What is DCIM 2.0?

When searching for a new **DCIM** (Data Center Infrastructure Management) solution, one often comes across a variety of tools the features of which usually comprise of the floor space, power, and climate management tools associated with facility management. However, most of these tools are only capable of managing core IT components such as distribution cabinets, routers, switches, and storage systems and supporting their change management and component accounting. Most DCIM software providers fail to offer a solution for managing the more detailed and underlying IT components of a data center, such as virtual systems, cables and wiring, patch management, network connections, and addressing, even though these are the very properties of a modern service-oriented data center that should no longer be overlooked.

DCIM is more than just power and climate management

The acronym DCIM stands for "Data Center **Infrastructure** Management". The requirements for managing data centers have noticeably changed over the last few years. Data center operators know that dealing with an ever-increasing amount of virtual systems and service-oriented IT operations for customers from various businesses needs more than facility management functionality. In addition to supporting project planning and monitoring the supply of logical and virtual IT (and non-IT) components of a data center, powerful tools to simplify and secure common daily tasks such as customer-based accounting / SLAs (Service Level Agreements) are also in demand. For many ISPs, for example, an extremely high degree of detail information is necessary in order to provide and invoice port-based services.


DCIM: Topics

- **Energy** (power supply/mains connection, power consumption analysis, supply component monitoring, ...)
- **Climate** (heat dissipation monitoring, cooling systems control, bottlenecks, ...)
- **Area** (overview of reserved and occupied floor space, planning, ...)
- **Distribution Cabinets** (cabinet installation, component installation and swapping, cabling/wiring, virtual system identification, ...)
- **Infrastructures** (replacements, installations, configurations, monitoring, planning, repairs, IMAC/D, templates, business rules, ...)
- **Cabling** (port-based reports, cable ducts, work orders, workflows, ...)
- **Connectivity** (network paths, SDN, route search based on criteria/SLA, ...)
- **IPAM** (IPv6, logical/organizational networks, VLAN, DDI, hostnames, ...)
- **Monitoring and BSM** (real-time monitoring of core components / SLA parameters, alarms, service dependencies, impact analysis, ...)
- **Automation and Workflows**
- **Accounting** (customer/port-based: floor space, cabinet and component usage; virtual systems; ...)
- **Access Control**

A holistic approach

The fast-paced evolution of data centers has resulted in a considerable number of tools being pushed to market, all claiming to be "DCIM capable".

Most of these are so-called "silo solutions" that are mainly capable of handling specific data center components or DCIM tasks that either don't play a significant role in component interoperations or, when put to the test, return inadequate results. Even in instances where integration interfaces are supplied, it is often left up to the customer to manually configure them for practical use. At the end of the day, implementing such solutions usually results in having to invest even more time in follow-up projects than the initial time necessary for implementing the actual DCIM tools.

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Round 1: "Market consolidation"

The shortcomings of many solutions make it especially necessary to provide a clear definition of DCIM (DCIM 2.0). After an initial DCIM market consolidation, approximately 50 products are expected to remain. These are likely to include not only the aforementioned traditional "silo solutions" and other market-relevant products, but also products from the service management field.

Service Providers shape evolution of DCIM

In response to projected developments in the Service Provider and cloud computing industries (housing, hosting, virtualization, IPv6, etc.), it is the service-based solutions in particular that are expected to continually increase in importance. In contrast with DCIM, a number of customer-oriented standards and regulations (ITIL, ISO 900x, ITSM, etc.) already exists in this area. ITIL (IT Infrastructure Library), for example, takes a holistic approach for managing IT infrastructures, based on either a CMDB (Configuration Management Data Base) or a CMS (Configuration Management System). Its best practices and guidelines provide most of the groundwork for the processing and management of services. Also worth noting is that some software companies have taken to using the term SMDB (Service Management Data Base), attempting to emphasize their relevance in service-oriented software trends, even though the ITIL considers **CMDB** to comprehensively cover all aspects of configuration and service management.
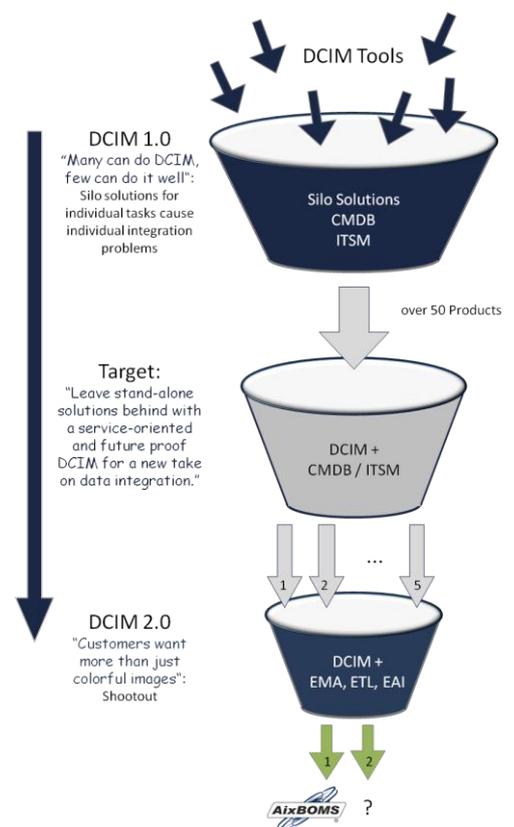
Round 2: "Shootout"

Service-based tools can be applied to many different areas of management. For DCIM 2.0 only those will be relevant that cover all essential disciplines of data center management. These include power and climate management, (project) planning, cable management, and rack management down to the port level. Moreover, DCIM 2.0 must be compatible with ETL processes (Extract, Transform, Load), EAI (Enterprise Application Integration), EMA (Enterprise Management Architecture) and more, making it a viable and future-ready solution for meeting the individual requirements of specific customer environments (e.g. integrating certain non-IT elements such as sensors) and continuing, perhaps accelerating, technological developments.

It is to be expected that trends in the mobile device market will have considerable influence on the further development of DCIM products. Since the tablets and smartphones currently on the market are already capable of administering complex IT systems via touchscreen, we expect DCIM mobile apps with graphics-based usage to leave today's cumbersome web-based solutions behind.