

# Smart cities will depend on faster adoption of 4IR

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If you are not digital it will be very difficult to be competitive in industry, or in the buildings you produce. Because what you are building is here for the next 50 years, and it has to be green, smart and automated.



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This is the opinion of , who further notes that cities are a complex web of interconnected systems, and each city faces its own challenges.

As the World Economic Forum on Africa meets in Cape Town in September for its 28th meeting, it is significant that the theme is ‘Shaping inclusive growth and shared futures in the Fourth Industrial Revolution (4IR)’.

Today’s cities cover only 2% of the planet’s surface but hold 50% of the world’s population. They also generate 80% of the global CO2 emissions and consume 75% of the energy. Urbanisation in South Africa is advancing at much this pace and its city planners have to accept that extremely rapid growth is inevitable. This brings added pressure on the supply of energy, waste, transportation and other services.

## Future technologies now

The key technologies powering Industry 4.0 (4IR), artificial intelligence (AI), mixed reality (AR and VR), and the internet of things (IoT), are reshaping business processes, unlocking opportunities and encouraging new business partnerships.

A rich ecosystem of tools, organisations and experts is paving the way to a healthier workplace, efficient businesses and a greener planet. Making the most of these new technologies requires openness, agility, collaboration and a clear understanding of the benefits that digital transformation will bring.

At present, those in charge of running cities, particularly at the operational level, are too focused on reducing costs, rather than on improving quality of life or service. We need to widen our vision, and see the potential of smart cities built on the latest technologies.

As urbanisation increases, cities and suburbs will undergo significant transformations to create sustainable living conditions for their residents. Energy and mobility are the twin pillars of these transformations and both will require radical adaptation to meet the demographic and economic growth, without increasing congestion and pollution.

The question is whether policymakers and business leaders can harness and combine them in ways that maximise their benefits for environment and create greater efficiency and economic growth. The 4IR offers an unprecedented opportunity to do so.

## **Mobility is changing**

Africa is urbanising faster than any other continent, at a rate of 4% every year, compared to the global average of 2%. Its rapidly growing urban population continues to strain the transport and energy infrastructure. Electric vehicles (EV) can materially change this landscape through ride sharing and car sharing, concepts that could reduce the congestion in rapidly growing African cities.

South Africa will host the Electric Vehicle Road Trip Africa (EVRT Africa) for the first time in October 2019, an indication of the interest that EV is generating.

As EV become more affordable, some are predicting that they will constitute almost a third of new-car sales by the end of the next decade. Ride sharing continues to surge, with estimates that by 2030, it will account for more than 25% of all distances driven globally, up from 4% today. These changes are just the first hints of what is to come, as we will soon see autonomous vehicles (AV) and commercial fleets of EVs integrated as parts of everyday life. In the future, AVs will also cost significantly less per kilometre than vehicles with internal combustion engines for personal-use, by as much as 40%, and could also reduce congestion and traffic incidents.

## **Energy is changing**

We are amid a global evolution toward energy systems that are cleaner and increasingly decentralised, with energy generated, stored, and distributed closer to the final customers, with renewables and storage technologies. At the same time, digitalisation will allow customers and electricity system operators to control where, when and how electricity is being used and allow new business models to emerge. Finally, new and more energy uses are going to be electrified — mobility being one of the critical ones.

These trends have the potential to reinforce each other and actively contribute to make our cities smarter. Forward-thinking business leaders and policymakers must act now to lay the foundation for sustainable innovation in urban environments, able to capture and combine these new trends. On both fronts, the convergence of energy and mobility must be strategic, intentional and guided, if cities and citizens are to receive the maximum benefits.

Our innovative, IoT-enabled operating technologies help make cities more efficient, resilient and sustainable. Industry 4.0 and the industrial internet of things (IIOT) present new opportunities to unlock process innovations to develop sustainable,

environmentally friendly materials; decarbonise energy; tap digital innovation for doing more with less; and extend the life cycle of goods within a 'zero waste to landfill' framework, using the 5Rs approach - repair, reuse, refurbish, remanufacture and recycle.

## ABOUT THE AUTHOR

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