

# Case Study

## Automating Data Centre Infrastructure Diagrams

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ICM Business Continuity

# ICM Overview

- Phoenix IT Group
  - 2400 employees
  - Acquired ICM in 2007.
  - Other group companies Trend, Servo, Phoenix IT Services
- ICM Business Continuity
  - 18 Business continuity centres across UK
  - With data centres, hosting centres and recovery suites
  - 8000 recovery positions
- Internal structuring changes
  - ICM responsible for physical infrastructure of data centres in Phoenix IT Group 2009
  - Dan Nunn promoted to UK Data Centres Manager

# Recovery / Data Centre Locations



**Primary Role - Business Continuity**

**Work area continuity services**  
dealer suites  
mobile & telephony  
call centre

**Professional services**  
managed server recovery  
continuity planning

**Continuity services**  
high availability services  
data centre hosting

**Farnborough  
Hampshire**

# Changes in My Role

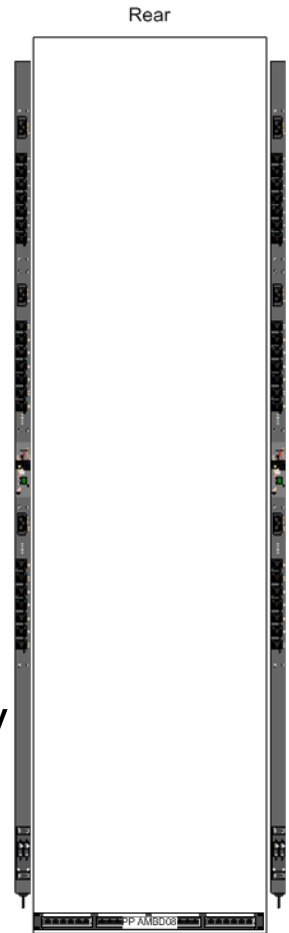
- Originally started as London South-West recovery centre manager (Farnborough)
- Responsibilities expanded to include other data centres as part of business growth
  - Multiple data centres
  - Develop management processes and supporting systems
  - Commissioned a new DC operations centre
- Responsible for managing the hosting space and interface to business
  - Cost control – people, energy, etc.
  - Capacity management and optimisation

# Data Centre Challenges

1. Keep costs under control
  - Energy, process & other operating costs (people)
2. Manage and report on capacity / utilisation
  - Space, Power, Cooling, Staffing
3. Optimise data centre resources
  - Layout, customers, group companies and their customers
4. Streamline operational processes
  - Planning, provisioning, flexible use of NOC / staff
5. Prepare for increased customer reporting – carbon tax

# Our Data Centre Environment

- A customer gets
  - Rack with dual managed power
  - Connectivity
  - Managed access, including cages if desired
- We provide
  - Contracted power on a cabinet basis – flexible
  - Monitoring power usage and environment
- Provisioning investment
  - Pre provision all power under floor
  - Pre provision patch panels for monitoring / connectivity underfloor
  - Build rooms



# Excel Chaos

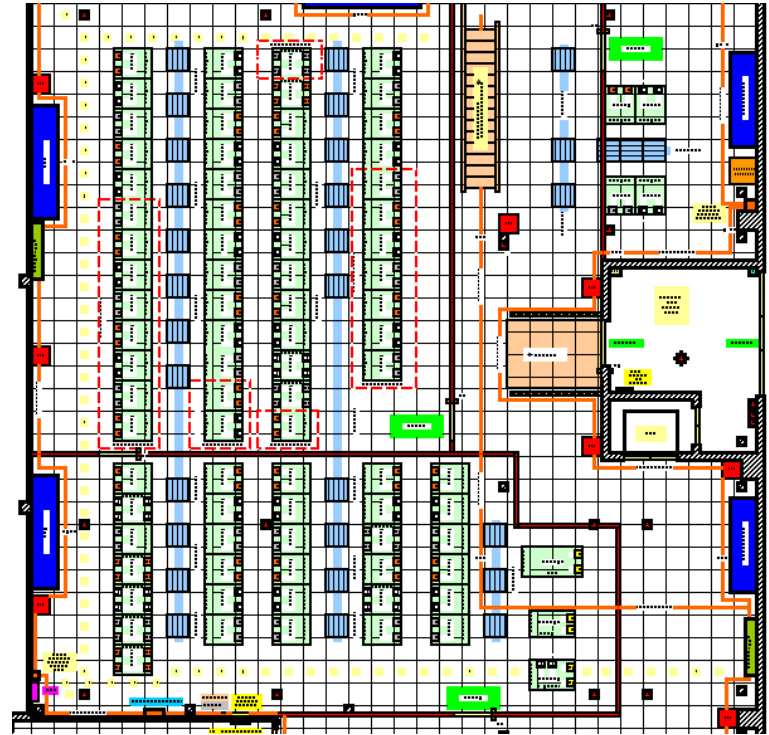
- Planned floor layouts and naming conventions
- Actual floor layouts showing fitted racks and customers
- Power monitoring results for all power strips
- Contracted vs actual power consumed by rack
- Patching connections for all internal systems
- Rack diagrams – one per worksheet
- Hardware assets
- IP address lists and allocation
- Contacts and contract details

A new installation could change all of these!

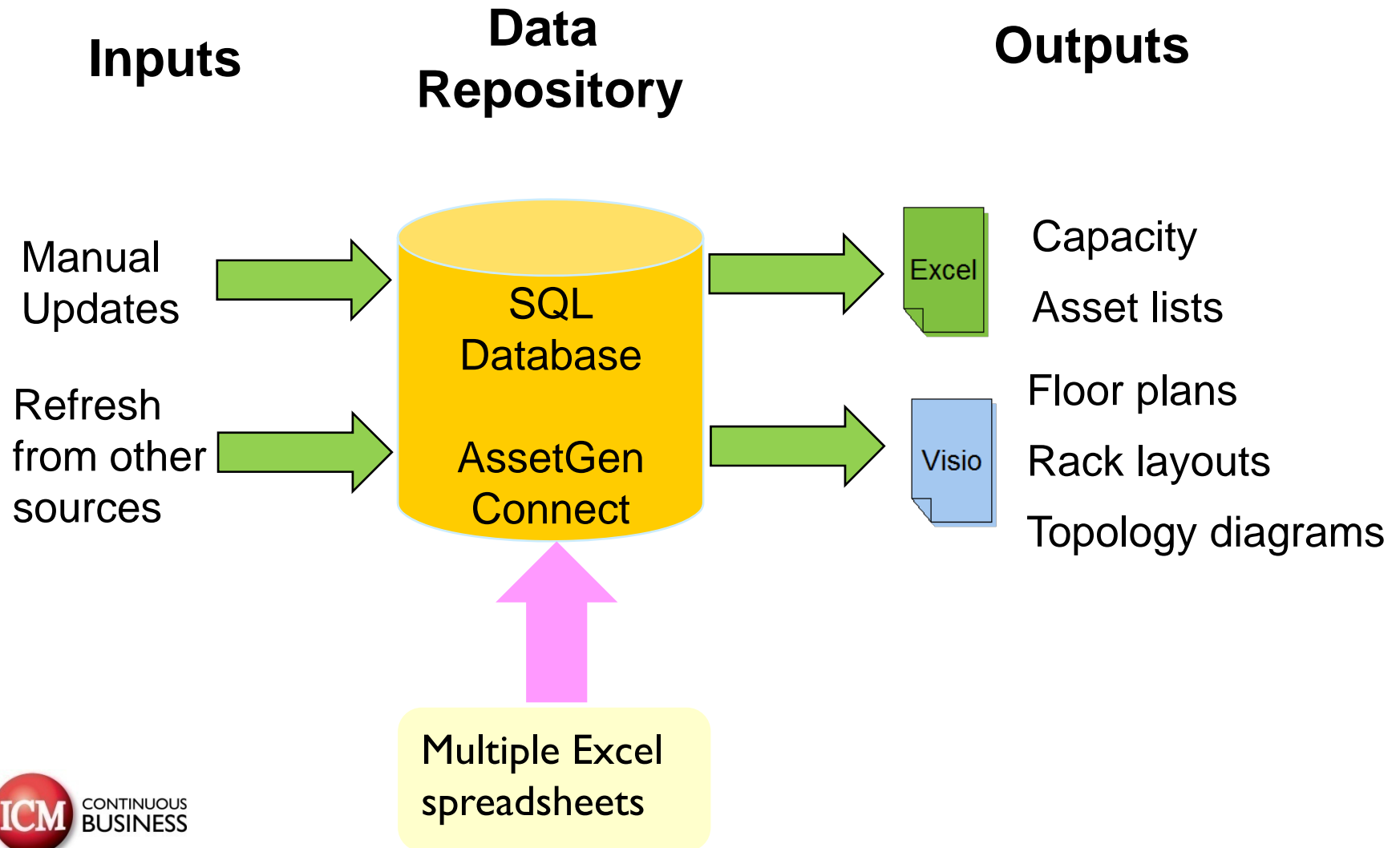
Some legacy CAD diagrams and Powerpoint topology maps

# Example Floor Plan

- Excel 10cm x 10cm grid
- 60cm x 60cm grid
- Took a long time to do!
- Takes a long time to update
- Takes longer to validate
  
- Racks link to contacts
- Shows configuration details



# Concept



# Our Approach

- Develop internal “best practices”
  - Data centre management training (Square Mile)
  - Increase staff skills and team productivity
- Develop common documentation – (reduce Excel)
  - Space, hardware assets, connectivity, power
  - Enhance reporting for group and “customers”
- Support from board to invest in specialist management toolsets and supporting services
  - AssetGen as a repository with Visio reporting
  - Data migration from existing Excel sources

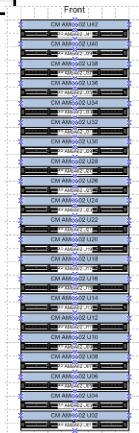
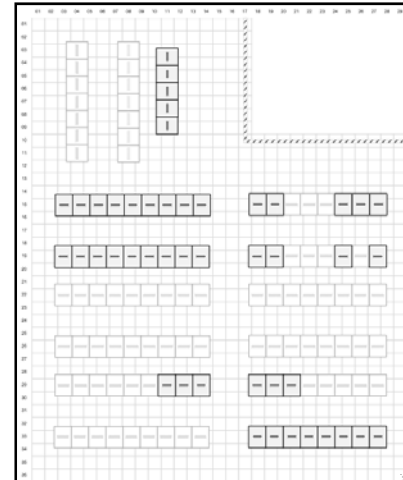
# Automation Results

All floor plans in a building are updated as a set after changes

- rack changes
- data changes – contacts, power

The floor plans serves many needs using data graphics – customer, power, status

Rack diagrams created automatically from same data



# In Hindsight

We used what we knew – Excel

Visio was different

- Didn't know existing Visio features
- Lack of team skills
- Didn't want more documents to maintain in addition to Excel

We had to reduce the number of infrastructure data sets and then create Visio diagrams from one source.

- Standards, templates, data formats

# The Benefits

- Workload reduction maintaining documentation
  - Time taken to update a diagram from a change
  - Standardised Visio diagrams are drawn for us
  - Less diagrams in total! (thanks to data graphics)
  - Time to manage expanding team
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- Currently rolling out the same system to all BC sites
  - Developing Visio as a dashboard for power, cooling, etc.
  - A management framework to apply across other facilities