CUNDALL

Workspace optimisation using IP network data mining

Hot desking or free address working has been around for many years with an early implementation for Accenture Consulting in Paris in 1989. However, these pioneering attempts required the use of manual management processes facilitated by an on-floor concierge. Since then the technology to support free address working has come of age.

The proliferation of mobile computing devices including laptops, tablets and smart-phones creates the possibility of mobility but these need high-density Wi-Fi to support significant numbers of workers. Until recently, Wi-Fi has promised more than it could actually deliver. It worked well in hospital wards with one or two doctors or consultants carrying a tablet but was not really good enough on an open-plan office floor with tens or hundreds of workstations. The new Wi-Fi standards of IEEE 802.11n and more recently 802.11ac have been implemented as high-density schemes at sports stadiums offering simultaneous connection to tens of thousands of fans. Applied to the workplace this technology is now powerful enough to replace a wired network.

The other significant enabler of mobility is the introduction of Microsoft Lync and similar systems that effectively replace the hard wired telephone. Everyone at work now has a mobile phone and use Lync, the combination of a soft phone on a laptop and simultaneous ring on a mobile enables staff to move around the building without missing incoming calls.

Together advanced, high-density Wi-Fi and Lync create the conditions for effective flexible working where staff are no longer tied to a particular desk for most of the day.

Whilst staff may no longer be using wired IP networks these are becoming the de-facto standard for lighting control, presence detection and many more building control functions. Power over Ethernet (PoE) was developed as an enhancement for IP networks to enable telephones and Wi-Fi access points to be powered over the data cable and to eliminate the

need for a separate power socket and power adaptor. Combining PoE with LED technology has led to office lighting systems that just use the 48 volts dc of PoE to both power and control the lighting. Taking this a stage further the light fitting can incorporate a presence detector to turn down or turn off the individual light if no one is sitting below it.

The combination of high-density Wi-Fi for staff and the use of wired IP networks to detect staff presence provides a new opportunity to economically automate and manage flexible working. Two UK-based companies with similar backgrounds in data cabling and data networking have recently launched software systems to exploit this new opportunity. Their software relies on collecting data that is already available to manage desk allocation and meeting rooms. Typically the software will collect data from the access control system to determine if someone is actually in the building. Meeting rooms or desks that have been booked by 'no-shows' or do not detect people present can be efficiently returned to the pool after a pre-set time.

These software systems rely on the idea of 'data mining', that is extracting data from existing systems to provide new information, sources of data include lighting presence detection, access control information and wired or wireless data network log-on information

For the premises and facilities manager these software systems also provide occupancy data over the day, week, month and year that enable them to manage space proactively and with confidence. Complaints about not enough meeting spaces can be answered with accurate statistics that have been collected automatically.

Floor Activity

○ > 75% Utilisation
○ < 5% Utilisation
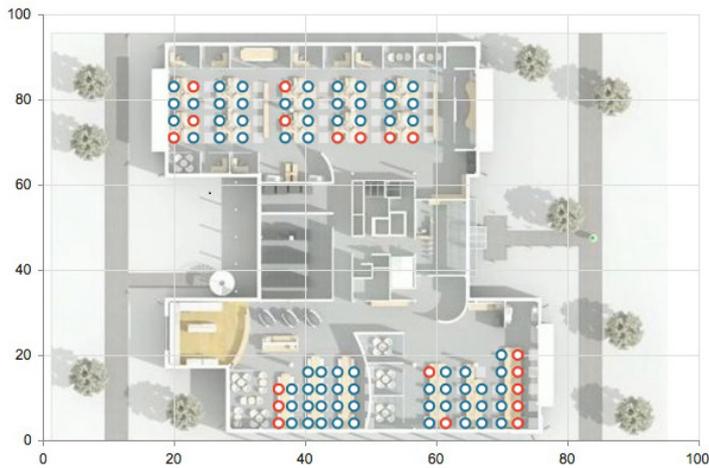
Available Workspaces (<5% utilisation)

LMG-DESK-01	LMG-DESK-02	LMG-DESK-03
LMG-DESK-26	LMG-DESK-27	LMG-DESK-43
LMG-DESK-44	LMG-DESK-45	LMG-DESK-46
LMG-DESK-47	LMG-DESK-48	LMG-DESK-51
LMG-DESK-57	LMG-DESK-59	LMG-DESK-61
LMG-DESK-63	LMG-DESK-65	LMG-DESK-67
LMG-DESK-72	LMG-DESK-78	

Demand by Workspace Type

Assigned		Actual Demand			
		Allocated	Shared	Hot Desk	Not used
Allocated	80	20	10	40	10
Shared	0	0	0	0	0
Hot Desk	20	10	0	0	10
Totals	100	30	10	40	20

Peak Loading
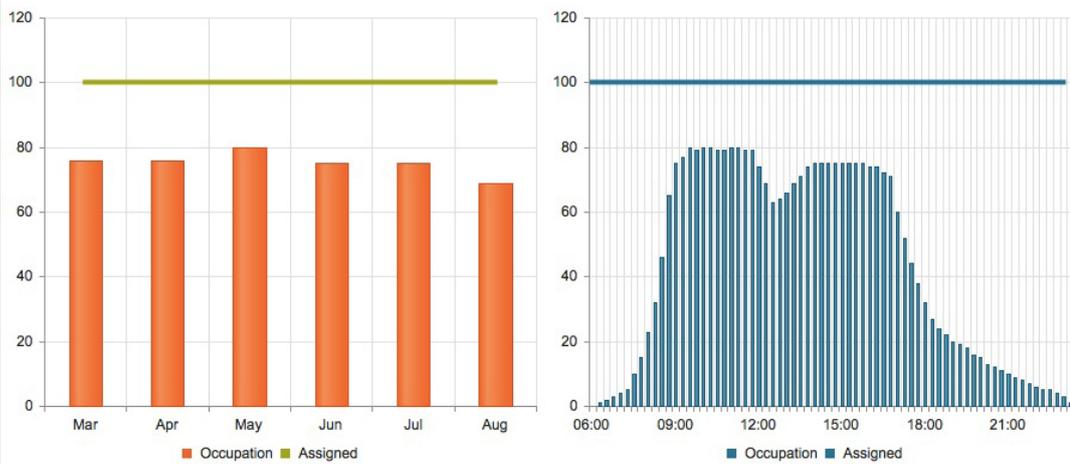
Organisations using this technology are mainly those which have large numbers of staff who are often out of the office and include many of the larger accountancy practices and management consultants where fee-earners are often working from clients' premises. However, there is growing interest in the public sector where many staff need to go out to meet clients. Also in larger cities and county councils efficiency can be improved by allowing staff to use drop-in centres across the borough rather than being forced to return to HQ between appointments. The efficiency gains are not only in staff time saved but in travel time and CO_2 emissions. Realising the full benefit requires good management of the central premises and any drop-in centres providing just enough desk and meeting space to meet peak demand.

As with all software systems ease of use is critical to success. Reservation systems for desks or meeting rooms need to be completely integrated with Microsoft Outlook or other calendar application so that setting up a meeting is a semi-automated, single-screen operation. Similarly the initial set-up effort and cost needs to be reasonable. Just because systems use IP networks, it does not mean that they can talk to each other or that any data transfer is meaningful. But the two suppliers are gaining experience linking their software to Outlook and mining data from existing systems as well as importing office floor plans from AutoCAD.

Similarly writing 'apps' for mobile phones has become easier and cheaper so that staff can have an app to make reservations, review what they have booked and be directed to a meeting room or workspace on a floor plan on their phone.

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www.redstone.com/what-we-do/smart-buildings/onespace.html

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