

IoT turns infrastructure into hubs of innovation

Cities turn to connected infrastructure to transform urban centres

Organisations in the Middle East, both public and private, are turning to internet of things to streamline business processes, save costs and provide superior customer service.

Gartner forecasts that the enterprise and automotive internet of things (IoT) market will grow to 5.8 billion endpoints in 2020, a 21% increase from 2019. By the end of 2019, 4.8 billion endpoints are expected to be in use, up 21.5% from 2018.

Major IT vendors are waking up to the IoT opportunity.

WebNMS, a division of Zoho, provides IoT solutions for smart cities and facilities and energy management.

WebNMS foray into IoT was a natural progression from its network management legacy, which involved managing connected IP-based systems. Eventually, the ecosystem shifted into connected things, leading WebNMS' parent company Zoho to produce solutions to operate the connected machine to machine systems, explains Karen Ravindranath, director, WebNMS.

One of WebNMS's major regional deployments was an IoT smart lighting project that helped Muscat in Oman reduce OpEx by 40% thanks to centralised control and automation of its city street lighting infrastructure.

SMART LIGHTING

The project comprised an urban lighting network consisting of 2090 lighting poles managed using the WebNMS Smart Lighting Solution.

The city manages an expansive street lighting infrastructure, distributed across a wide geographic region. Previ-

ously, switching lights on and off was controlled through an electronic/mechanical timer setting in the switching panel. However, there was no provision for managing and monitoring the entire lighting network centrally. Resetting the schedule, if and when required, involved manual intervention at each panel.

With the WebNMS platform, the municipality has been able to centralise the control of the entire lighting infrastructure at its control centre. Engineers can also identify and pinpoint malfunction or failure in luminaries and feeder panels via a central interface.

"The entire process is automated and the schedules are set a year ahead. Those commands are automatically pushed to the feeder panel so nobody needs to visit a feeder panel," Ravindranath says.

During the consultation for the project, the company and its partners could easily define the ROI based on projected energy usage. The smart lighting system also led to reduced energy costs through need-based lighting. "We were also able to increase the lifespan of luminaries and reduce operational costs by unifying visibility and control. Before that, operation teams had to visit a location to identify a malfunction physically. Now they can pinpoint the exact point of failure problem from the control room," explains Ravindranath.

WebNMS has further invested in IoT solutions for utilities for water management. Water is a very precious commodity in this region, and the company provides products deployed at pumping stations to control the flow and analyse the water pumping system. The company also offers smart energy metering solutions.



According to Gartner, utilities will be the highest user of IoT endpoints, totaling 1.17 billion endpoints in 2019, and increasing by 17% in 2020 to reach 1.37 billion endpoints.

"Electricity smart metering, both residential and commercial will boost the adoption of IoT among utilities," says Peter Middleton, senior research director at Gartner. "Physical security, where building intruder detection and indoor surveillance use cases will drive volume, will be the second-largest user of IoT endpoints in 2020."

CONNECTED CARS

According to the research firm, the two use cases that will produce the most endpoint electronics revenue in 2020 will be consumer connected cars and networkable printing and photocopying, totalling \$72 billion and \$38 billion, respectively. Connected vehicles will



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↑ It is easy to replicate existing use cases, with a proven ROI, to other cities, says Ravindranath.

retain a significant portion of the total endpoint electronics spending resulting from increasing electronics complexity and manufacturers implementing connectivity in a higher percentage of their vehicle production moving forward.

While printers and photocopiers will contribute significant expenditure in 2020, the market will decline slowly and other use cases such as indoor surveillance will rise as governments focus on public safety.

With bandwidth very expensive, it makes economic sense to push as much compute capabilities to the edge. “We provide a computing agent that sits very close to the edge. “The WebNMS agent has analytics capabilities and can take certain corrective actions at the edge based on already predetermined models or rules. Only the data that has to go to the datacentre is transferred. And because we can store data at the edge, an unfortunate incident such as loss of connectivity will not result in loss of data,” Ravindranath explains.

“From the control server, we can send commands to the edge and execute certain control actions to the equipment,” she adds.

Other cities in the region and beyond are pursuing smart city strategies. “We can replicate the Oman use case, with a proven ROI, to other cities in the region,” Ravindranath says.

IoT endpoint market by segment, 2018-2020, worldwide (installed base, billions of units)

Segment	2018	2019	2020
Utilities	0.98	1.17	1.37
Government	0.40	0.53	0.70
Building Automation	0.23	0.31	0.44
Physical Security	0.83	0.95	1.09
Manufacturing & Natural Resources	0.33	0.40	0.49
Automotive	0.27	0.36	0.47
Healthcare Providers	0.21	0.28	0.36
Retail & Wholesale Trade	0.29	0.36	0.44
Information	0.37	0.37	0.37
Transportation	0.06	0.07	0.08
Total	3.96	4.81	5.81