

## With great power comes great responsibility

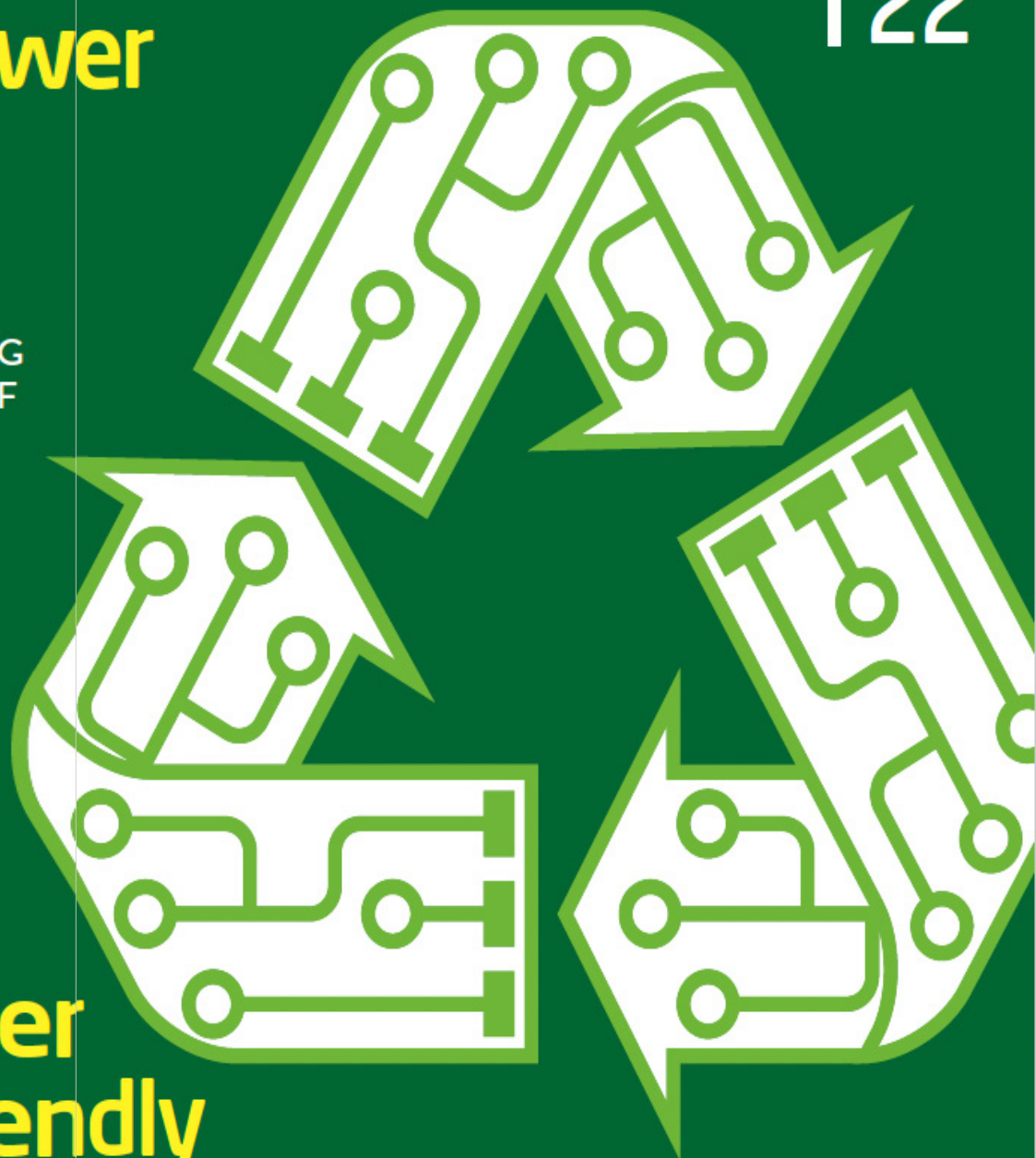
IS THE DATA CENTRE SECTOR DOING ENOUGH TO ETHICALLY DISPOSE OF WASTE ELECTRONIC EQUIPMENT?

## Boxing match

WHY ENCLOSURES, RACKS AND CABINETS ARE A FUNDAMENTAL COMPONENT OF DATA CENTRE TRANSFORMATION

## User friendly

DESIGNING INTELLIGENT BUILDINGS THAT FOCUS ON THEIR OCCUPANTS



# Unsung heroes

Jon Barker of Chatsworth Products (CPI) explains why enclosures, racks and cabinets form the foundation of white space infrastructure and serve as the starting point for any data centre

In an interconnected world, where organisations use a mix of enterprise owned and cloud based services, managing assets and white space remotely has become increasingly important. That process begins with a focus on the data centre cabinet and gaining an understanding of how the subsystems in the cabinet form an ecosystem to support information and communications technology (ICT).

## SELECTION PROCEDURE

Whether you want a bright, spacious and functional data centre that enables quick and organised moves, adds and changes (MACs), or a high tech room that aims to occupy as much or as little physical footprint as possible to maximise utilisation, it's important to zero in on the main purpose and fully understand your application needs and goals when selecting your IT cabinet solution.

In the data centre, a power and cabinet ecosystem is the integration of hardware – the cabinet and anything inside or connected to the cabinet – and any software that specifically supports or enhances the hardware's functionality. When this combined infrastructure is provided by a single manufacturer the ecosystem thrives, allowing you to make more informed decisions more quickly on the path to achieving total data centre optimisation.

A highly configurable, high density

cabinet provides future readiness, speed of deployment and allows for optimal use of floorspace. With the ability to configure and customise cabinets to fit your specific application, you'll also be able to address critical concerns such as:

- **Effective and efficient power distribution**

Rackmount power distribution units (PDUs) are a well-established solution for distributing power into equipment racks. Advanced, power hungry equipment requires robust PDU functionalities that allow monitoring and control of power down to the outlet level, helping IT professionals maximise efficiency.

PDUs can be used in high density cabinets full of 1U or 2U rack servers,

or a few server chassis or networking switches. Intelligent PDUs further help prevent equipment failures and empower IT professionals to properly prepare for maintenance operations without disturbing system uptime.

- **Control airflow management**

Reducing data centre cooling costs is a priority. An effective thermal management strategy that utilises practical concepts like passive cooling allows the data centre

and recycle hot or cold exhaust air into or out of equipment. Airflow containment offers significant return on investment and as much as 50 per cent in energy savings.

Within the cabinet it is important to have a front/rear barrier so that cold air flows through equipment, but hot air does not circulate around. Within the room it is important to isolate hot air and give it a path to return to the air handlers. Solutions mount on the top of cabinets and guide hot exhaust air from the enclosure to

an overhead drop ceiling or ductwork to create a closed hot air return pathway to the cooling system.

- **Flexible organisation of cable management**

Because cabling is the backbone of any network, a large part of the equation is the level of network performance offered by the cable management structure you

select. This is especially true when you consider that

cable management can enable – or just as easily inhibit if not done correctly – everything from the signal integrity of a single cable to the overall performance of a large data centre.



cabinet to support high density equipment, while promoting better energy efficiency and lowering costs.

By implementing an airflow containment strategy, it's possible to isolate, redirect

‘Reducing data centre cooling costs is a priority. An effective thermal management strategy that utilises practical concepts like passive cooling allows the data centre cabinet to support high density equipment, while promoting better energy efficiency and lower costs.’

For the best cable performance, specify continuous support for cable including vertical and horizontal cable managers and overhead cable runway. Whenever cable changes direction, data centre managers should specify support that creates a wide turn for cable to follow. It is recommended to bundle cables with wide reusable straps and use cable spools to control patch cord slack within cable managers.

Also, it is recommended to select cable managers that are large enough to maintain cable bend radius when cables enter/exit the managers. Using 50 per cent fill as selection criteria for vertical and horizontal managers is a simple way to do this.

### FUNCTIONAL CABINETS

As organisations place their assets into data centres, IT managers are being tasked with delivering increasing levels of performance, while still retaining optimal efficiency levels, and must work hard to cut costs and meet demanding deadlines. Innovative, functional cabinets do not have the same level of sophistication as high density cabinets but data centre managers will still need to take aesthetics and performance into consideration when selecting the most appropriate data centre cabinet.

Cabinets with a simplified design and fewer technical features will continue



to address the requirements of modern data centre requirement including:

- Allowing for scalability and network upgrades
- Managing and protecting cabling and equipment in a simple but affordable way
- Providing open rack accessibility with cabinet security
- Delivering thermal management to ensure uptime

### SINGLE MINDED

No matter what situational environment data centre managers are planning to kit out, whether functional or high density, it's wise to consider a single supplier that can design, manufacture and deliver a complete ecosystem solution for an expertly designed, ideal mix of configurability, future proof strength and robust features. This will allow for maximum space utilisation and equipment support.

In addition to satisfying all the technical product requirements, working with a manufacturer that provides a fully integrated solution is key. This kind of manufacturer can help ensure fast delivery, easy sourcing, customisation and pre- and post-sale services that enable and make good on the promise of a complete ecosystem approach.

### PATH TO ENLIGHTENMENT

An effective power and cabinet ecosystem will provide you with a simplified path to white space management, allowing you to consistently manage, monitor, power, protect, optimise, support, control, organise and simplify your operations. ■



### JON BARKER

Jon Barker is CPI's technical manager for Europe. He has over 25 years' experience in the engineering industry, with 15 years specialising in data centre infrastructure. As technical manager, Barker serves as a technical contact, accountable for resolving pre- and post-sales technical support questions and issues, and provides support to CPI's sales team by delivering product and technology based presentations to customers, channel partners and industry event audiences.