harish.nalinakshan@pwc.com

Mark Hoffman

Principal, Strategy& United States
mark.hoffman@pwc.com

Hugh Le

Principal, Strategy&, PwC US
hugh.le@pwc.com