

# REPORT REPRINT

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## Raritan powers ahead on smart datacenter plans, with help from Legrand

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The power distribution equipment maker has added more intelligence to its PDUs and developed integrated products with its new parent.

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Raritan, a datacenter power distribution specialist, has updated its portfolio of intelligent PDUs with additional features to improve efficiency and resiliency. This includes the development of Xerus – standardized firmware and hardware components for use across its products.

There has also been some progress on its integration into parent company Legrand, which acquired Raritan (minus its datacenter infrastructure management software business) in 2015. For example, Raritan has worked with other business units within Legrand to develop an intelligent datacenter cabinet prototype (with use cases for edge compute) designed to show off the breadth of Legrand's datacenter technologies. Further alignment between Legrand's datacenter lines of business and more integrated products is planned.

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## THE 451 TAKE

Raritan appeared to lose some of its innovative edge when its acquisition by Legrand led to the spinoff of its DCIM business. And while being part of a larger group can generate synergies, it can also impede agility and innovation. Raritan, however, is continuing to add new features to its power equipment portfolio, and its Xerus platform shows that it is thinking strategically about product development. Raritan should also benefit from initiatives, such as the Intelligent Cabinet, that leverage the breadth of datacenter technologies that Legrand has acquired recently. However, Raritan's traditional core KVM faces long-term disruption, and it will also need to respond to a decline in overall enterprise datacenter capacity (offset to some degree by increasing demand from commercial operators). Raritan may also need to adapt to nascent but potentially disruptive technologies such as software-defined power.

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## CONTEXT

Raritan was founded in 1985 as a provider of KVM devices that enable administrators to remotely access multiple rack-mounted servers. It is based in Somerset, New Jersey, and has about 400 employees with offices in North America, Europe and Asia. Its products are sold and supported in more than 76 countries, and installed in over 50,000 datacenters. Raritan subsequently expanded its technology portfolio to include products for infrastructure, power management and, more recently, DCIM (which it eventually spun off).

Roughly 80% of Raritan's sales are into enterprise datacenters. Most colocation sales are into wholesale sites rather than retail. Amid strong competition, sales into hyperscale companies are still low. Raritan says some continue to favor standard/commodity PDUs rather than intelligent devices, or else have adopted alternative Open Compute Project (OCP) rack designs.

## INTEGRATION INTO LEGRAND

In Q3 2015, Raritan sold its equipment business (for an undisclosed sum) to the North American subsidiary of France-based electrical equipment specialist Legrand, and spun off its DCIM technology to an independent company called Sunbird Software.

Legrand NA, the largest international division, principally acquired Raritan to add power distribution into its portfolio. It also wanted to get access to a number of specific Raritan customers. Legrand specializes in electrical and digital building infrastructures and has a wide portfolio of wire management, wiring devices and cable management offerings for the datacenter, commercial, industrial and residential sectors.

Legrand NA also has a data communications business, Legrand Data Communications, which is headquartered in New London, Connecticut – bringing together a range of critical facilities products and services from product groups Ortronics, Quiktron and Wiremold.

Raritan is in a separate unit called Power Distribution and Control for Datacenters, but cooperates closely with the Data Communications group (on projects such as the Intelligent Cabinet – see below). Legrand NA also acquired New York-based AFCO Systems in Q2 2017 for its datacenter rack and containment products.

There is some alignment of sales team between Raritan and Legrand in France and the UK with the creation of a strategic datacenter business unit in those markets, combining PDU and other datacenter products and services. Netherlands-based Minkels is also part of the Legrand group (acquired in 2012 through the purchase of its parent company Aegide), and sells a range of datacenter products including racks and cabinets, row-based cooling and micro-datacenters.

Globally, Legrand reported sales of over €5.0bn (\$5.6bn) in 2016, and it has close to 36,000 employees globally. It is made up of seven business units including energy distribution, building systems, UPS and digital infrastructure. More than 40% of its sales were in North America followed by Europe (29%) and the rest of the world (26%). It has acquired 12 companies since January 2016, including three European suppliers of UPS products (Borri and Primetech in Italy, and Fluxpower in Germany).

## TECHNOLOGY

In Q1 2017, Raritan updated its range of PX iPDUs that include inlet and outlet metering and switching. The update is based around its new iX7 controller – the brain of the PDU – based on an ARM Cortex A5 chip that has sufficient compute headroom for future features and capabilities. New features included in the iX7 range include:

- Gigabit Ethernet as standard to allow for future network upgrades without the need to replace PDUs.
- The iX7 controllers are also hot swappable in case of faults (Raritan says this is a requirement based on some customers' experience of rival products that have a significantly higher failure rate).
- Another new feature called Power Share is designed to improve uptime and availability. If one power feed to a cabinet fails then the controller on that PDU normally goes down. Losing communication with the PDU means that operators may not know whether the fault lies with the PDU, or the rack power supply, or some other cause. But using Power Share, the A and B feed PDUs are connected, and the controllers can share power. In the event of an outage in one feed, the affected controller can still communicate (via alerts), which should enable the outage to be solved more quickly.
- A secondary networking port on the iX7 enables a secondary network to be connected; for example, a colocation customer could allow its provider to access its PDUs for power monitoring and management on a separate network without giving access to its main local area network.
- The iX7 also enables multiple PDUs (up to eight devices) to be cascaded or daisy-chained together (via USB ports or Ethernet). This enables one IP address to be created for the whole chain, which can help reduce IP connectivity costs – significant for large facilities. Raritan estimates customers can save between \$300 and \$500 per IP connection that is not required.
- It has also developed a new user interface for direct access to PDUs (rather than via PowerIQ) using HTML5. It allows users to access information such as historical power usage.

Raritan has developed a technology platform (firmware and custom hardware components) across its product range that it calls Xerus. It combines Raritan's mechanical/electrical design and fabrication (electrical components, safety methodology) expertise with its embedded system design (custom microprocessor/PCB design, custom Linux OS).

The Xerus system, introduced as a specific concept in 2017, is designed to provide a common development platform across Raritan's portfolio. Xerus could eventually be extended across other Legrand power products.

Raritan says the interoperable/open firmware in its Xerus platform enables easier data exchange between its PDUs and third-party DCIM and building management system (BMS) platforms. For example, customers can send custom commands to its PX PDUs via most types of BMS. Customers can also create custom scripts for specific activities such as maintenance. Raritan provides a software development kit based on the JSON-RPC remote procedure protocol.

Despite the spinoff, Raritan says it maintains a close relationship with Sunbird, and there is some cooperation around new features. For example, the two companies are cooperating around security and access, with Sunbird being able to authenticate users (via a smart card) through its software for a new intelligent door lock that Raritan plans to release later in 2017. The company also resells PowerIQ, Sunbird's monitoring software, and considers it to be an integral part of its portfolio.

Raritan has a range of plug-and-play sensors for environmental monitoring (temperature, air flow and humidity) and asset management (strips and tags). The EMX smart controller unit allows for instrumentation without having PDUs in place.

Raritan released a branch circuit (and busway) monitoring system in late 2015, which it describes as its first foray outside the cabinet. The BCM product runs on the same firmware as its PDUs, so customers get a common experience. PowerIQ can also be integrated via a common approach to SNMP. For colocation providers, the BCM also has billing-grade accuracy for power monitoring of customer equipment. The data is also remotely accessible via a web-based interface.

## INNOVATION AND ROADMAP

In Q4 2016, Raritan and Legrand introduced a prototype Intelligent Cabinet concept design. Legrand refers to the cabinet as equivalent to a 'concept car' – designed to show off all of the technologies it has across the datacenter.

Raritan provided the PDU, asset management and rack-door lock and control of the cabinet, as well as management of its UPS. The plan is to use the concept to get specific customer feedback on what components are of most interest for future development. Features include:

- An embedded controller to provide the intelligence to the cabinet, which also has its own IP address.
- The iPDUs meter at the outlet level, which can turn off power remotely.
- It has a UPS backup system, environmental sensors, asset management, intelligent lighting and DCIM software (from Sunbird).
- In the event of a security breach, the cabinet will activate cameras to capture images of the unauthorized intruder, and send the images to centralized IT staff.

The Intelligent Cabinet could also be deployed as a stand-alone edge datacenter according to Raritan (the cabinet doesn't have integrated cooling, but Legrand partners with rear-door heat exchange specialist OptiCool to offer an integrated system). Legrand subsidiary Minkels sells a range of row-based DX and chilled-water systems, but seems to be pursuing a separate micro-datacenter strategy via its own product range.

Raritan is monitoring developments around OCP and Open19. Many of its customers have gone through some evaluation of OCP technology, but adoption is still fairly low. It views Open19 as the more customer-friendly (and crucially, vendor-friendly) of the two approaches. It currently has a client engaged with Open19 and is looking at ways to become more involved in the initiative directly.

Legrand is investing in future platforms – between 4% and 5% of its revenue goes to R&D. It says about 2,000 staff are involved in development projects including 750 that are working directly on digital technology (electronics and software). One of its flagship programs is known as ELIOT – combining Electricity and IoT – and is designed to improve connectivity and intelligence for buildings including applications such as smart lighting.

## COMPETITION

Raritan competes with other makers of intelligent power equipment including Austin Hughes, Eaton, Geist, Rittal, Schneider Electric and Server Technology (Servertech). Some of these are supplying heavily into cloud hyperscale and other datacenters.

Raritan's core KVM business faces increased competition from alternative firmware and software approaches. For example, Intel offers a 'soft KVM' gateway. Intel's Data Center Manager offering, which provides the ability to manage servers using in-server data and controls, also competes – to a point – with Raritan's KVM products.

## SWOT ANALYSIS

### STRENGTHS

Raritan has a strong pedigree in power distribution and KVM, and is developing new features to ensure its products are future-proofed. There are also opportunities to create greater synergies across the Legrand group.

### WEAKNESSES

While parent company Legrand is working to remedy the situation, larger equipment rivals have more cohesive datacenter portfolios that may appeal to larger customers looking for integrated products and services.

### OPPORTUNITIES

Demand for datacenter PDUs will continue to increase. As more datacenters become built for purpose, the demand for innovative as well as customized PDU designs will also grow.

### THREATS

A significant proportion of Raritan's customers are enterprise datacenters that are slowly declining as an overall percentage of datacenter capacity. Some hyperscalers favor commodified or specialized (OCP, Open19) approaches to rack power distribution. Approaches such as software-defined power could be an opportunity but also a threat.