



MAPPING NETWORKS FOR DAY 3 MANAGEMENT

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Day 1 Planning an infrastructure

Requirements, proposals, tenders, contract award, architecture



Day 2 Building the infrastructure

Scheduling tasks, detailed work instructions, testing, verification, sign off



Day 3 Managing and Operating

Ongoing moves/adds/changes, risk management, optimisation, transformation, centralised support, in/outsourcing, decommissioning.

DAYS 1 & 2

Use standards / reference skills where possible

Communicate clearly

Requirements, Proposals

Project plan(s)

Testing and verification

Ongoing support and maintenance (O&M) and handover documentation / manuals

Infrastructure built – everyone is happy



Installing & connect equipment

Add/change/remove some infrastructure

- New requirements & technologies
- Fibre, power, copper, IOT

Refurbish / upgrade existing infrastructure

Develop operational management systems

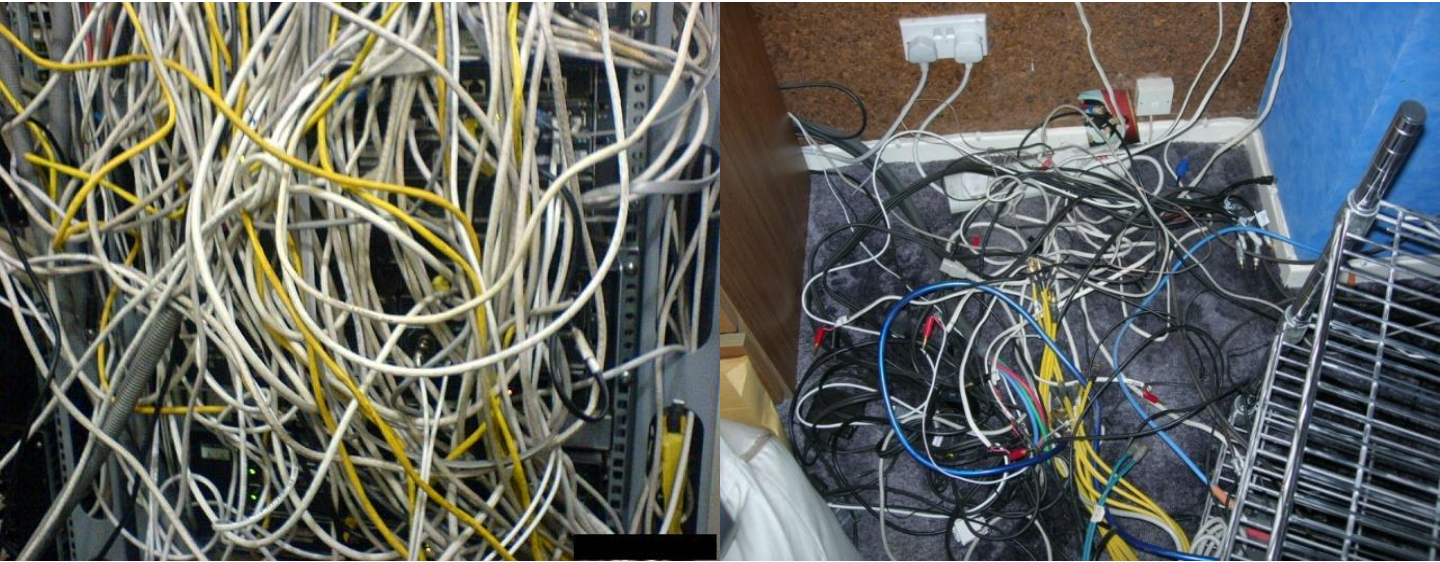
- Workflow and change processes
- Monitoring, performance, capacity

Re-organise teams

- Centralise expertise, outtask/outsource, replace

DAY 3 ACTIVITIES

SOMETIMES WE GET



SOME OF THE ROOT CAUSES

Bad design

Over length cables

Inadequate supervision

Lack of planning

Change process gaps

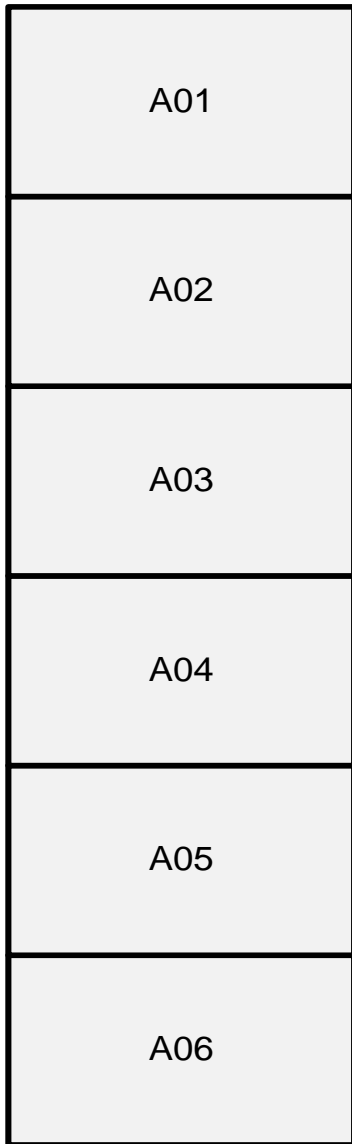
Limited training

Fault finding

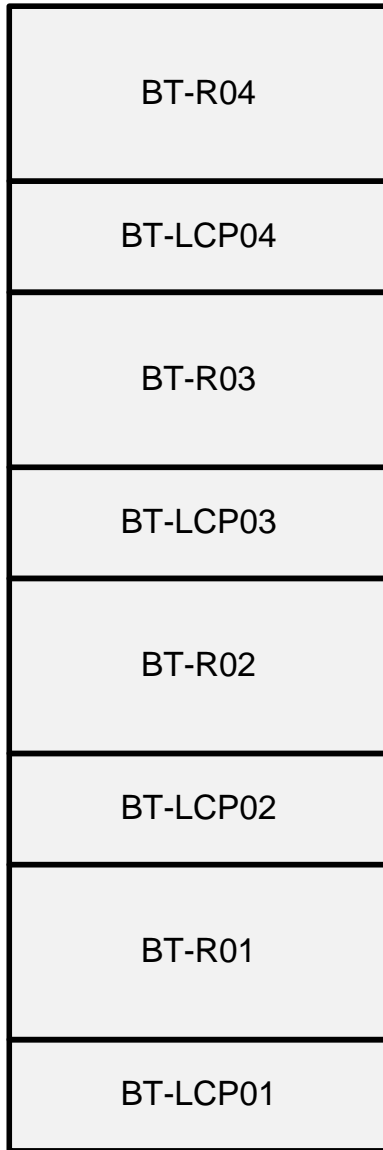
Lack of interest to fix

Lack of time for tasks

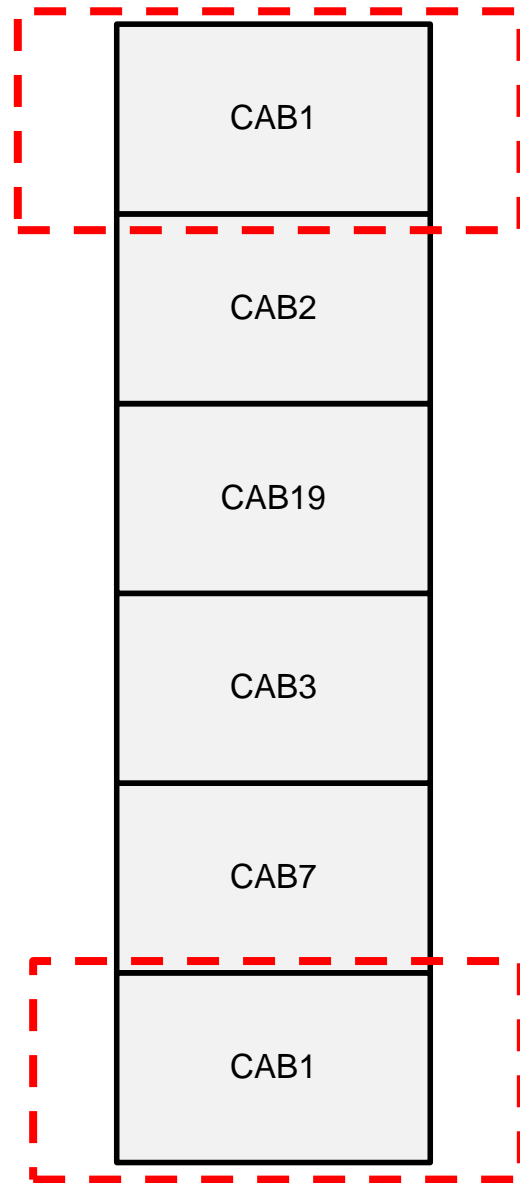
AND OCCASIONALLY WE GET...



We try for simplicity
Naming depending on
when installed



But its not so easy
Different technologies
have different needs



After a while
Duplication and evolved
build and naming methods

**Less trust in
documentation!**

WHICH RESULTS IN

Change tasks taking longer and cost more

- Site surveys, emails, meetings
- Increased risk of unplanned disruption
- On site supervision

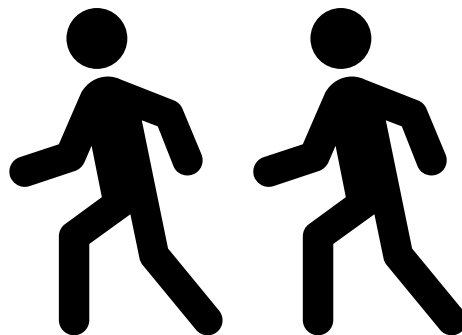
Constant rechecking / auditing

- Capacity of backbone and network switches
- Asset verification
- Inadequate records and documentation
- Tracing cables with every change (just to make sure the label is right)



1 Step Forward

2 Steps Back



CASE STUDY 1

What – Mapping a campus environment

20+ buildings

Why – Change of managed IT service provider

Handover of support roles – understanding of current estate

Resolution of network performance issues

Site development and refurbishment



How - Assess existing sources of knowledge – none!

Naming convention – building/devices, connections

Manual audit – inventory, space, connectivity, plans

Capture into AssetGen infrastructure database

Produce Visio diagrams and capacity reports



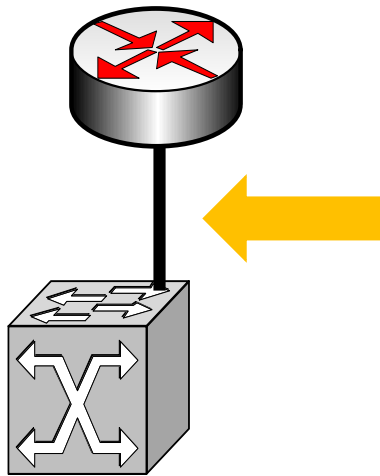
Deliverables

- Lists of equipment and configurations
- Visio schematics – network, campus, rack diagrams, floor layouts
- Photos where appropriate to show installation quality and best practice
- Backbone infrastructure layout and capacity – fibre / copper
 - Standards, distances, quality

Issues list

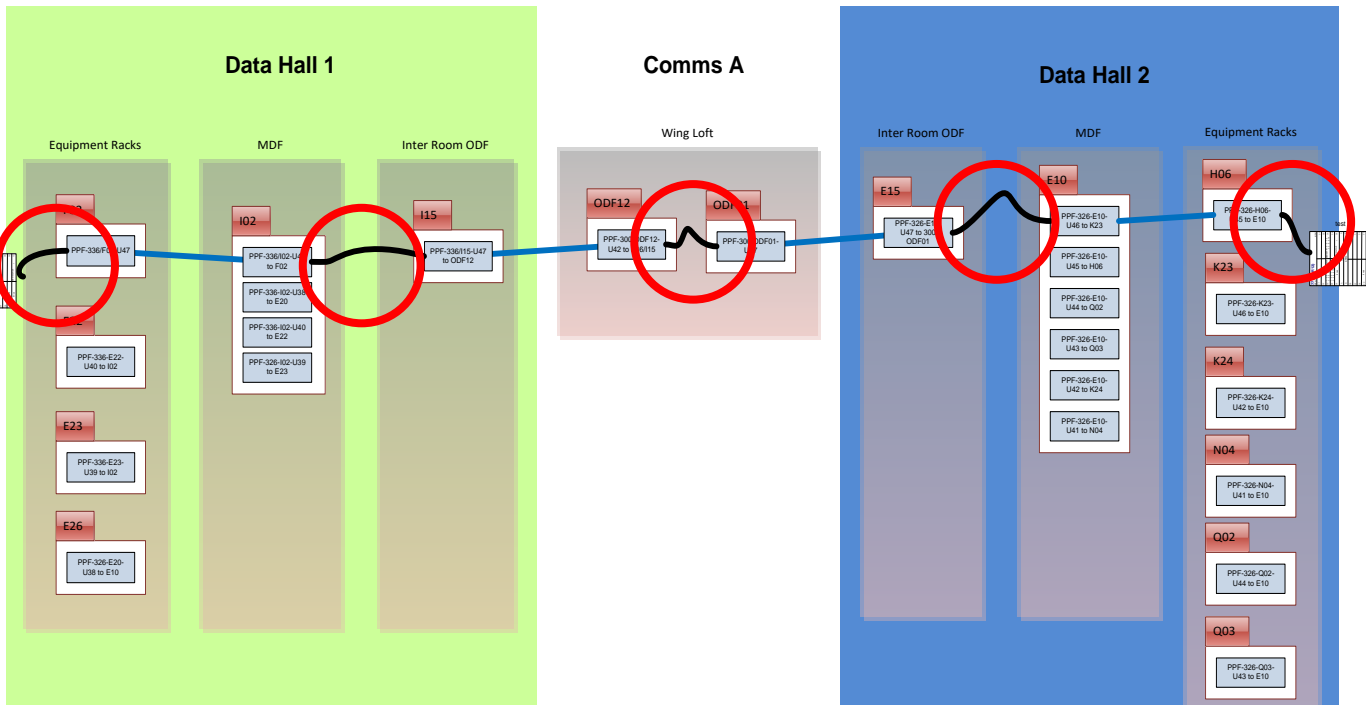
- Core fibre location not known – hidden in unmarked cupboard
- Logical and physical path views
- Remediation /testing required

LOGICAL OR PHYSICAL DEPENDENCY VIEW?



Requirement:
The router needs a link to the switch

Easy to understand!



The Project:

The router needs a physical path to the switch. not so easy to understand or communicate!

THE CASE STUDY 2

What – Mapping multi-site server/equipment rooms 50+

Why – Server and network refresh

Migration to IP telephony

Remediation – safety issues, cooling, power

Increased focus on security and governance

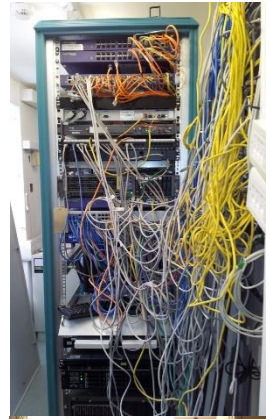
How - Assess existing sources of knowledge – some data

Naming convention – building/devices, connections

Manual audit – environment, inventory, space, ports

Capture into AssetGen infrastructure database

Provide consistent rack and connectivity Visio diagrams



Deliverables

- Lists of equipment and rack positioning
- Assessment of power sockets and UPS loads – before/after
- Assessment of cooling capacity
- Rack power delivery – redundancy and options
- Energy efficiency of layout and cooling system set points
- Photos and videos where appropriate to show installation quality and best practice
- Issues list – overcome current challenges – short term
- New design and comparison against internal best practice needs

AND IN THE NEXT 10 YEARS+

We'll all probably have different jobs/roles

Removing “physical” constraints by virtualisation will continue

- Computing, networks, cloud, storage, applications

More efficient use of power and hardware

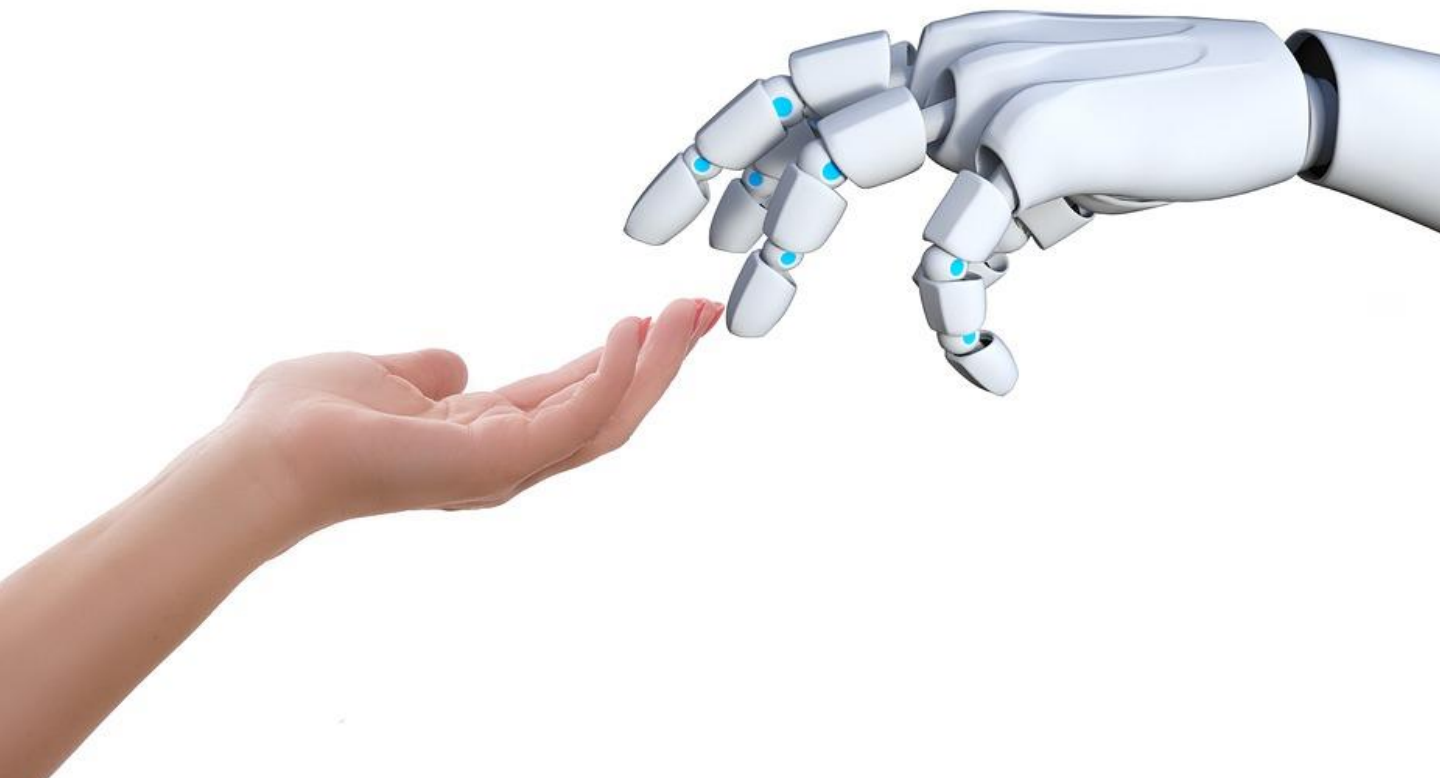
Less efficient use of virtual systems and resources

Fewer people, less physical changes - memory leakage

Even less tolerance of system disruption by users

Increasing sets of controls and auditors – just to make sure..

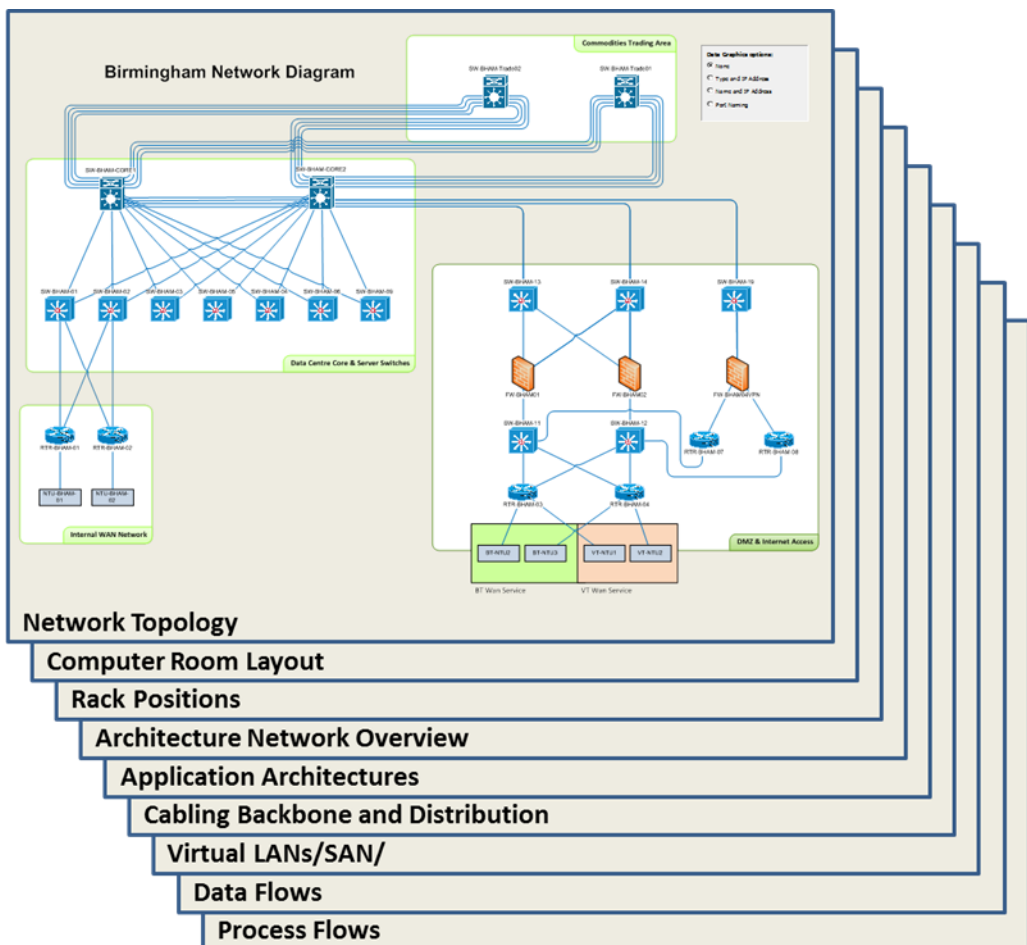
**Best to develop policy and best practices
now as the networks and risks are smaller!
Don't put all your trust in version 1 of automation**



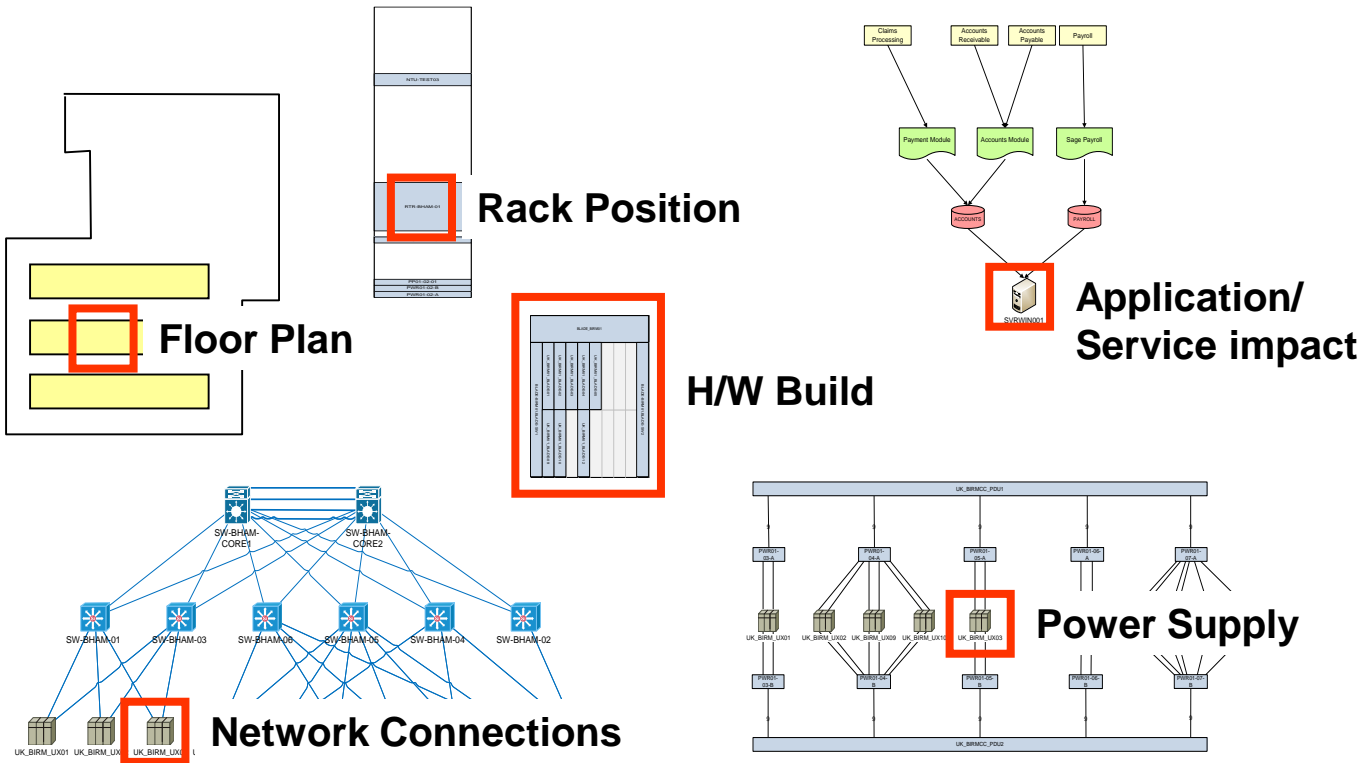
WHY MAP NETWORK INFRASTRUCTURE PROPERLY?

1. Reduced time and cost to implement changes
2. Faster time to identify and resolve faults
3. Common understanding of change risks and impacts across project and operations teams
4. Improved interfaces between technical teams, outsource partners and 3rd party suppliers
5. Separation of design, build and operate teams
6. Infrastructure capacity management and optimisation
7. Implementation of risk management and recovery policies

Many ways to map a network All may be needed at some stage



ONE DEVICE HAS MULTIPLE VIEWS



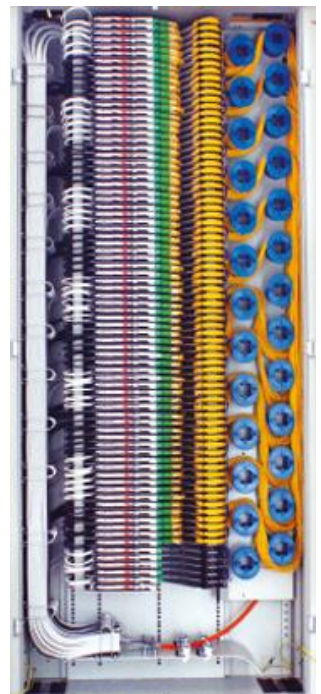
1. There will be always be duplication of device views – physical / logical
2. Changes in symbols, attributes, links, position can be automated using Visio
3. Think how many diagrams you need for a project – just a few
4. Think how many diagrams for operational support – just a few thousand....
5. Now you appreciate what AssetGen with Visio automation means

Mapping complex infrastructure with automated updates!

COMPLEX DEVICES — CHASSIS/CARD/MODULE

Active / Passive Equipment Build Layout is Needed

- Chassis
- Cards
- Power supplies
- Modular Fibre

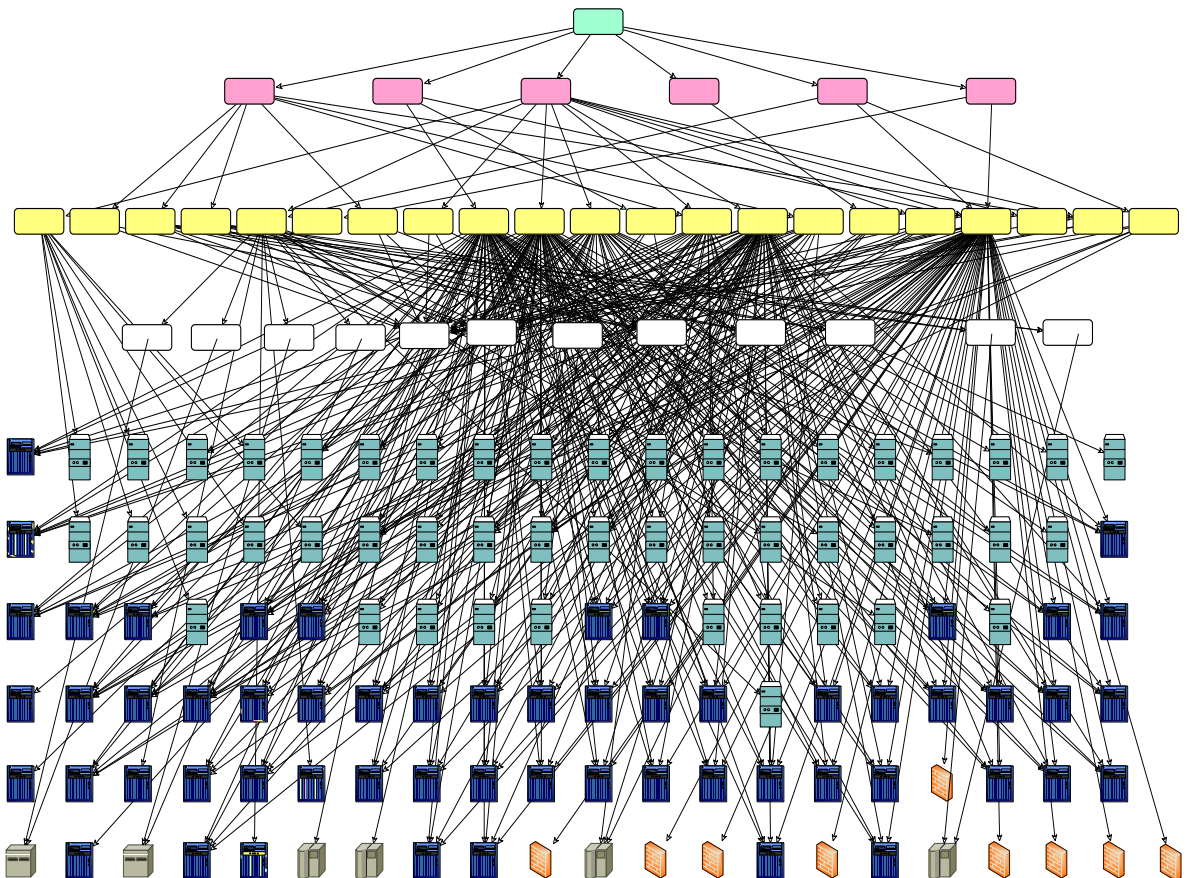


MAPPING ABOVE THE PHYSICAL LAYERS



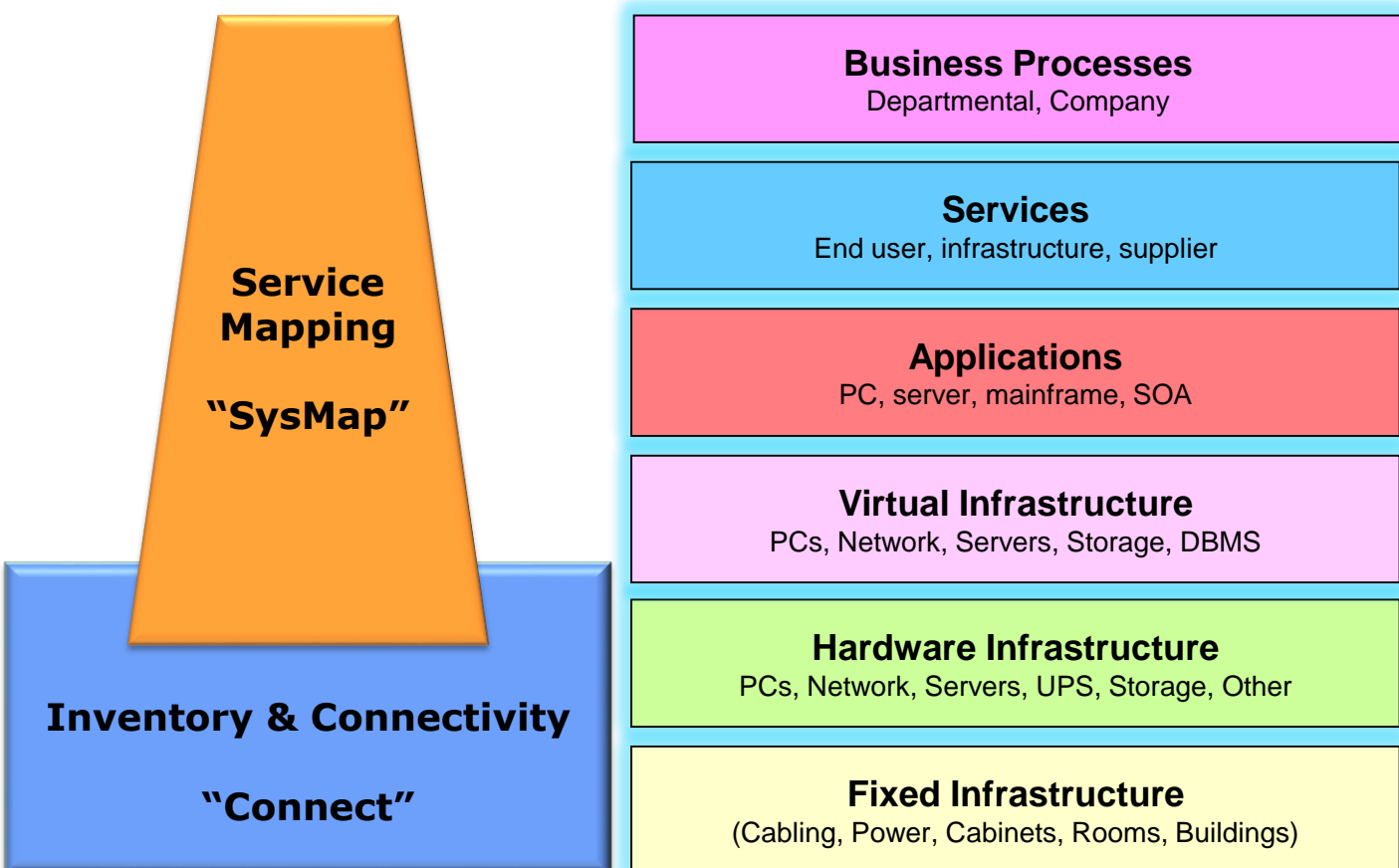
What is the impact of a **change**?

- ✓ Systems will upgrade
- ✗ Websites will be disrupted
- ✗ E-mail system crash
- ✗ Network failure
- ✗ Customer Outage
- ✗ Loss of data



MAKING IT EASY – USE THE ASSETGEN SYSTEM

1. Reduce 1000s of spreadsheets into one database
2. One data source for detail, capacity and audit trails
3. One data source for 1000s of Visio diagrams and views
4. One data source to maintain and administer standards
5. One data source to link to monitoring and workflow tools
6. One data source for projects, operations and risk teams



SQL Server platform

HOW MUCH EFFORT/COST IS INVOLVED?

Manual method – draw a rack diagram 2 – 5 hours

1. Gather inventory and positioning
2. Find Visio shapes for equipment
3. Draw the rack

Automated method with AssetGen system 10 seconds

1. Tick rack for cabinet drawing
2. Visio rack diagram produced

If there are 100 racks then what does it mean?

Time

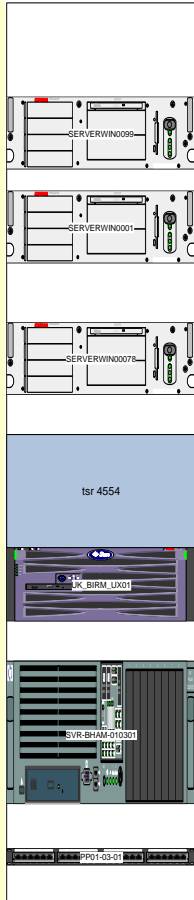
Engineer Cost

25 days or 16 minutes

\$20,000 vs \$26 (\$100hr)

AssetGen could automate multiple diagram updates for multiple locations every night with consistent data and symbols – No effort!

How about updating every network diagrams for every site - easy



Factor in the other outputs and reports also available from the same AssetGen source. Compare to how many are manually created and maintained by IT teams.

Diagrams

Floor plans

Network diagrams

System diagrams

Architecture diagrams

Application maps

ITIL service maps

Reports

Rack and cabling capacity

Switch port allocation

Patching lists

Audit trails

Change impact reports

Dependency lists

WHAT SHOULD DAY 3 MANAGEMENT LOOK LIKE

1. Established policies, standards and ownership
 - Makes it easy for engineers to plan and deliver
 - Simplifies roles and understanding or responsibility
2. Project / operations use common terms & formats
 - Common templates, naming system, labels, etc.
 - Easy to create, update and integrate data sets and schematics
3. Less documents / files to maintain
 - Use of centralised systems and internal portals
 - Visio diagrams, reports, Excel from infrastructure databases
4. Infrastructure knowledge is maintained by process
 - Changes can be efficiently delivered and managed
 - Less reverse engineering, more reuse of data
 - Documents and audit trails as evidence of control and governance
 - Workflow, monitoring and support systems work together

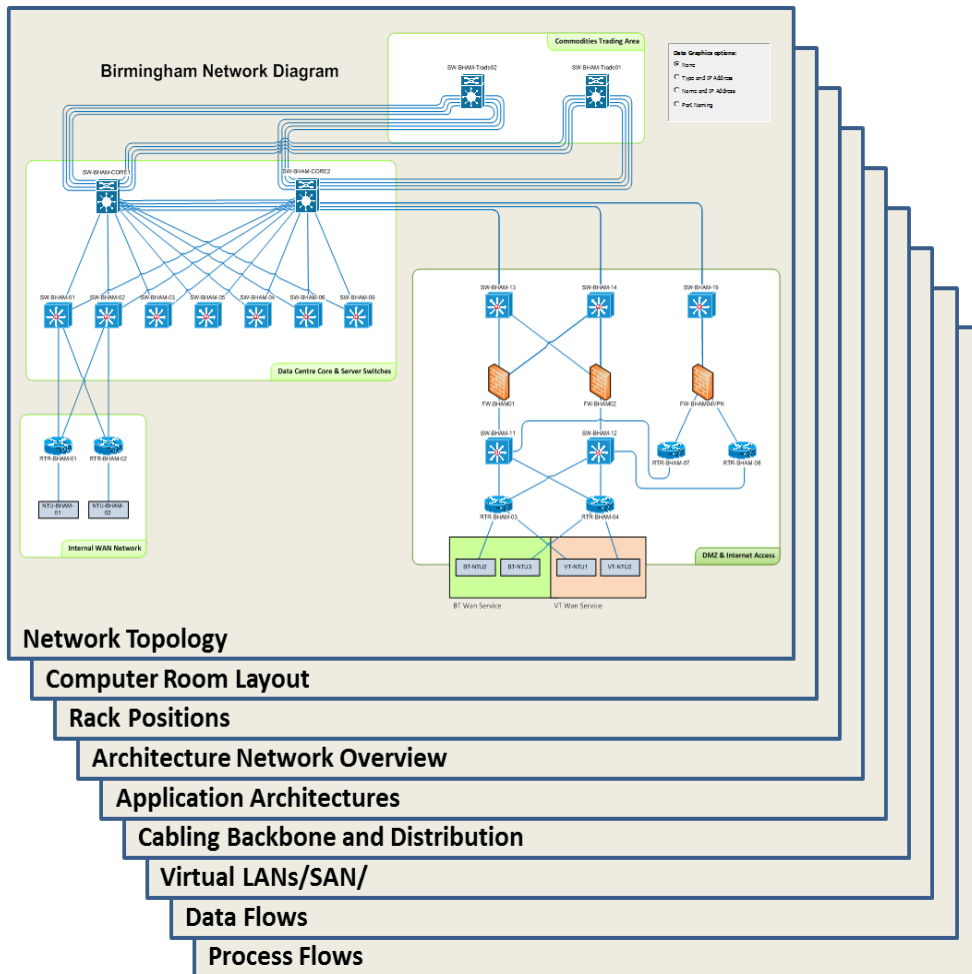


WHAT ASSETGEN CAN DELIVER

While you sleep

Changes to the IT systems and infrastructure across multiple locations are updated into various Visio diagrams and Excel outputs overnight – automatically!

On day **3, 4, 5, 6** and for ever.....



MAPPING NETWORKS FOR DAY 3 MADE EASIER

1. Defined naming conventions across the enterprise

2. Defined equipment, groupings and lifecycle processes

3. Replacement of Excel with database driven systems

- AssetGen infrastructure database for mapping complexity
- Workflow (ITIL service desk, SCM/ALM)

4. Presentation of data and views to suit information need

- Views by building, floor, device, network, service, cabling, system

5. Verification processes

- Manual and automated checks of both data and process

