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Supporting Global Data Centres and AI innovations Through Third-party Optics

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Across the world, organisations across all sectors are beginning to develop the necessary structures and processes to gain operational benefits from Artificial Intelligence (AI). Within the United States, for example, investments into AI totalled approximately 67 billion USD in 2024, in 2024, driven by businesses looking to harness the long-term potential of the technology.

Beyond the States, many regions have begun to stake their claim to sit at the forefront of AI developments. An AI-driven future is now on the horizon, with the technology set to inject an estimated 15.7 trillion USD into the global economy by 2030. The Middle East is set to be one such player, with AI likely to contribute around 320 billion USD to its economy by the same year. Significant investments have already been made into new initiatives and projects designed to diversify economies away from the region's oil and gas assets, and the impact is already starting to be felt in several countries.

Setting the scene in the Middle East

The United Arab Emirates (UAE) is expected to see the biggest boost within the region, with AI expected to account for 14 percent of its GDP by 2030. Though Saudi Arabia and Qatar are not too far behind. Government mandates for greater diversification have led to innovative programs and initiatives at both the Kingdom and city levels.

This includes the UAE's 'National AI Strategy' and a 13 billion United Arab Emirates Dirham (AED) investment to make the country the first to become AI-native by 2031. At a basic level, the strategy aims to transform the UAE into a world leader by investing in people and industries where AI can have the greatest impact, including healthcare, education, and governmental development. The UAE AI and Blockchain Council will oversee the implementation of the strategy and its eight objectives, which encompass everything from effective regulation and leading research capabilities to increasing the UAE's competitive assets in priority sectors through AI deployment.

Saudi Arabia's 'Vision 2030' is another initiative demonstrating the region's commitment to AI adoption and innovation. Led by the Saudi Data and Artificial Intelligence Authority (SDAIA) and focusing on building a knowledge-based economy through the use of AI and emerging technologies, approximately 100 billion USD was allocated in November 2024 to develop data centres, startups, training, and partnerships with leading tech companies.

The state of play in the UK

Within Europe, one country that has started to recognise AI for its potential is the United Kingdom. In 2023, the International Monetary Fund (IMF) estimated that the use of AI could add a potential 47 billion Pound Sterling (GBP) to the UK economy each year over the next decade. Now - detailed for the first time in January 2025 - the government has launched an 'AI Opportunities Action Plan' to enhance and revitalise public services across the country.

Similar to what we're seeing in the Middle East, one of the key aims of the plan is to increase the amount of investment from AI firms through 'AI Growth Zones'. These zones will quicken planning proposals and deliver new infrastructure key to supporting AI technologies, and will be underpinned by a public compute capacity twenty times the power it is currently, thanks to a new supercomputer under development. Also included within the plan will be the creation of a new National Data Library to unlock the value of public data safely, and an AI Energy Council that will work alongside energy companies to better grasp the requirements for optimal and sustainable AI resources.

The announcement follows a range of major investments into the country, including a landmark 14 billion GBP joint injection from Vantage Data Centres, Nscale, and Kyndryl in order to build the necessary infrastructure to maximise the use of AI. Vantage Data Centres, which already operates Europe's largest data centre campus, has invested an additional £12 billion in new facilities across the UK. Nscale has also demonstrated their dedication to advancing the UK, signing a contract to build the UK's largest sovereign AI data centre in Essex, England by the end of next year.

To develop a baseline of AI experts, Kyndryl has also outlined plans to generate 1000 new jobs in Liverpool over the next three years, creating a hub that can drive AI rollouts beyond the city and across the country.

The impact on data centres

Such significant investment in both the Middle East and the United Kingdom has fuelled a number of key trends within the data centre sector. The increasing desire for low-latency services and real-time data analysis has resulted in smaller, decentralised data centres rather than large-scale facilities. By taking a decentralised approach, operators can instead place facilities closer to key urban areas and ongoing projects, ensuring there is a reduced risk of data loss as data and resources are hosted across multiple regions, while avoiding performance bottlenecks. This focus on the edge has helped critical industries to overcome growing bandwidth and capacity demands.

In addition to edge computing, enterprises are increasingly migrating their workloads to the cloud, as global hyperscalers wake up to the benefits of AI within this sector. Widescale adoption will increase the commonality and efficiency of automated tasks, helping operators to maximise their existing resources and benefit from data-driven insights for more informed decision-making. These tools are pivotal for businesses to grow at scale and take their place in this new AI-led era.

We are also seeing many regulations introduced in the Middle East, which have prioritised the local storage and processing of data, in response to the growing economic protectionism seen in the region. This, in turn, is bolstering decentralised infrastructure within each Kingdom and country found there, prompting data centre operators to carry out regional facility expansions to comply with these regulations. It will be interesting to see if countries like the United Kingdom and those found across Europe will follow suit.

The role of third-party optics

It should be obvious that these investments and initiatives will lead to long-term benefits for each beneficiary. Yet, in the short term, it has led to significant pressure on today's data centre infrastructure.

Within the UAE and Saudi Arabia alone, data centre capacity has doubled in the last four years and is expected to quadruple over the next four. Regarding the UK, 85 percent of operators have reported growing demands linked to the use of AI, with 87 percent expecting further acceleration in 2025. expecting further acceleration in 2025. AI services have already begun to outpace current supply, and this issue will only be compounded once hyperscale operations are dialled up in the coming years.

As demands for AI-powered services intensify, there will also be mounting pressure on operators to deploy faster and more efficiently. Finding the right transceivers and other optical components to use within data centres and support these services is critical for operations. So, when it comes to procuring these transceivers, the automatic choice for businesses may be to turn to the Network Equipment Manufacturers (NEMs) already well-established in the sector.

However, there may be more suitable options when it comes to building effective infrastructure. For example, there are third-party suppliers who are supplying compatible optical solutions offering the same level of performance as those offered by NEMs, but at a fraction of the price. This makes them a viable option for data centre operators looking to develop multiple localised sites in a short space of time.

Choosing third-party optics means these businesses can use different vendors and component types within their networks, with all solutions adhering to the latest technical specifications. Performance is guaranteed as some suppliers carry out 100% testing to ensure these components work as they should in the latest NEM switches and can be simply plugged into a network once the component arrives. As a result, third-party components are interoperable with some of the major platforms used across the Middle East and the United Kingdom, including Nvidia, Arista, and Juniper.

Enabling an AI-led future

The market is constantly evolving, but the third-party suppliers have adapted alongside it. Transceivers range from 400G solutions for the seamless integration of components into modern hyperscale networks – helping to ease the growing pressure – while 800G components offer the ultra- fast speeds required for complex AI workloads. It's clear that third-party components have a vital role to play when it comes to the overhauling of infrastructure required in the Middle East and Europe. If AI is to continue reshaping and advancing different elements of society, then getting the infrastructure right should be top of the list. NEM solutions will be key, but combining these with third-party offerings is the right path towards future- ready networks.