

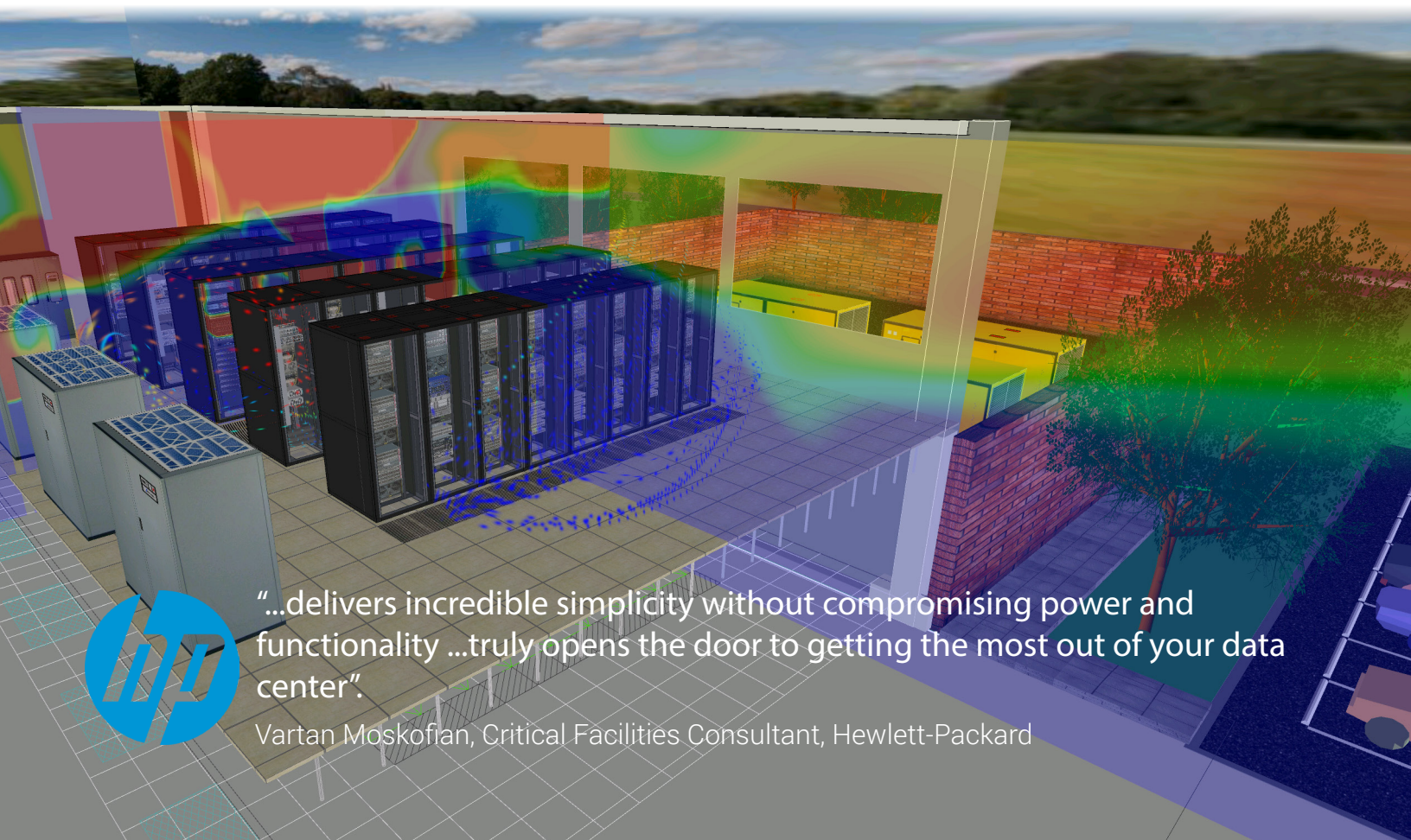
6SigmaDCX:

Delivering the Fluid Data Center

The data center should be as fluid as the business it serves, but how do you ensure that is the case in design, troubleshooting and operation?

6SigmaDCX was developed to allow **designers** to create data centers that more readily accommodate change over the course of their lifetime, and for **consultants** and **owner-operators** to think inside the box, innovating and exploiting new technology in the data center as demands on the business grow. And **hardware vendors** use it to design world-class products, reduce physical prototyping, sell their designs to customers, and cut time to market.

Combining ease of use, automation, intelligence, power, and connectivity with your existing workflows and tool sets (including DCIM), 6SigmaDCX will empower you to deliver the **Fluid Data Center** - balance risk and over-engineering in complete confidence, whether the data center is cloud, co-location or enterprise.



"...delivers incredible simplicity without compromising power and functionality ...truly opens the door to getting the most out of your data center".

Vartan Moskofian, Critical Facilities Consultant, Hewlett-Packard

Design for Change: Take the risk out of innovative DC design.

Create Room to Breathe: Answer the what-if questions of DC operation.

Think Inside the Box: Innovate and exploit tomorrow's DC technology.

6SigmaDCX is a unique, multi-dimensional tool used from conceptual planning all the way through to operations. Modular in composition, the suite allows you to scale both up and down, according to the needs of your data centers and your business.

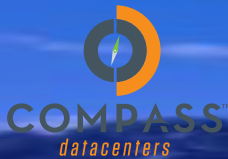
DCX uses a virtual model of the data center and external infrastructure (chillers, generators, cooling towers) to calculate air temperatures, speeds and pressures both in the white space and outside it. We call this *engineering simulation*.

It enables designers to innovate with confidence and to ensure that the IT design will work with the infrastructure design. It enables infrastructure and IT design teams to collaborate seamlessly.

Meanwhile, it gives troubleshooters and owner-operators a risk-free environment in which to identify and test fixes before making them in the real-life facility.

Because DCX's white space modeling potential is unparalleled (it includes your power network), and because its external modeling capability is unique, you can also model your data center's exterior and outside equipment, simulate contamination, test adiabatic cooling systems and much more.

Add to that the ability to create transient simulations - *how much thermal mass do those chillers have to offer?* - and DCX is the most complete engineering simulation suite ever developed specifically for the DC industry.



"6SigmaDCX made my modeling so much easier. I created the model of a Compass data center in less than an hour".

Jose Ruiz, Director, Engineering, Compass Datacenters



Intelligent

One of the many virtues of DCX is its intelligence. We keep it simple for you by giving you intelligent objects that know what they are and how they behave. In other words, the software works for you, not the other way around.

Connected

A successful design relies on you being connected across multiple design tools and teams at any given time. We've broken down the barriers by seamlessly integrating with AutoCAD, spreadsheets, Visio, and the leading DCIM tools.

Our extensive libraries contain thousands of unique models of vendor-specific CRACs, cabinets, PDUs, floor grilles, and IT equipment. If that's not enough, you can create your own custom models and share them across multiple teams.

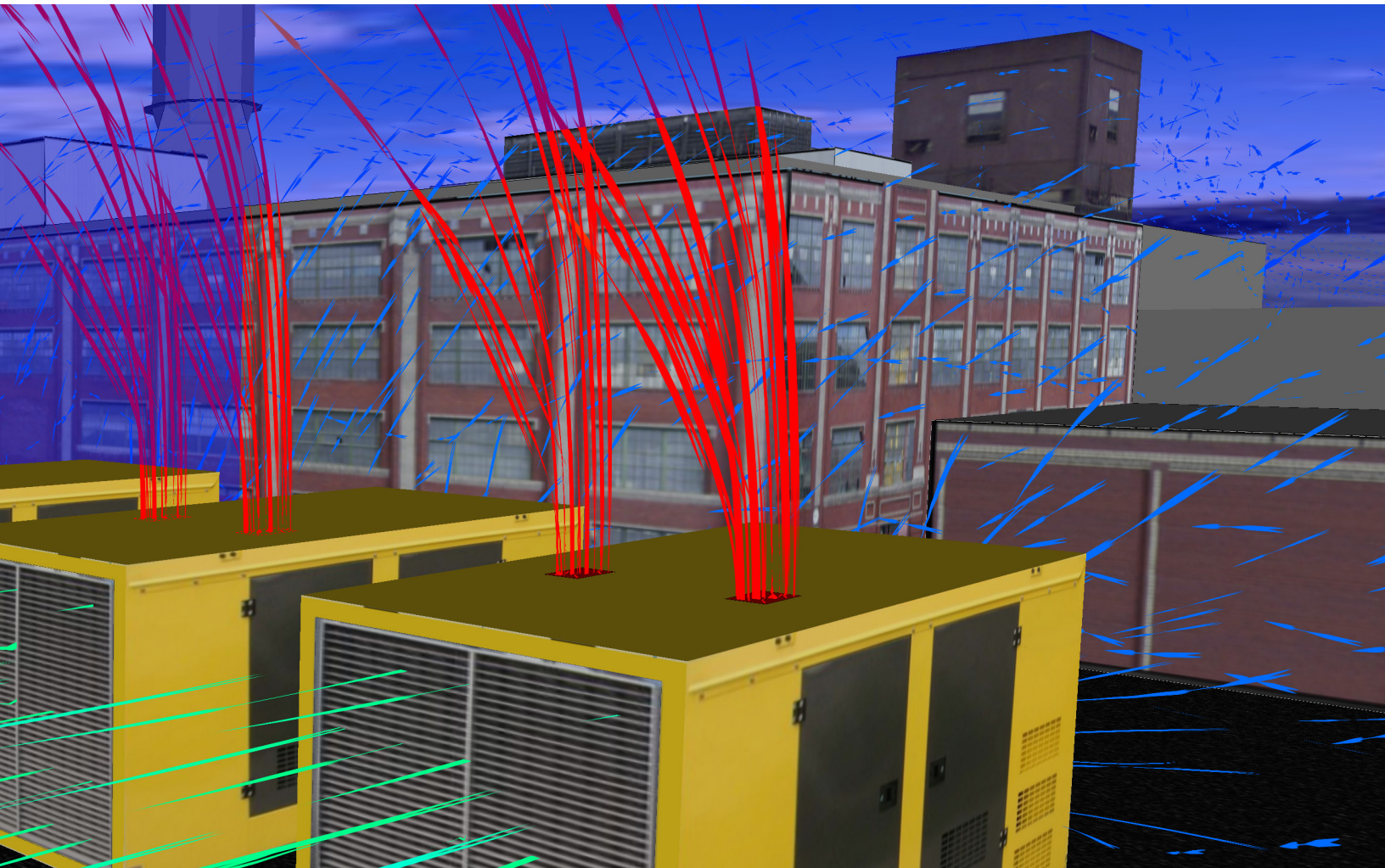
Automatic

In keeping with our vision to have the software work for you, we've combined our experience to develop a one-of-a-kind, adaptive, and automated approach. It's as simple as building a model and clicking solve.

Powerful

By any standards, DCX is feature rich:

- Control systems
- IT level fidelity
- Evaporative cooling
- Transient cooling failure
- Overhead ducting
- Containment
- External flow
- Full power network.



At a Glance:

- Compare **vendor equipment**: choose what's best for your facility
- Run **failure scenarios** to check resilience
- Run **what-if** scenarios
- Improve **energy efficiency**
- Understand and prevent **hotspots**
- **Model** adiabatic cooling, the entire cooling plant, free cooling, external environment, power network.

In Depth:

Balance trade-offs to optimize every aspect of your design

DCX gives you the power to consolidate all of your different modeling scenarios under one project,

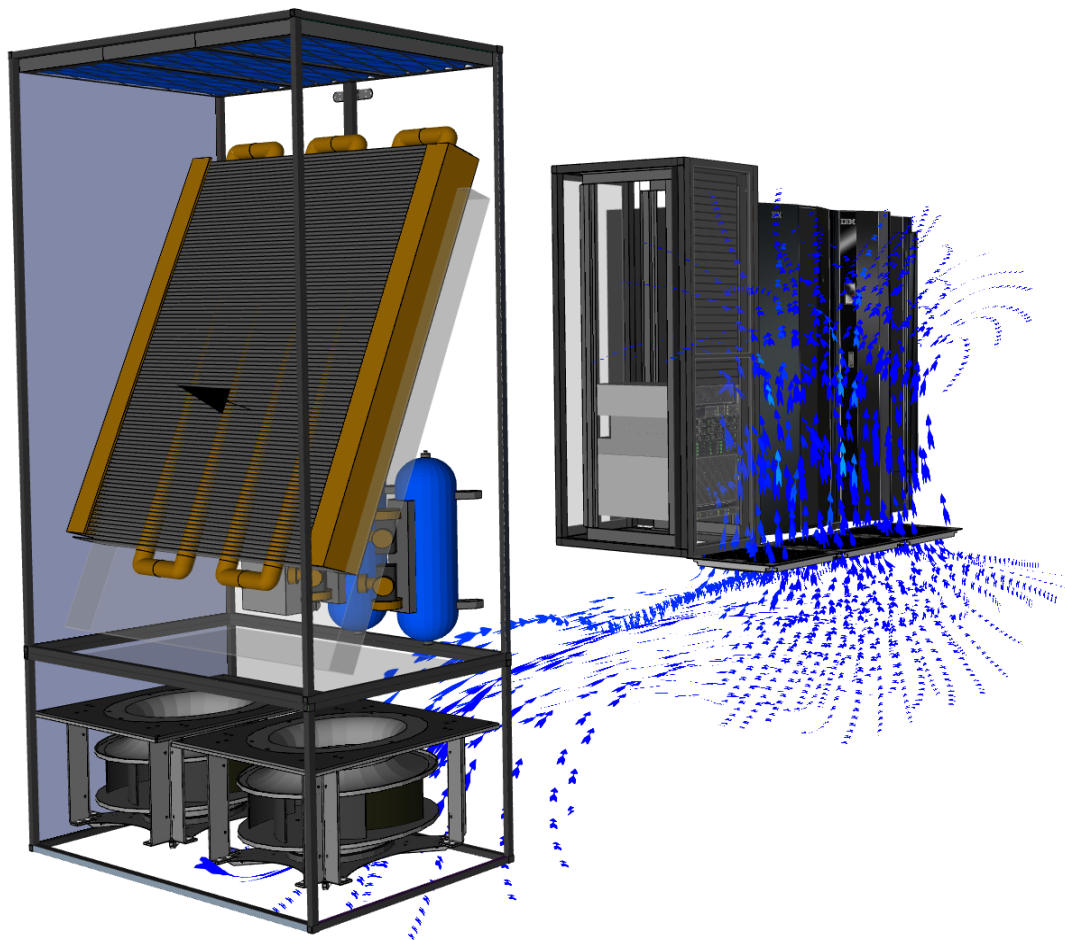
allowing you to assess and compare design variants. Pick the best design based on cost and/or performance.

Capture cooling infrastructure in full detail – then improve efficiency to cut costs

Design your own custom cooling system with complete control over individual components such as heat exchangers, fans, dampers, and hollow ductwork. Use direct and indirect cooling objects to design a data center that is truly efficient.

Model an existing or proposed control scheme

Prevent over-provisioning of cooling by optimizing and simplifying your control system. Evaluate control set points to make sure the cooling system meets your stringent capacity and redundancy requirements. Tie in pressure, temperature, velocity, and humidity sensors to various controllers that regulate coolant flow, fan speeds, damper positioning, etc., and avoid over-engineering.



Reaffirm the Tier status of your data center

Put your redundancy to the test by simulating the loss and recovery of your cooling system. Have the foresight to know which IT is at risk during the event, and determine steps that can be taken to mitigate this risk.

Use one tool to deliver multiple capabilities, then go beyond the white space

Simulating the externals of the data center allows you to define a layout that is optimized for your site.

Capture the effects of solar radiation and prevailing winds on the performance of cooling towers, external generators, rooftop cooling units, and your overall building envelope.

Exceed expectations for any modeling assignment

Our advanced metrics will help you to impress clients. How? By providing you with insight and

understanding of the finer details of airflow bypass and recirculation, and by allowing you to design a data center that is also comfortable for the people who work in it.

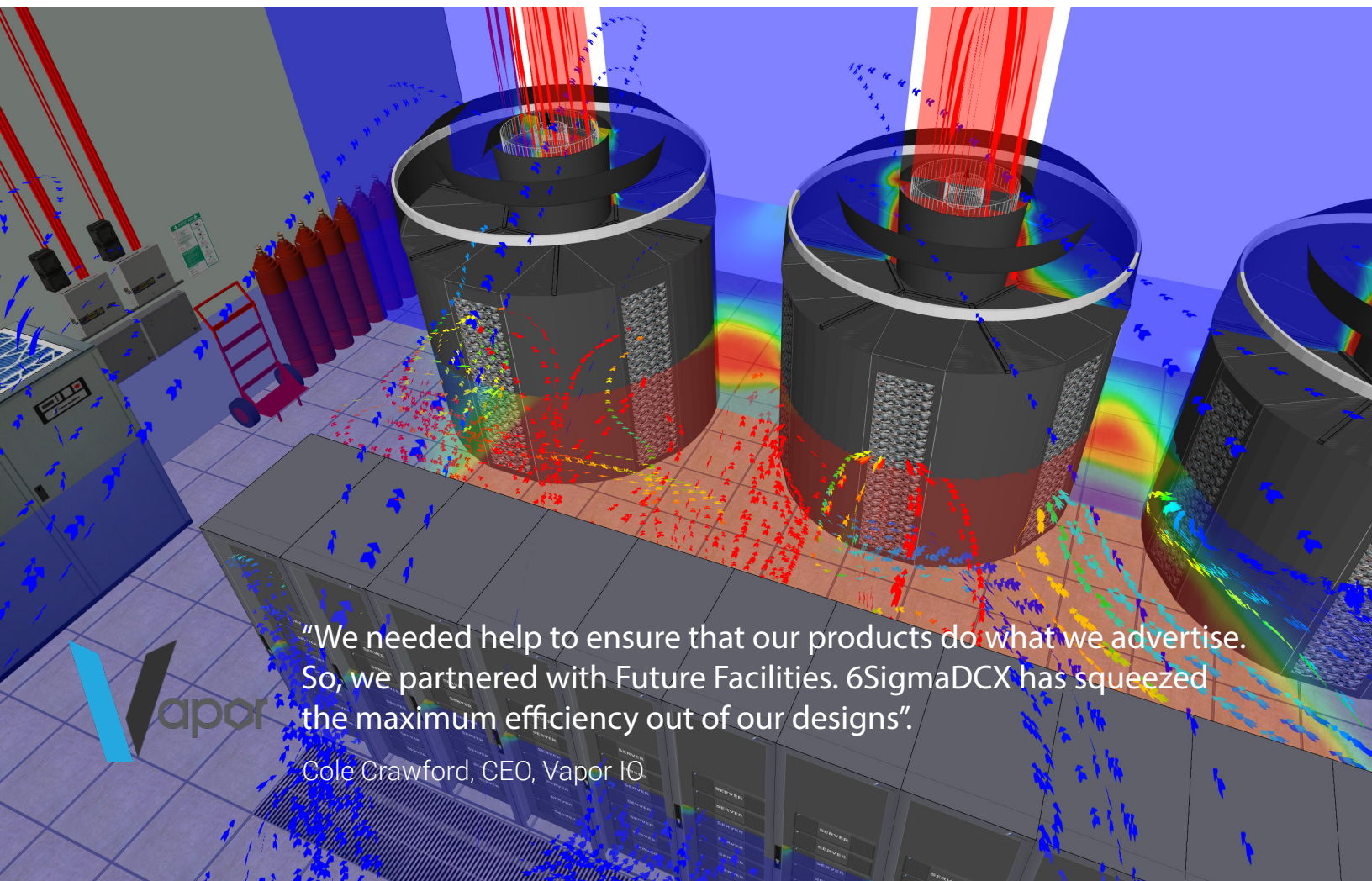
Do more with greater modeling versatility

Model complex geometries, such as CAD shapes and porous structures, with a wider selection of customizable object properties.

Define object airflow resistance, import 3D CAD objects, create asymmetric shapes, and change render styles, thereby increasing modeling fidelity.

Gain insight into individual IT performance

Do more than just visualize room-level issues – look for problems at their source. Find and fix hotspots originating from an existing layout within a rack. With detailed modeling results at each U slot, create custom baffles and blanking to prevent internal recirculation.



"We needed help to ensure that our products do what we advertise. So, we partnered with Future Facilities. 6SigmaDCX has squeezed the maximum efficiency out of our designs".

Cole Crawford, CEO, Vapor IO

Connecting to The Fluid Data Center

6SigmaDCX delivers the [Fluid Data Center](#) – the confidence to change. But how does it fit in with your current operational tools and processes?

DCX is the most integrated DC engineering simulation tool on the market, meaning that whatever software you use, and whatever your workflows, you can make your data center as fluid as the business it serves.

Traditional Planning and Monitoring Tools

The DCX suite was intentionally developed to work as well in environments that do not have DCIM tools as it does in those that do.

So, if you use spreadsheets, databases or similar traditional planning tools, the DCX suite offers one-click connectivity to these for two-way data exchange. Set it up, define the interval at which you want DCX to sync, then leave it quietly running in the background.

And if your live monitoring devices use IPMI or SNMP protocols, DCX can automatically sync with those, too. Again, you define the sync interval, leave DCX to bring in your live data, and then automatically populate the engineering simulation model with it.

DCIM Tools

If you're using DCIM already, we're the most integrated CFD tool on the market for operational planning.

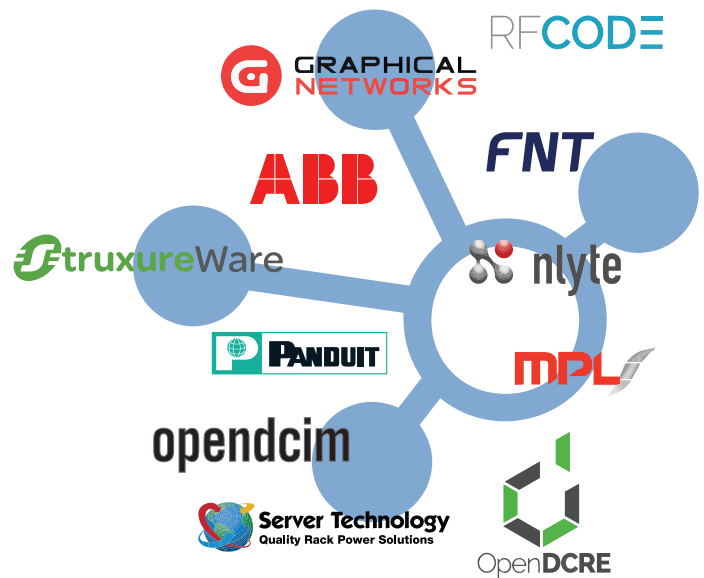
DCX integrates directly into:

- RF Code
- FNT Command
- nlyte
- Panduit PIM
- Intel DCM
- Schneider StruxureWare
- No Limits RaMP
- netTerrain
- Sensorium DCIM
- & many more...

DCIM or Traditional Planning Tools



Engineering Simulation



We've also developed web services for DCX, allowing developers of other tools to push their data straight into the suite.

Future Technologies

As technology and business strategies constantly evolve, so too must data center monitoring tools.

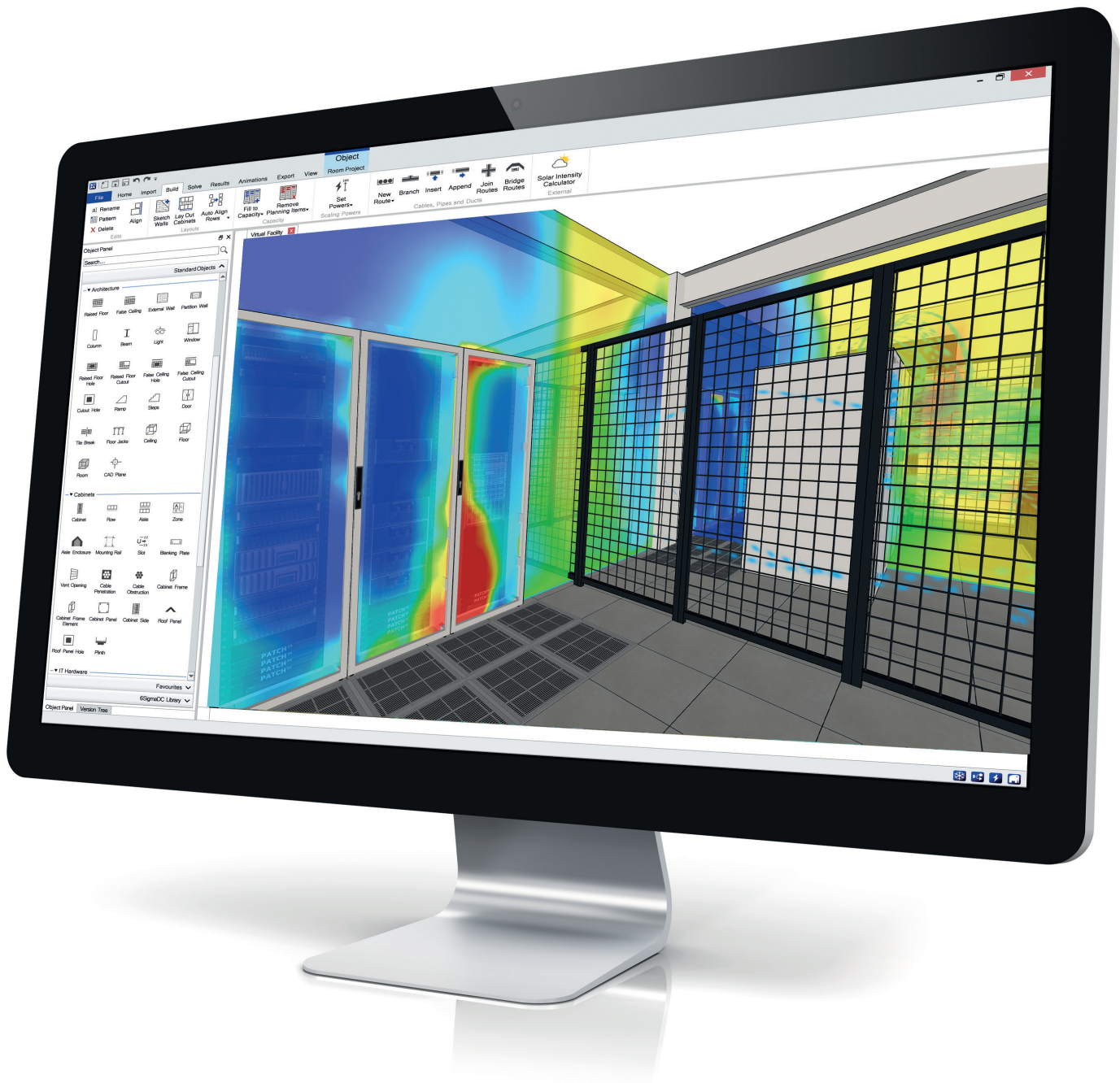
As the leading experts in our field, we're a part of the drive forward, and that includes being the preferred CFD partner for Open DCRE – Open Data Center Runtime Environment.

Key Features

- **Specifically designed** for the DC industry
- Flexibility to model **all types** of DC design or layout
- Most comprehensive - and most frequently updated - set of **vendor libraries** (CRACs, racks, IT equipment etc.) in the industry
- **Drag and drop** placement of library items
- 2D and 3D **AutoCAD** import and export
- Microsoft **Excel** import and export
- Extensive **DCIM integration**
- Import live monitoring data through **IPMI** and **SNMP**; connect to databases through **ODBC**
- Unrivalled **image quality** for sales and communication
- Custom reporting with direct export to **PowerPoint** and **HTML**
- **Animation** and image output – .gif, .wmv and other formats
- Intelligent and powerful parallel solver – **no previous CFD experience required**
- Easily-accessible built in views to show **key results**.

Additional Support

- Our DC engineering experts provide users with **project-based training** and **hotline support** via email, web conferencing and phone
- **Scalable** – the DCX suite of powerful and targeted DC tools is modular, allowing you to purchase only those that suit your business needs
- Constantly **validated** by our group of experienced DC consultant engineers through extensive in-house use
- DCX is **constantly developing** to model new DC technology
- **Multi-language** software interface, user support and training, including Chinese.



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