

Automating Physical Infrastructure Documentation

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AssetGen Overview

UK based – Cirencester, Glos, UK
Sister company - Square Mile Systems

Develop toolsets and techniques for end to end systems and service mapping of complex infrastructure

Training, project planning, integration, data capture, process development

Industry bodies & roles

- BCS-Config Mgmt Specialist Group - Committee
- BCS ITIL Specialist Group – ex Chairman
- National Outsourcing Assoc. - Director
- LinkedIn – Data Center Engineering / Ops Mgmt

Business Processes

Departmental, Company

Services

End user, infrastructure, supplier

Applications

PC, server, mainframe, SOA

Virtual Infrastructure

PCs, Network, Servers, Storage, DBMS

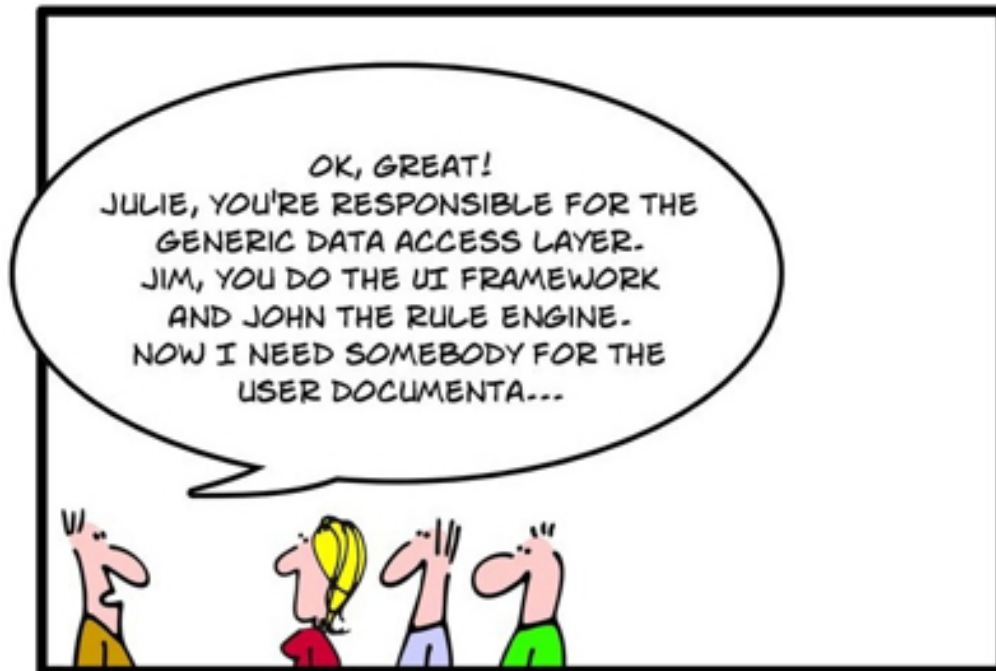
Hardware Infrastructure

PCs, Network, Servers, UPS, Storage, Other

Fixed Infrastructure

(Cabling, Power, Cabinets, Rooms, Buildings)

Physical Infrastructure



Infrastructure documentation
doesn't happen by chance!



Risks and costs multiply
as system complexity
increases

Infrastructure Documentation

What do you think I mean?

Floor plans

Rack layouts

Project & task plans

Wiring records

Network and system diagrams

Purchasing records

Inventory lists

Power diagrams

Etc...

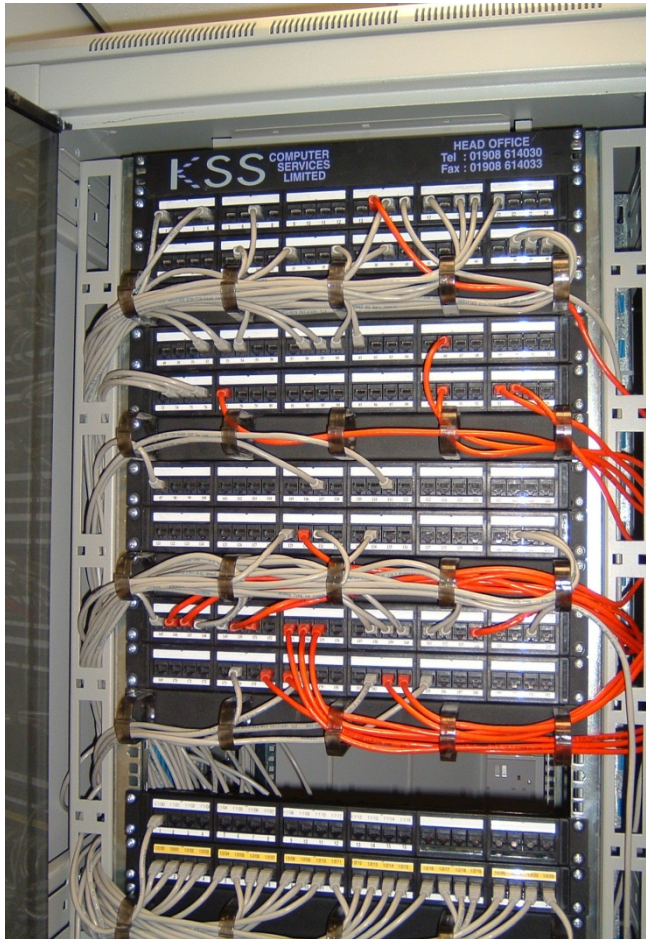
Typical Issues

1. Too much
2. Not enough
3. Not trusted
4. Wrong format
5. Not used
6. Cost of gathering data
7. Cost of producing the end result
8. Time from change to update
9. Cost of maintaining
10. Skills

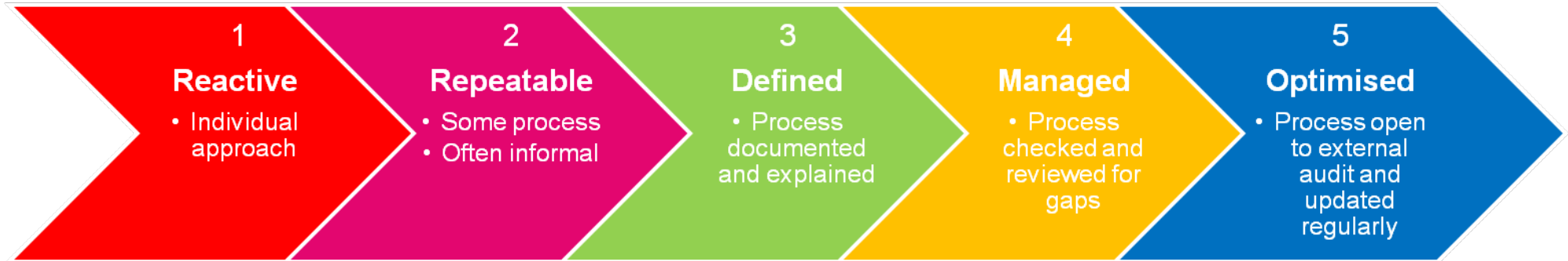
Changing Infrastructure Requirements

	BEFORE	AFTER
No. of Servers per cabinet	3-6	30-40
Power Dissipated per cab.	300-2000W	3kW - 25kW
Current service to cabinet	16A	2x32 A or 3 phase
Types of Equipment	Servers Monitor KVMs Power Strips UPS	Blade Servers Power Distribution Units MidSpan Boxes Disk Arrays (Storage) Smart Power Strips Regular Power Strips
Network types	100M	1G, 10G, SAN
No. of Cables	1 or 2	2 to 6
Power	1 or 2	5 to 10
Network	1 or 2	300 - 400
Cabinet Total	20-30	

Common Components – Different Practices



Infrastructure Management Maturity



As we move to the right we typically need to;

- 1. Reduce reverse engineering** – team based infrastructure knowledge
- 2. Enable separation of roles** – design, implement, operate, risk, out task
- 3. Optimise resources** – plan, manage and re-use capacity
- 4. Communicate to others** – changes, risk, metrics, billing, compliance

Documentation – Lots of Wasted Effort?

Lifecycle

Design
Bid
Project
Build
Handover
Operate
MACD
Controls
Risk management

Examples

Cabinet

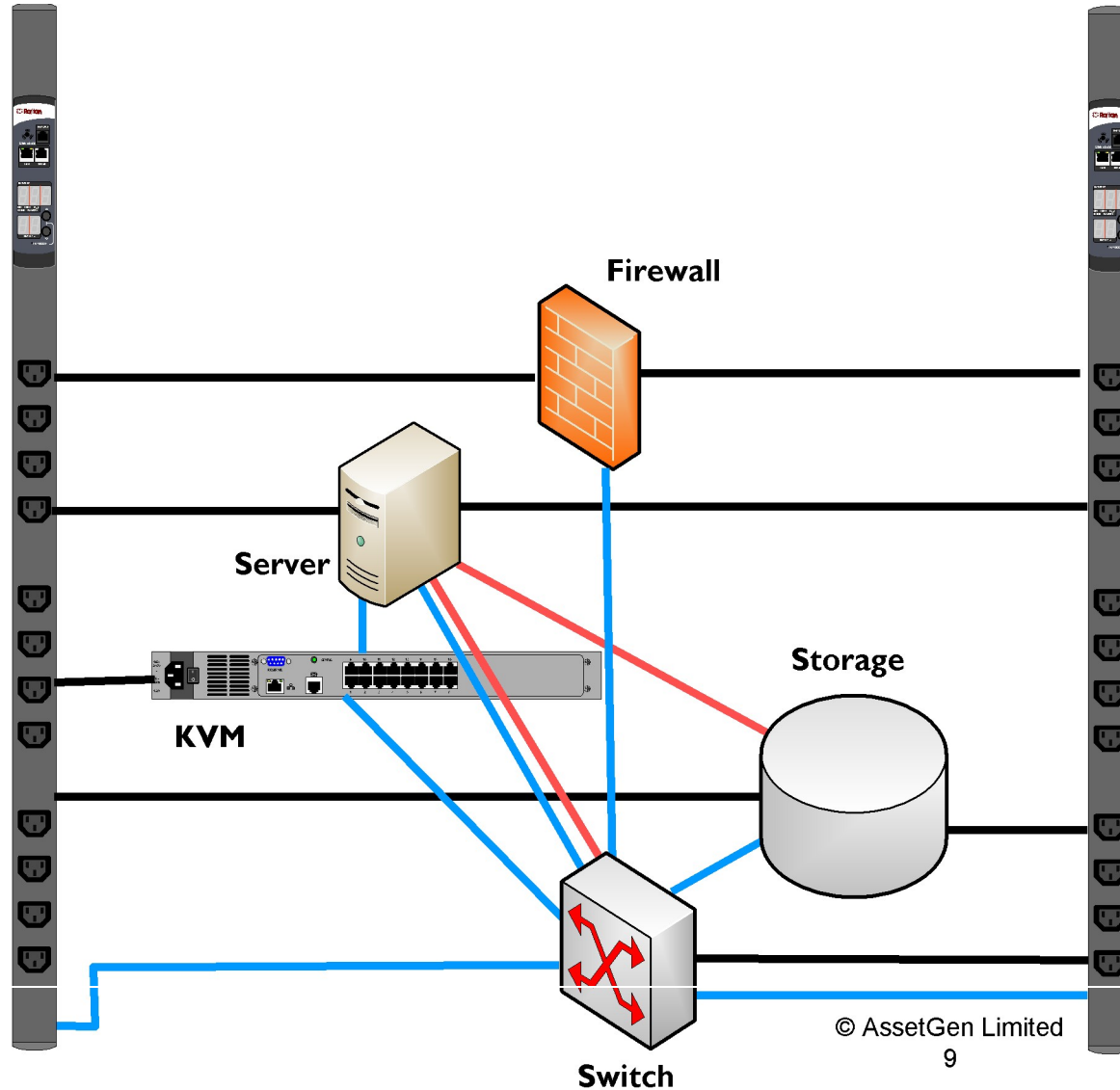
Patch Panel

Server

Formats

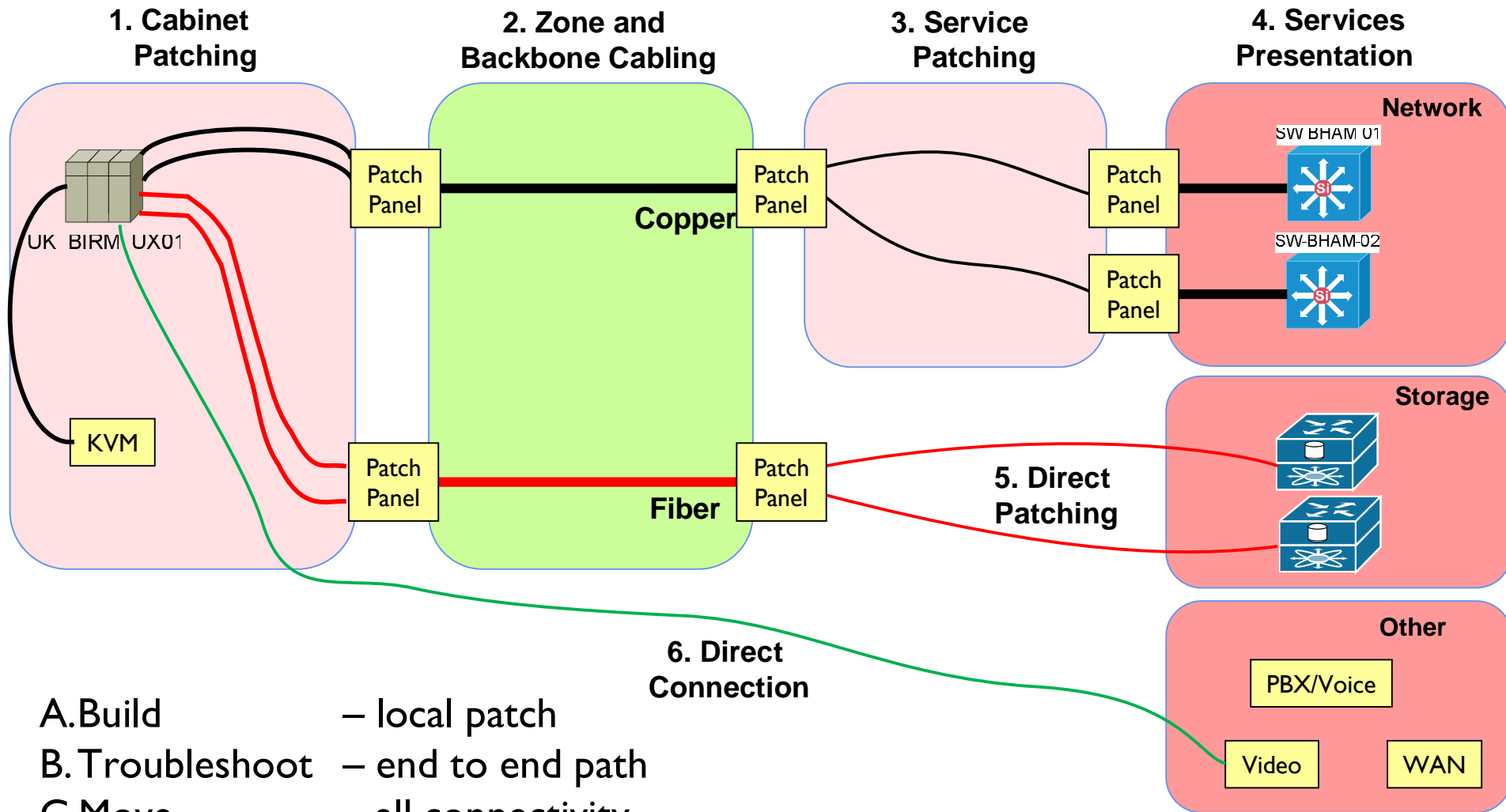
Paper
Word
Excel
Visio
CAD
Databases
Monitoring systems
Data centre toolsets
Cable management
Internal web portals
Work flow – service desk
Test results
And so on....

Who Should Maintain?



Innovation often requires changes in roles and working practices

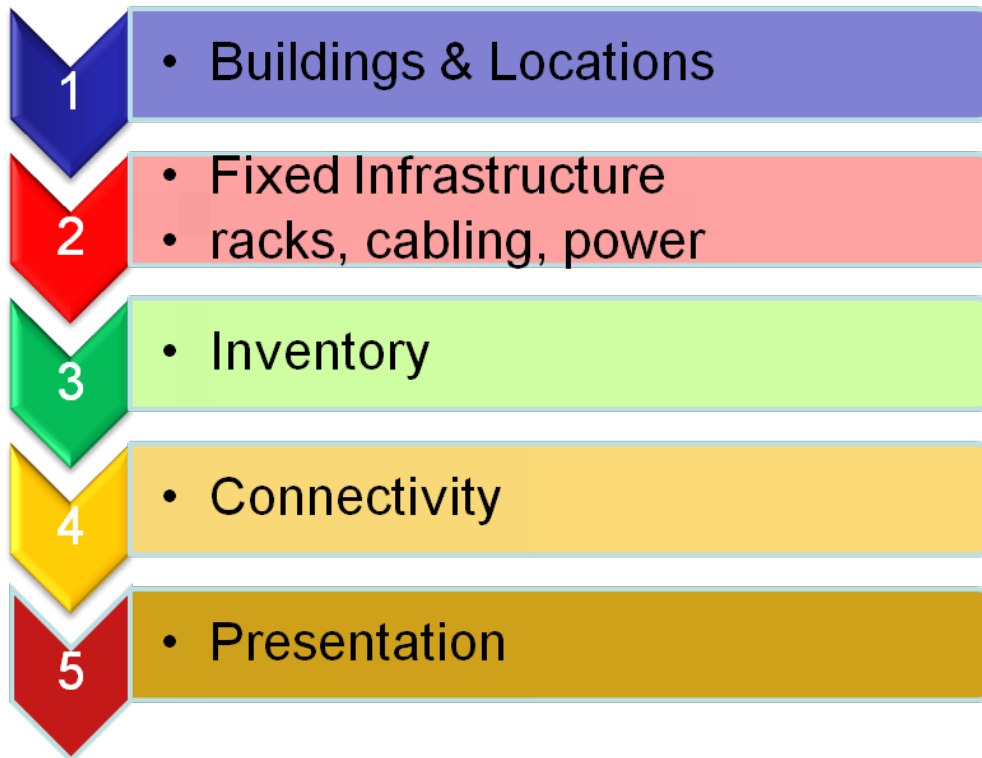
Data Centre Data Connectivity Example



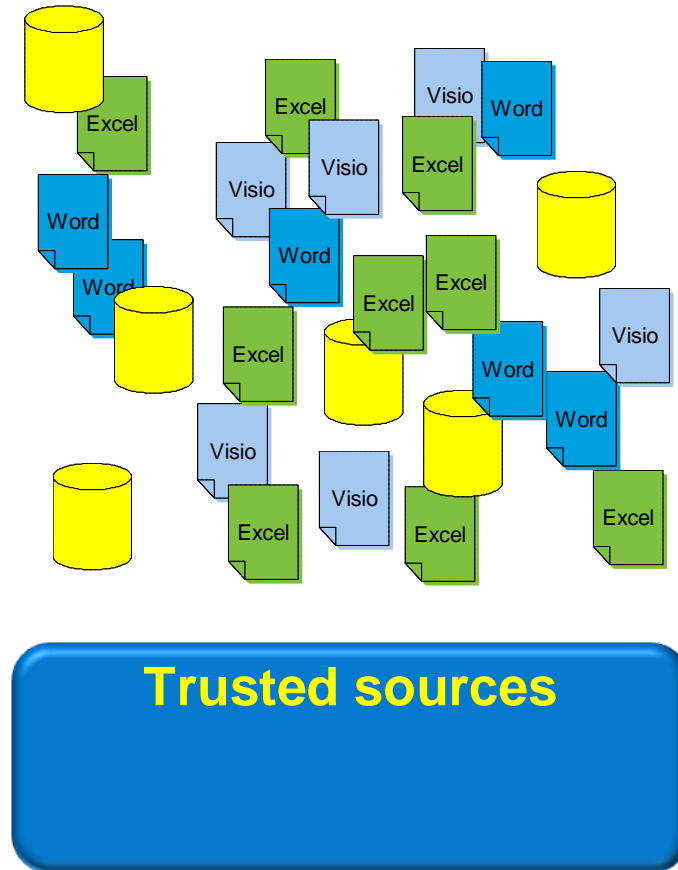
- A. Build – local patch
- B. Troubleshoot – end to end path
- C. Move – all connectivity

Automation (1)

1. Don't look back



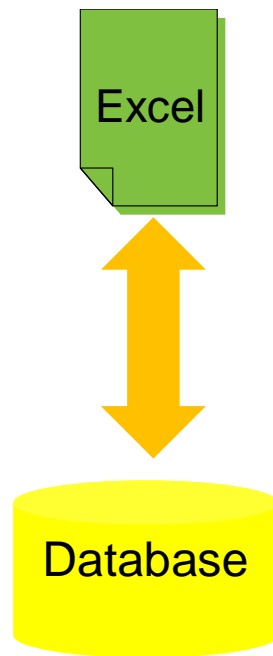
2. Reduce Data Sources



Automation (2)

3. Use Existing Toolsets More Effectively

Lists/Inventory



Diagrams



Examples

Inventory to rack layout

Inventory to network diagram

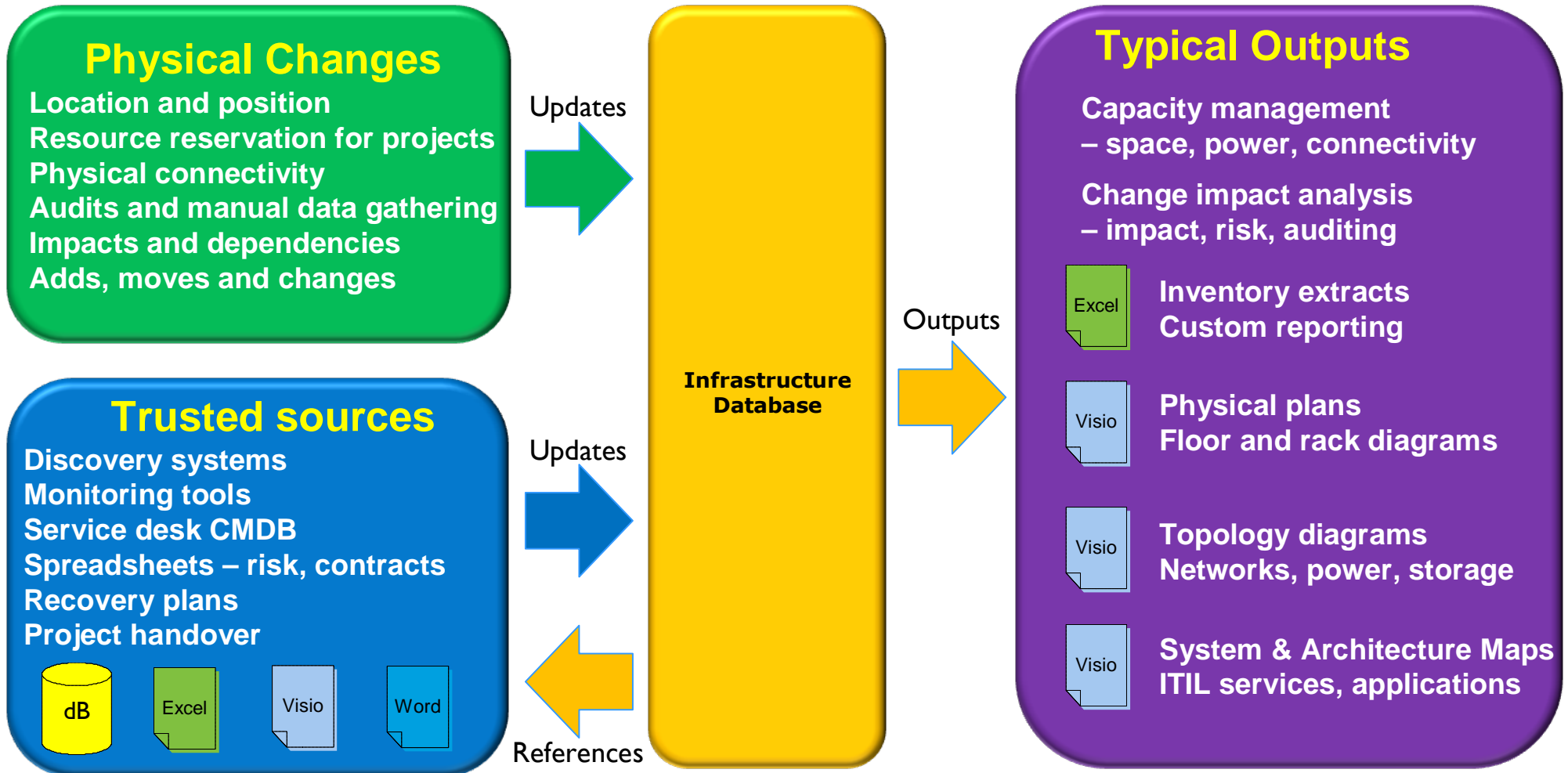
Rack list to floor plan

Power usage to floor plan

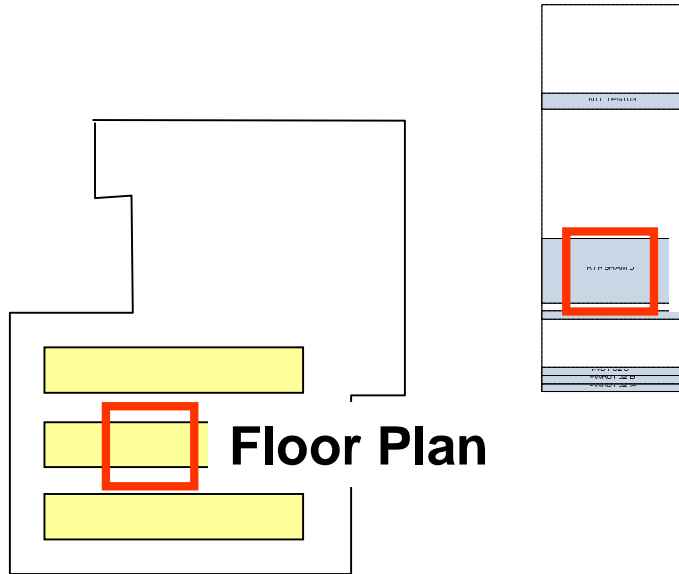
Power usage to floor plan

Switch links to network diagram

Automation (3) – Specialist Toolsets

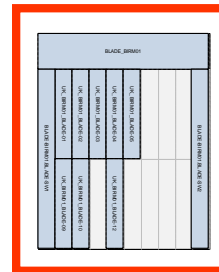


Different views of a server

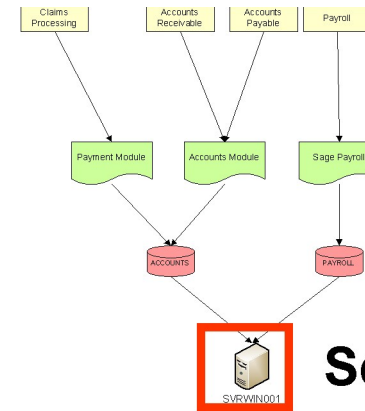


Floor Plan

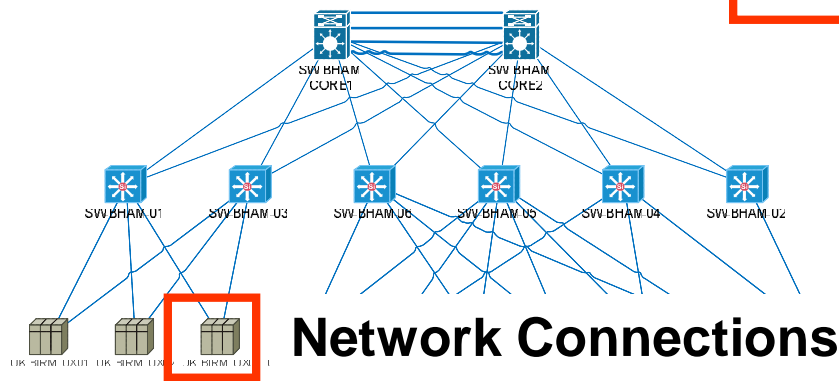
Rack Position



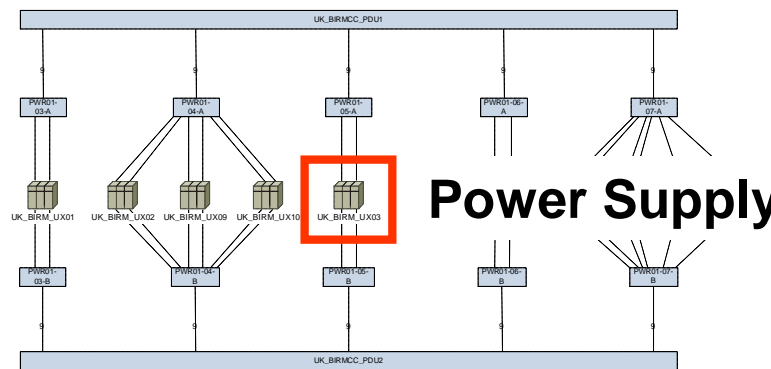
H/W Build



Service impact

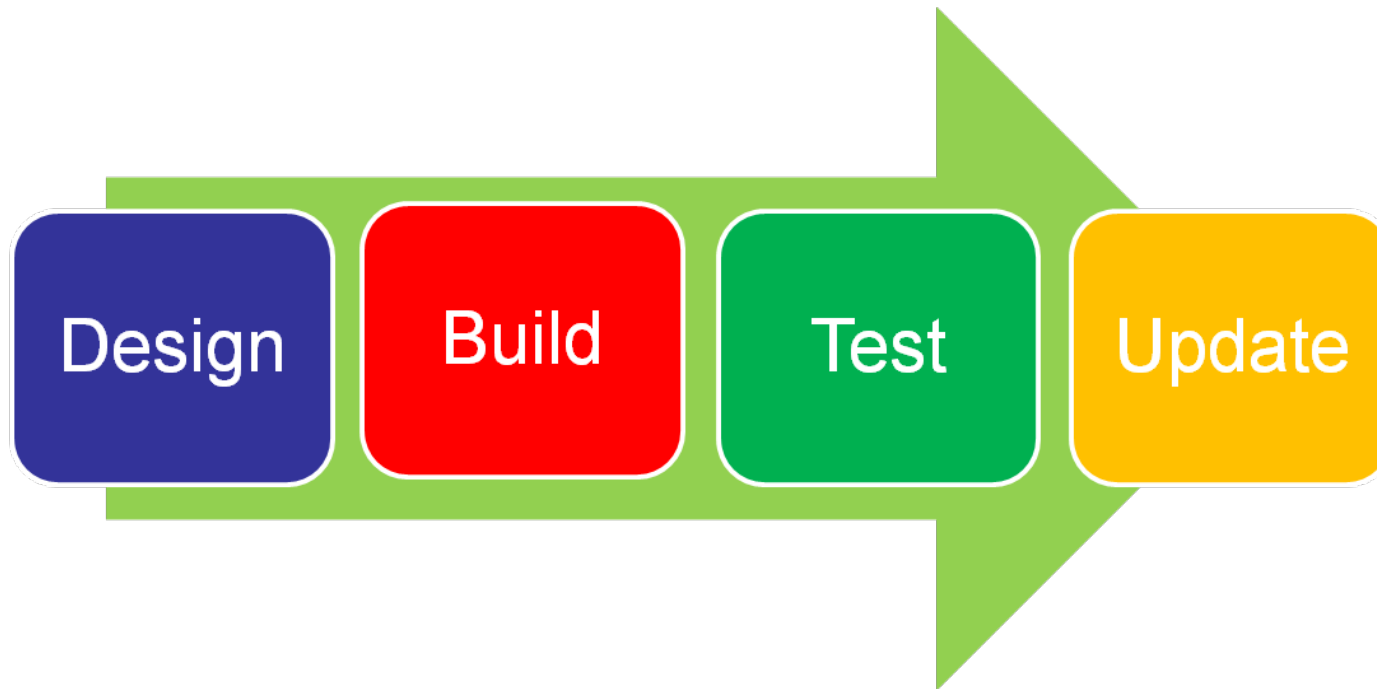


Network Connections



Power Supply

Automation (4) Change The Work Flow



Q. When would a rack diagram be updated with the position of a new server?

Q. When would the patching records be updated for it's network connections?

Q. Who would update the documentation?

Summary

- As IT complexity increases – the need to improve controls and reduce change risks also increases
- The time and cost of changing is reduced significantly by better documentation – automation being key
- Most organisations cannot change without external help
 - Systems, practices, data capture, maintenance, training
- It all starts with a good baseline of the physical infrastructure

Thank you

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AssetGen Limited

Come and visit us on stand 402