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Vice President, R&D and Innovation, Digital & Technology of Sembcorp.
Challenge

Based in Singapore, Sembcorp is a leading multinational utility, marine and urban development group and is one of the largest solar players in the country. It has 2,600 megawatts of wind and solar projects across China and India. In early 2019, the company unveiled its new Climate Change Strategy and outlined ambitious targets to double its global renewables portfolio by 2022.

Managing digital assets and related data is a business-critical function for Sembcorp, one that requires participation of the business ecosystem. The company sought to deploy blockchain technology to accomplish this.

There were three requirements for the digital asset management project: security, performance, and scalability. Sembcorp’s customers had to fully trust in the accuracy of data, or the project would not be a useful. The system had to be capable of processing thousands of transactions per second – at large scale and without a delay. Additionally, the architecture had to be flexible, scalable and capable of handling 50 years’ worth of data.

To achieve this, Sembcorp needed a partner they trusted that had proven expertise across multiple technology dimensions, including IoT, Security and Blockchain. Their long-standing relationship with Cisco and Certis Technology led them to initiate discussions with Sembcorp about what was possible. Cisco’s deep bench of industry leading Internet of Things (IoT), Identity, Security & Cryptography engineering experts made them a natural fit.

“Cisco views blockchain as the technology platform to enable trust and further expand digitalization momentum said Bee Kheng Tay of Cisco. “Our architecture is based on simplicity, security, and scalability with a focus on the future to ensure that the distributed business networks our customers build today support them well into the future. Co-creating a solution with Sembcorp using design thinking was a highly rewarding experience. The forward-thinking Sembcorp leadership team sparked the development of a transformative solution that has applications well beyond energy including Smart Cities and transportation.”
Case study

Solution

As enterprises add blockchain to their existing technology portfolio, the need for a solution that will easily integrate with the current systems is crucial, and this is why Cisco focused on providing simplicity in the integration. As one of the world’s leading security experts, Cisco built blockchain to ensure security beyond cryptography and include fine grain privacy and confidentiality capability extending to each participant’s role in the application. High-availability distributed systems and architecture with sophisticated software developer kits ensured enterprise-grade scale and throughput.

“When you are creating a new use-case for technology, and you want to do so quickly, you assume there will be course corrections and requirements will evolve during development,” said Vice President, R&D and Innovation, Digital & Technology of Sembcorp. “We assigned our best and brightest technical people, but we needed to engage a vendor with a proven track record that would be a true partner. While we needed outside expertise, this effort had to be a collaboration. That is why we brought in Cisco Customer Experience experts and engineering. They assembled a team that could advise us and help with implementation including expert blockchain engineers.”

Results

Because this was a greenfield application, the project parameters evolved as development progressed. Relying on design thinking and working in a truly collaborative model with Sembcorp, Cisco was able to course-correct and address the evolving needs of the client while creating the solution. The proof of concept delivered to Sembcorp includes roles-based permissions and work streams for three key audiences; administrators who need to be able to upload data and create assets, users who will trade assets and auditors to ensure accuracy. Utilising its 3-step process to bootstrap new blockchain networks and leveraging best-in-class security capabilities to protect businesses applications, Cisco delivered fully functional proof of concept to Sembcorp.

Products and Services

- IoT Gateways
- AS Services