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Network operators such as Vodacom, MTN and Rain Mobile are scrambling to pilot the fifth-generation network (5G) in South Africa to usher in the much touted fourth industrial revolution based on technological advancement.

Spectrum for the operation of 5G is expected to be released for use by telecommunication companies early next year, although their ability to access it depends on the migration of analogue to digital TV because analogue TV is inhabiting the required radio frequency space.

The fibre optic cable necessary for a 5G network already exists in South Africa's urban areas, said Vodacom managing executive Nicholas Naidu at the AfricaCom telecommunication and technology conference in Cape Town this week.

Vodacom spokesperson Byron Kennedy added: "We can expect 5G-enabled smartphones to come on the market next year, with government indicating the 5G spectrum should be available in 2020."

However, some speakers at the conference expressed concern that government's regulatory framework needed to catch up to prevent the gap from widening between those who have access to enabling communications technology and those who don't.

This digital divide, which exists on a geographic divide between urban and rural areas, as well as across the economic divide of rich and poor, also needs to be addressed at a regional rather than a national level to prevent further inequality within and between neighbouring states.

Millicom Africa CEO Mohamed Dabbour said that, although 5G was being introduced, 50% of sub-Saharan Africa remained unconnected to the internet.

Dabbour added that regulators and policymakers "lack vision on where we want to take the continent in the next five years".

An example of this lack of vision was provided by Telkom group executive for regulatory affairs and government relations Siyabonga Mahlangu, who pointed out that the predominant monetary system being used in Zimbabwe, the mobile money exchange EcoCash, had no interoperability with South African banks.

"You can't put EcoCash in your bank and use it in South Africa," he said. "We need more coordination between the private and public sectors."

The economic and geographic digital divides due to infrastructure such as base stations or fibre optic cable not being set up in sparsely inhabited areas needed to

5G MAY WIDEN DIGITAL DIVIDE

Introduction of the fifth-generation network will be welcomed by business, but will **increase inequality** if not handled correctly

WIRELESS

What is 5G?

With 5G, fixed wireless can be provided to businesses or homes with broadband speeds as high as 20 gigabytes per second without the need for fibre optic cables being laid. Vodacom is already providing this to two commercial clients in Lesotho.

be addressed through significant investment in infrastructure, said Mahlangu.

However, there was little or no economic incentive for companies to spend money on extending their infrastructure in areas where there would not be enough customers to enable the recovery of capital costs.

But Mahlangu said South Africa had established a Universal Service and Access Fund under the

Electronic Communications Act, which mobile network operators had been contributing to "since day one" and could be used to provide infrastructure in rural areas.

The other issue was the high cost of data for customers who are unable to afford a monthly contract, which is most of them. Vodacom, for instance, has 38.5 million prepaid customers, and the latest Independent Communications Authority of SA report on tariffs for the first half of this year notes a price of between R100 and R150 per gigabyte of data purchased, depending on the network operator.

However, this has been disrupted by newcomer Rain Mobile, which charges 5c per megabyte - R50 per gig.

Kennedy says that, if government allocated more available spectrum, the company would have to build fewer base stations, which would free up capital expenditure to enable lower prices, which he said the company was committed to.

Meanwhile, research shows that pay-as-you-go customers spend 18% of their income on data, said Web Foundation digital equality advocacy manager Nanjira Sambuli.

She said moving on to 5G while government was still trying to get people in the rural areas on to 3G was a recipe for inequality.

"This Silicon Valley approach of move fast and break things does not work. Over here, people are already broken," said Sambuli.

But she was heartened by Telecommunications and Postal Services Minister Siyabonga Cwele's announcement that government was looking at leading the integration of regional policy.

Cwele said his department was busy establishing the African Digital Transformation Centre in conjunction with the Council for Scientific and Industrial Research.

Although it already existed as a virtual centre, he said the department of public works was looking for a building in Pretoria where the centre could have a physical presence.

Cwele said the centre would be involved in standards testing and policy formulation "to prepare us for the fourth industrial revolution".

He said regional integration was necessary and, through the Transform Africa initiative, governments wanted to "ensure lines and networks are talking to each other across the Southern African Development Community", and that African apps would be integrated across borders.