MAVENIR

OPENRAN VRAN

WHAT IS THE CURRENT STATE OF THE OPENRAN VRAN MARKET?

OpenRAN vRAN technology has arrived. The specifications were released a little under a year ago and commercial products are now coming to the market. The ecosystem is ready for this technology to begin scaling.

2. WHAT IS THE MAVENIR DIFFERENTIATOR?

Mavenir will continue to deliver vRAN as well as Packet Core and of course, IMS for voice, video and messaging. Globally, we already compete successfully against the traditional vendors Ericsson, Nokia, and Huawei in ripping and replacing their core elements in major Tier 1 experience and expertise in virtualizing networks over the past decade.

3. WHAT EFFECT WILL SOFTWARE-DEFINED/VIRTUAL RAN PLAYERS SUCH AS MAVENIR HAVE ON THE MARKET AS A WHOLE?

What Mavenir can do through virtualized software with our 3,300 employees, takes Nokia and Ericsson over 100,000 people to accomplish. Mavenir has a lower cost structure through the use of software and intends to disrupt the market on OpenRAN. The Vodafone and Telefonica announcements about partnering with Mavenir have started to destabilize Nokia and Ericsson's perceived duopoly and Huawei's supply base.

4. WHAT IS THE DIFFERENCE BETWEEN OPENRAN, O-RAN AND VRAN?

OpenRAN – disaggregated RAN functionality built using open interface specifications between elements, which can be implemented in vendor-neutral hardware and software-defined technology based on open interfaces and community-developed standards.

O-RAN – refers to the O-RAN Alliance or designated specification. O-RAN Alliance is a specification group defining next generation RAN infrastructures, empowered by principles of intelligence and openness.

vRAN – an implementation of the RAN in a more open and flexible architecture which virtualizes network functions in software platforms based on general purpose processors.

5. WHAT ARE THE BENEFITS OF OPENRAN VRAN?

COST SAVINGS. A virtualized network that is containerized can break down each of the elements. This modern network can scale to support either tens of subscribers to millions of subscribers depending on how many instances and substantiations of the VNFs are running on a single platform. TCO studies have revealed expected savings of close to 40%, consistent with the savings that Rakuten has seen with their newly launched OpenRAN network.

MULTIPLE OPERATORS & NETWORK SHARING. OpenRAN vRAN supports multiple operators using multiple VNFs sitting side-by-side on the same platform but on segregated networks. Another benefit is network sharing in the future through software.

ELIMINATE VENDOR LOCK-IN. OpenRAN breaks open the interface between the remote radio head and the DU. Those traditional vendors only offer a walled garden with proprietary hardware. Through the O-RAN Alliance, a fully open interface on Split 7.2 has been defined to include all the OEM.

3rd PARTY TESTING BENEFITS. Radios with 3GPPP specs on one side and O-RAN specs on the other will work with different vendors' baseband. Because there is a defined specification with 3GPPP interfaces, the elements can be tested independently which reduces cost and takes pressure off operators to test in their own labs. Radios can be purchased from any vendor and tested independently by a 3rd party for validation purposes. Radios are now being produced at such low costs that any operator can purchase them and not get locked into a specific system integrator. For example, Telecom Infra Project (TIP) has launched the Evenstar project with radios priced around $1,000 in collaboration with Mavenir, Facebook Connectivity, MTI, Deutsche Telekom and other partners – see related press release from February 25, 2020.

6. WHAT ARE BARRIERS TO ADOPTION OF OPENRAN vRAN?

The operators have been beholden to buying RAN from one vendor which has restricted the ability to modernize without having to rip all the hardware as well. If the interface had been open between the radio and baseband unit, the radio could have stayed in the tower and a tremendous amount of money saved. If the interfaces were open to the radio, another vendor's baseband processing could have been integrated for a better solution rather than ripping out everything. The whole vendor ecosystem has been held hostage to this duopoly. Operators won't improve the economics of their network unless fundamental changes are made in the procurement process to take advantage of these newer technologies.

7. IS OPENRAN VRAN TECHNOLOGY MATURE FOR SCALING AND PERFORMANCE?

OpenRAN vRAN started by virtualizing bare metal platforms. The next step has been to containerize the network. Web-scale platforms will continue to evolve in a cloud-native containerized Kubernetes-style.

8. CAN OPENRAN VRAN SCALE TO COMPETE WITH THE INCUMBENT VENDORS?

The traditional vendors (Huawei, Ericsson and Nokia) will go to great lengths to stop/slow OpenRAN vRAN. Fortunately, the large operators are now requiring OpenRAN compliance in their bids. The new OpenRAN vRAN ecosystem is continuing to expand.

More so in 5G than in 4G, the incumbent traditional vendor radios will deliberately have difficulty achieving integration between different radios and basebands from different vendors. Much work has been done in building new interfaces and validating designs. Chipsets are also starting to become available. Labs are setting themselves up for testing, and O-RAN has proven that the basic technology is sound and ready.

The challenge for any network deployment is delays in the zoning, planning and physical aspects of deployments. Once things are working in a small number of cells from a software perspective, then it is easy to scale and grow across the network.

9. HOW IS THE BAN ON CHINA ESSENTIAL COMMUNICATIONS TECHNOLOGY AFFECTING THE US?

5G deployments are rapidly progressing. The rip and replace of Huawei and ZTE in the US and restrictions and considerations in other countries are presenting an opportunity for US vendors.

10. WHY DO YOU THINK THAT THE LIKES OF ERICSSON AND NOKIA HAVE SO MUCH MINDSHARE AS THE LEADING VIABLE ALTERNATIVES TO HUAWEI?

Nokia and Ericsson are perceived as the safe bet. The result is that operators are left with a monopolistic vendor duopoly delivering closed systems with no option to mix-and-match RAN technology.

11. WHICH ARE THE US ALTERNATIVES THAT ARE BEING IGNORED?

Emerging players with advanced technology solutions that are geared for 5G. Mavenir is one of the alternatives currently being overlooked by the US government, which is still relying on Ericsson and Huawei despite having strong options at home. While Mavenir is the only end-to-end vendor in the US, there are other US companies, niche players such as Altiostar and Parallel Wireless in the mix.

12. HOW ARE THE US ALTERNATIVE VENDORS ABLE TO COMPETE ON COST WITH THE ESTABLISHED LEGACY VENDORS?

Mavenir, Altiostar and Parallel Wireless are focused on bringing OpenRAN technology to market with no overhead. This can be accomplished with far less people at far lower costs to disrupt the marketplace. Operator involvement will determine how fast the technology evolves. As any new technology has proven historically, it will take a few years to roll through deployment cycles in networks around the world.

13. HOW MUCH FUNDING IS NEEDED FOR US VENDORS TO BE SUCCESSFUL IN THE RAN MARKET?

US vendors aren't receiving the support needed from the government unlike other industries such as the energy sector. The US government is still promoting Swedish Ericsson and Finnish Nokia as the alternatives to Huawei. Newer vendors can only scale if given the opportunity.

14. WHAT ABOUT FEDERAL FUNDING?

There are various funding sources being appropriated for telecommunications in the US government. The challenge is how companies like Mavenir can access those funds. There needs to be an effort to focus on US companies.

15. WHAT EFFECT DOES UK GOVERNMENT'S 35% LIMIT, BUT NOT BAN OF HUAWEI IN THE RADIO NETWORK MEAN FOR THE GLOBAL BUSINESS?

The UK government's decision is more about protecting their investments, not just in mobile technology but in the underlying core switching fabric required for 5G. However, there is still pressure from the US government on international partners to use trusted technologies for sharing information.

16. IS THE O-RAN ALLIANCE STANDARDIZING THE INDUSTRY ON INTERFACES AND OPENNESS?

O-RAN is the group fixing the mistakes of 3GPP, which is heavily influenced by the legacy vendors. In terms of the fronthaul group, O-RAN is the team that took down the walled garden around the RAN through one interface spec to change the world from a RAN perspective. All of the other interfaces are essentially through 3GPP.

The other main challenge in the RAN is the X2 interface which allows local handoff between vendors. 3GPP has fully defined that interface, but the incumbent vendors won't open it up and allow it to work. This is a political mandate issue more than a specification issue with those two interfaces. Operators can now mix and match RAN vendors, mix and match RAN technology and take their network to the next step.

O-RAN has also been focused on the radio interface controller (RIC). In a software state, there is more dynamic control of the elements and the scheduler is probably the most important part of the RAN in terms of slicing and scheduling all the traffic onto various data channels. Networks can deploy one scheduler per user and deliver QoS that will never be possible in the hardware-based solutions.

17. CAN O-RAN, 3GPP AND TIP WORK TOGETHER GOING FORWARD?

More cohesion is needed between O-RAN, 3GPP, and the TIP. TIP is aligning with O-RAN and Mavenir is a member and doing projects with both. The question mark is how fast 3GPP can shed incumbent control and become a proper standards forum again.

About Mavenir

Mavenir is building the future of networks and pioneering advanced technology, focusing on the vision of a single, software-based automated network that runs on any cloud. As the industry's only end-to-end, cloud-native network software provider, Mavenir is transforming the way the world connects, accelerating software network transformation for 250+ Communications Service Providers in over 120 countries, which serve more than 50% of the world's subscribers.

For more on Mavenir Solutions please visit our website at www.mavenir.com