



## VIRTUAL AND OPEN RADIO ACCESS NETWORKS – JUNE 2021

**It's the end of the (RAN) world as we know it, and I (open vRAN) feel fine**



## Table of Contents

**ABSTRACT** .....4

**KEY TAKEAWAYS** .....5

**OPEN vRAN IS SET TO RULE THE WORLD AND RUIN THE TRADITIONAL RAN ESTABLISHMENT, UNLESS THEY TRULY EMBRACE IT** .....6

THE THORNY HUAWEI REMOVAL ISSUE THAT LED TO UNPRECEDENTED MULTINATIONAL COOPERATION IS THE POSITIVE FORCE ..... 6

*For most of the world, the mission to ban the Chinese vendors is accomplished...* ..... 6

*...And international cooperation is at its best...*..... 6

*All this led to a rapid expansion of a crowded open RAN ecosystem.....* 8

BUT THE FAST 5G COMMERCIAL NETWORKS ROLLOUT CYCLE IS THE NEGATIVE FORCE ..... 9

*And that evokes George Stigler’s survivorship principle.....* 9

*Expect consolidation to ramp up.....* 10

CONSEQUENTLY, THE SHARE OF 2G/3G/4G IN THE OPEN vRAN MARKET WILL REMAIN SIGNIFICANT FOR SOME TIME TO COME.....10

*So far, 95% of commercial open RAN networks are running RAN functions on software.....* 11

*vRAN and open RAN are 2 different configurations.....* 11

*An open RAN does not need to be virtual.....* 13

RAKUTEN MOBILE ENDED 2020 WITH 10,984 OPEN vRAN 4G SITES... .....13

*...and accounted for 65% of total open vRAN sales in 2020.....* 13

*There is a growing consensus that hardware cost needs to come down.....* 14

IN 2021, THE OPEN vRAN MARKET IS POISED FOR 86% YOY GROWTH IN SALES.....14

*DISH, Telefónica and Vodafone are joining Rakuten Mobile and will kick off the world’s first open RAN brownfield deployments.....* 15

*DISH and Rakuten Mobile bring cloud RAN to prime time.....* 16

*We do not expect India to kick in this year for either 4G or 5G.....* 17

IN 2022, DISH AND THE “RIP & REPLACE” INITIATIVE WILL PROPEL NORTH AMERICA TO THE WORLD’S LARGEST MARKET POSITION .....18

*AT&T, T-Mobile US and Verizon are taking their time, claiming open RAN is far from maturity.....* 18

*Telefónica and Vodafone will continue to drive open vRAN deployments in Europe.....* 19

*...and Japan will become the world’s first open vRAN nation.....* 19

IN 2023, EUROPE WILL SHOW THE STRONGEST GROWTH, DRIVEN BY 2 RAKUTEN/DISH CLONES .....19

WE PREDICT THE “GLOBAL” SWITCH TO OPEN RAN ONLY WILL OCCUR BETWEEN 2023 AND 2025.....20

*Consequently, we expect the global open vRAN market to account for 8% of the total RAN market in 2026.....* 20

.....20

**OPEN vRAN IS A STRONG CANDIDATE FOR INDOOR DAS REPLACEMENT..... 21**

*In 2026, the indoor open vRAN/open DAS market will surpass indoor DAS.....* 22

*The neutral host capability has been protecting the DAS market so far but open vRAN can kill it all together.....* 22

.....22

*Private wireless networks remain an open vRAN niche for now but 99% of large enterprise installations are traditional RAN.....23*

*However, as DAS replacement shifts to smaller venues, open vRAN will eventually penetrate the SME space at some point.....23*

*Indoor 5G coverage is the vRAN driving force.....23*

*The shift from DAS to C-RAN to open vRAN architecture is shaking the traditional DAS vendor ecosystem .23*

*In this DAS bucket, JMA Wireless is unique .....25*

## **Abstract**

This report takes a deep dive into the virtualization and disaggregation of radio access networks and analyzes the various schools of thoughts ranging from basic virtualization of RAN functions (vRAN) to new open architectures such as open RAN, following the TIP initiative and the O-RAN Alliance specifications, designed to cut the dependency on proprietary RAN equipment supplied by the traditional vendors. The vRAN segment is taken from our existing RAN size and forecasts and broken down by 2G/3G/4G versus 5G, as well as by vCU/vDU and RU for each region, and also looks at the potential for indoor DAS replacement. The report covers a wide emerging ecosystem of vendors.