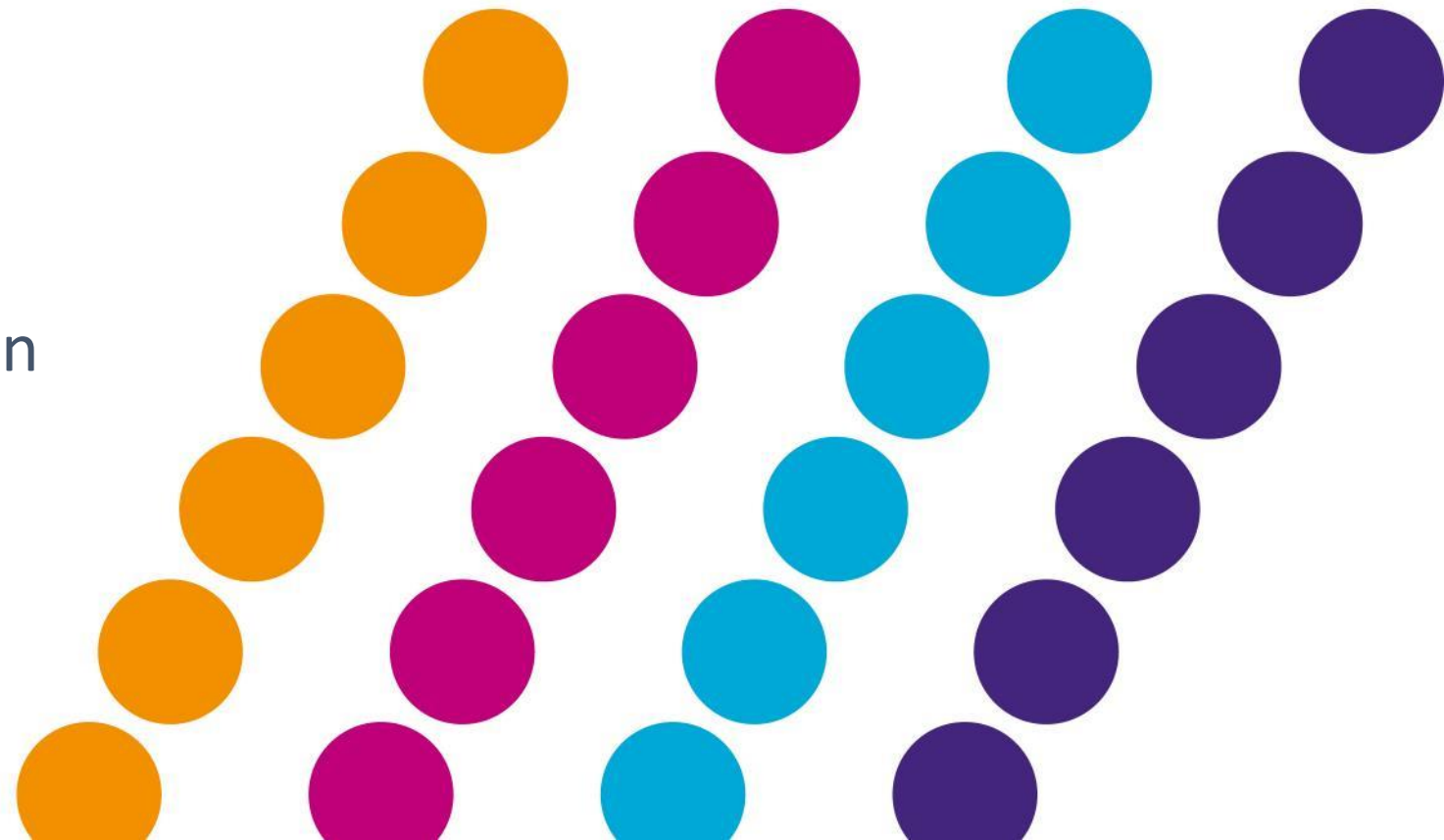# What do you do when IT hits the fan?
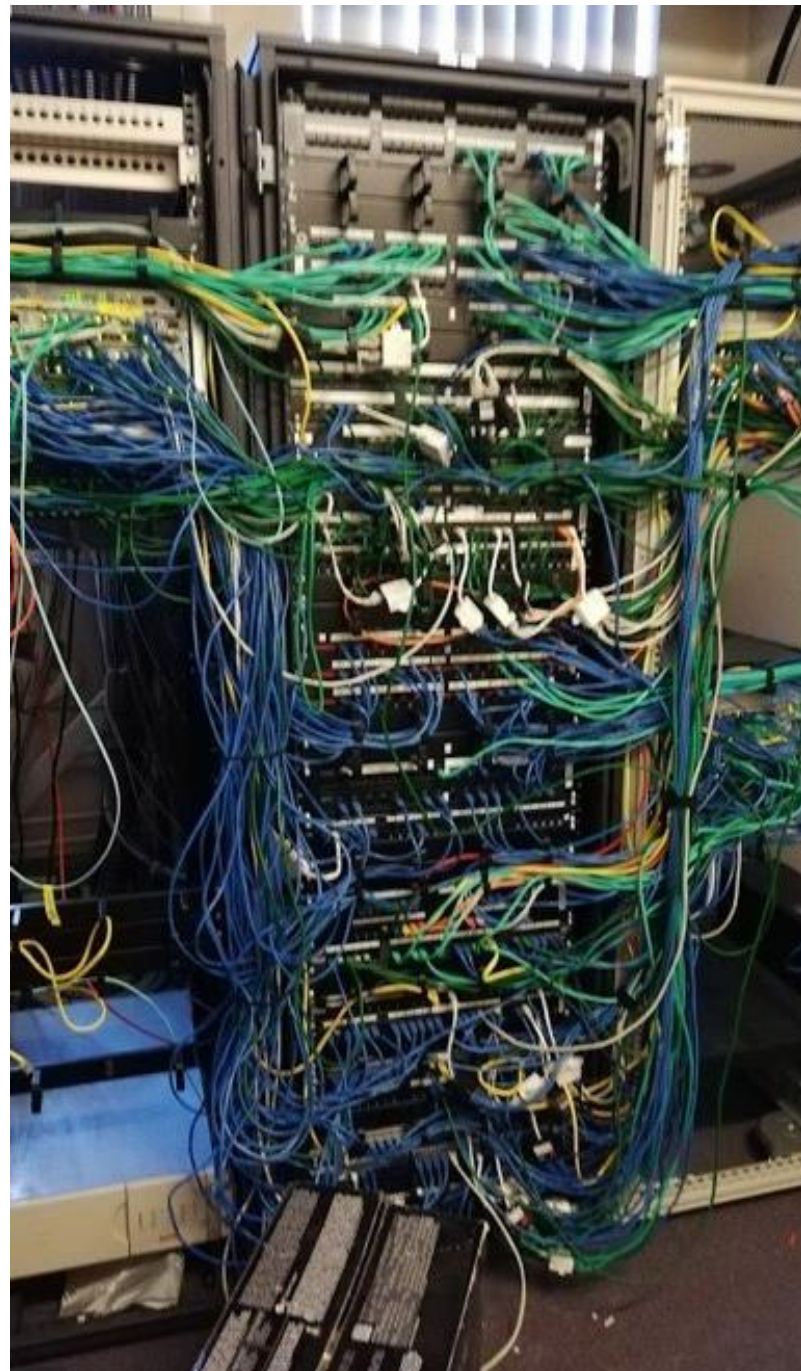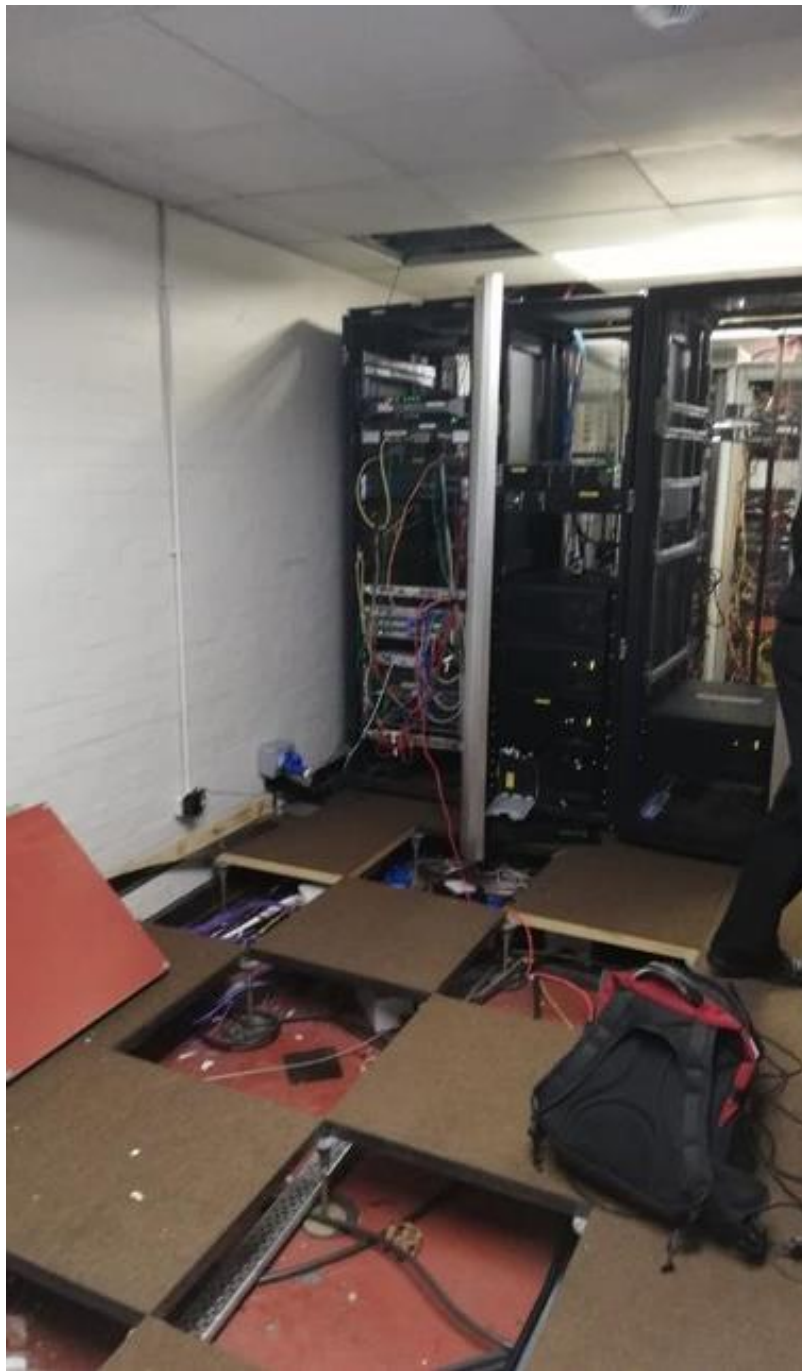
Martin Sadler

Executive Director for Information Technology and Digital

(CIO)

7th CIO in 10 years

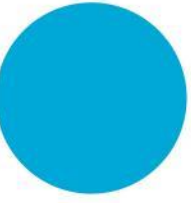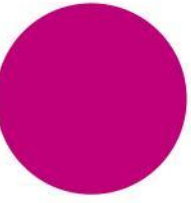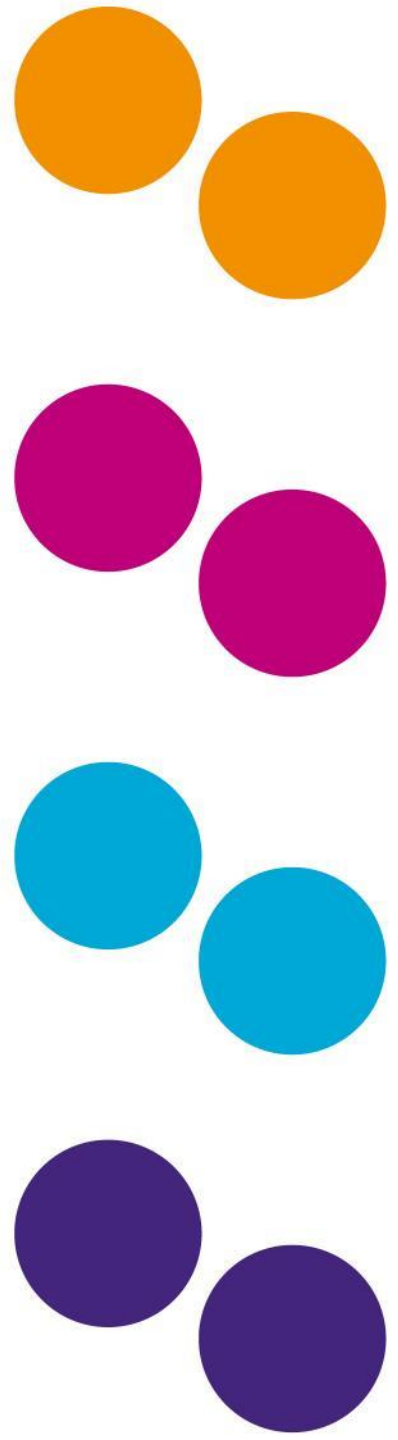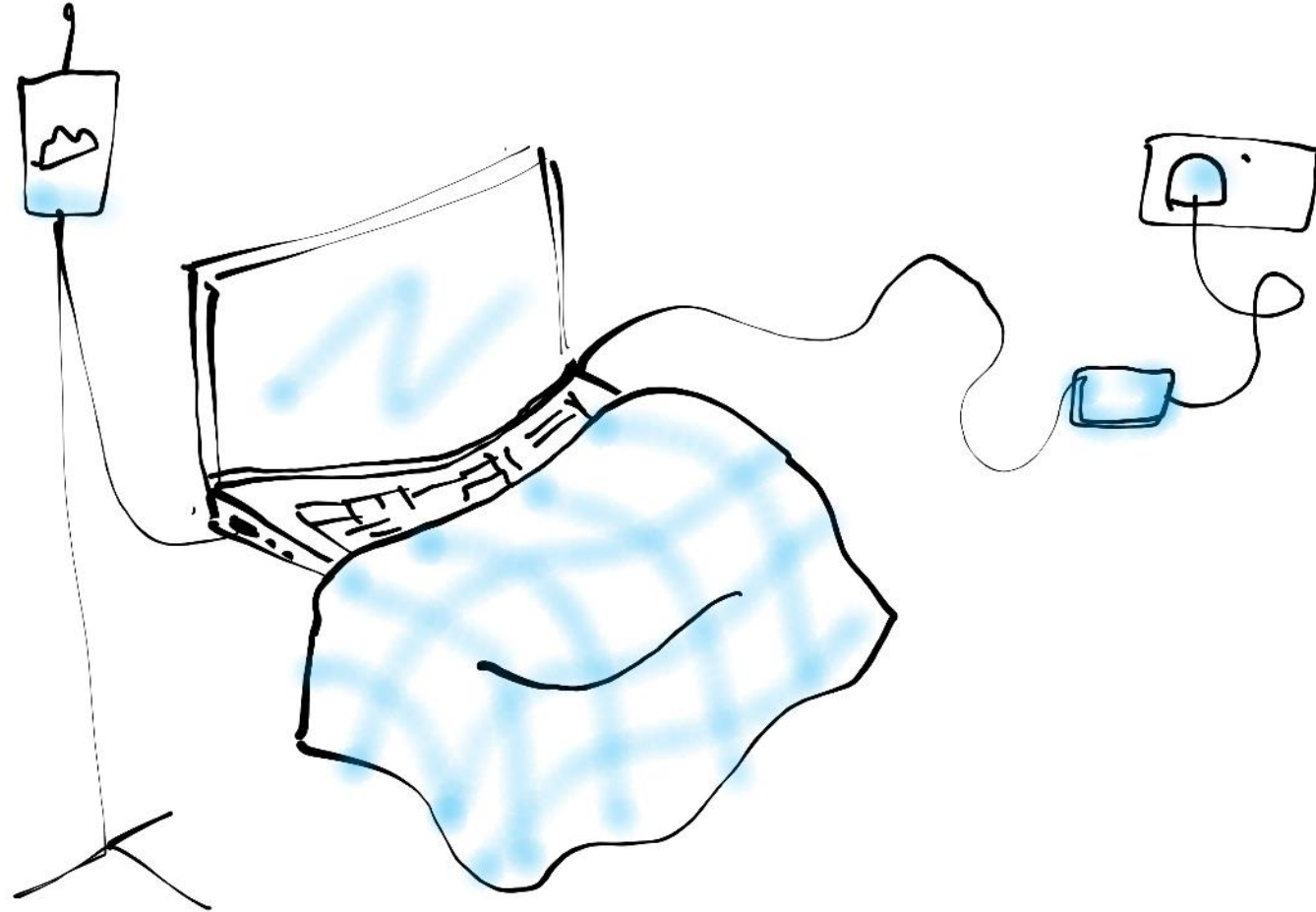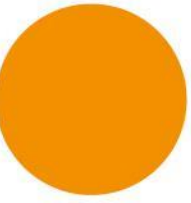# IT improvement plan to the end of 2021
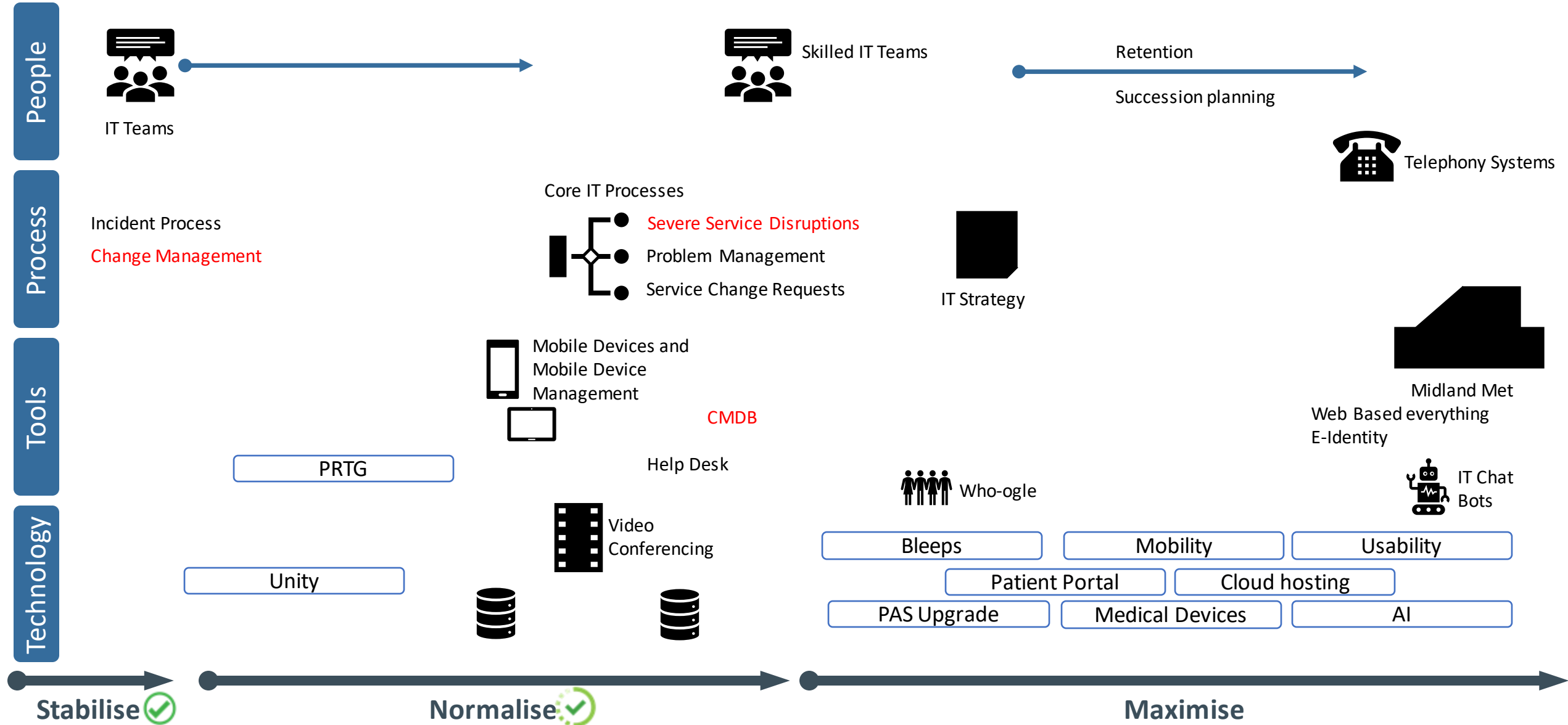
People

IT Teams

Skilled IT Teams

Retention

Succession planning

Telephony Systems

Process

Core IT Processes

Incident Process

Change Management

Severe Service Disruptions

Problem Management

Service Change Requests

IT Strategy

Tools

Mobile Devices and Mobile Device Management

CMDB

Midland Met

Web Based everything

E-Identity

PRTG

Help Desk

Who-ogle

IT Chat Bots

Technology

Video Conferencing

Unity

Bleeps

Mobility

Usability

Patient Portal

Cloud hosting

PAS Upgrade

Medical Devices

AI

Stabilise ✓

Normalise ✓

Maximise

Foundations

- Change management
- Severe Service Disruption process
- Culture change
- Information sharing

SSD agenda

1. Introductions

2. What is the situation from the end user point of view?

3. What has changed since the last meeting?

4. What are the possible causes?

5. What options do we have?

6. What option will we try?

7. How long will it take before we know whether it worked?

8. What comms do we need to issue?

9. When is the next meeting and who needs to attend?

SWBH
Inf●rmatics

Main page | Discussion

Main Page

Welcome to the Informatics Wiki Home Page!

Introduction

This Wiki is designed to be a 'one-stop' shop for **ALL** Informatics staff who need to find accurate information easily and quickly relating to all things Informatics.

It has been set up as a collaborative knowledge-based tool where we can continually expand our collective knowledge; it uses the same software that powers *Wikipedia* so has the same look and feel. The format, layout and general structure have been designed to make things as easy as possible to locate information as well as encourage contributions of knowledge content from potentially everyone in Informatics.

Like Wikipedia, the knowledge content is contained in pages known as *Articles*.

Using Search functionality

You should be able to locate and retrieve the right level and quality of detailed information for your needs without too much trouble.

There are **four** main ways to search and navigate:

1. by 'clicking' through the various **Contents** menus starting with the one just below
2. by using the 'Search informatics' box in the top right corner of this and any other page in the Wiki - you can often find the article you want by typing one or two letters that prompts a 'drop-down' list that should display the page you're looking for
3. by using the many **links** found in most articles and pages.
4. by 'clicking' through to the '**Page Index**' just below that takes you to a full **A to Z** list of every Wiki page (with links).
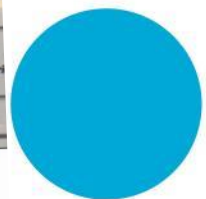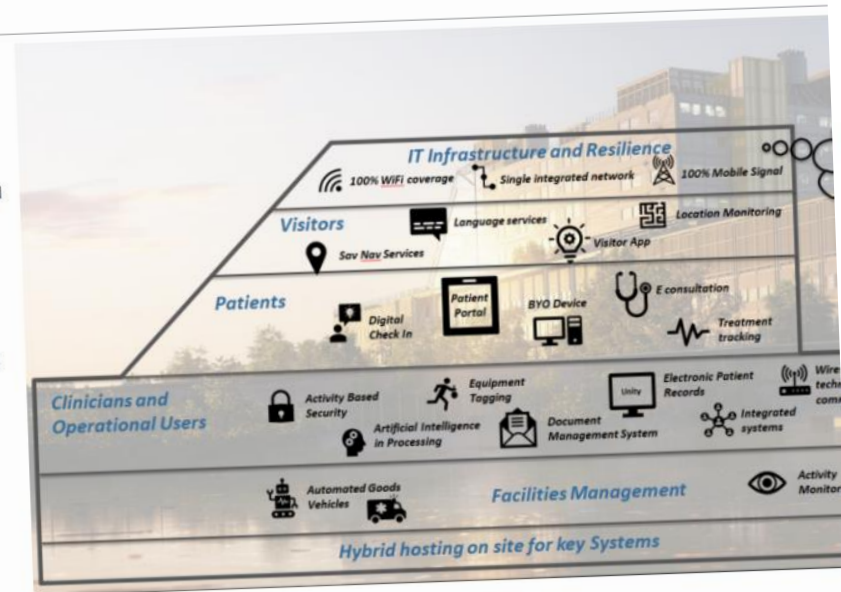
It's hoped that from this page, you'll be able to find what you're looking for within 3 to 5 'clicks'. (preferably 3).
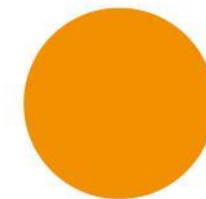
For those of you who wish to edit and contribute but unsure about how to do so then, please go to the **How to edit the Wiki** page where there is a step-by-step guide that takes you through the basics.

Page Index

Our Wiki doesn't have a specific content list though there is an **A to Z index** - click on the link on the left to access the list of all individual Wiki pages (with links to every page).
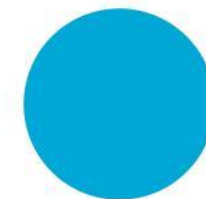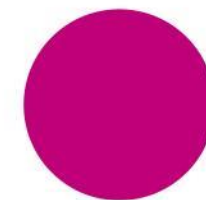
Policies and Guidelines

Navigation sidebar:

Main page
Recent changes
Random page
Help about MediaWiki

Tools

What links here
Related changes
Special pages
Printable version
Permanent link
Page information

IT Infrastructure and Resilience
100% WiFi coverage | Single integrated network | 100% Mobile Signal
Visitors | Language services | Location Monitoring
Sav Nav Services | Visitor App
Patients | E consultation
Digital Check In | Patient Portal | BYO Device | Treatment tracking
Clinicians and Operational Users | Activity Based Security | Equipment Tagging | Electronic Patient Records | Wireless tech comm
Artificial Intelligence in Processing | Document Management System | Integrated systems
Automated Goods Vehicles | Facilities Management | Activity Monitoring
Hybrid hosting on site for key Systems

The IT-Wiki

Gold applications table

Please click the [**Expand / Collapse**] link on the right hand side of the row to **access / hide** the data contained within this table which may also be **sorted** (ascending/descending) by clicking on the arrow in the desired column header.

| 1. App / System	2. Also known as	3. Description	4. Trust Application Lead	5. Key business users	6. Monitored	7. Hosted on	8. Backup schedule	9. Resilience	10. Clinical impact	11. Non-clinical impact	12. Cap Mgmt	13. No. of IT Specialists	14. Support? / By whom	15. Supported hours	16. Renewal date	17. Dependencies	18. [Collapse] Interfaces
Telepath	iLAB Pathology or LIMS	Laboratory Information Management System (LIMS)	Tobi Alabi	Pathology	No	Internally hosted	Externally managed by DXC	Yes	Major	Minor	Yes: managed by DXC	L3 / DXC IT Support	Yes: by DXC	24/7	31/08/2021	HSCN, iPM, Rhapsody, iCM	
Rhapsody	Messaging bus	Interface Engine processing all of Trusts HL7 messaging	Neil Isham	Informatics	No	Internally hosted	3 times per week	Yes: Cross-site	Major	Major	Yes: managed by Rhapsody & Informatics	2	Yes: by Rhapsody Health & Informatics	24/7	31/03/2021	All messaging systems - External and Internal ESB	All Rhapsody Interfaces
Image Exchange Portal	IEP	Image transfer portal / service	Julian Mansell	Imaging, ED, Stroke	Yes: by Sectra	External Data Centre	Externally managed by Sectra	Yes	Significant	Significant	Yes: managed by Sectra	3	Yes: by Sectra	24/7	31/05/2021	CRIS, PACS	CRIS, PACS
Alfresco	EDRMS or Alfresco EDRMS	Patient Document Management	Trish Kehoe / Pam Towers / Neil Isham	Clinicians	Yes: by PRTG	Hyper-V	None	Yes: partial	Major	Minimal	Yes: managed by Syn Apps	L3 / Sys Admin	Yes: by SynApps	Alfresco: 24/7, SynApps: 9 to 5, M to F (ex BHs)	01/08/2021	CSS (CDA), Unity	CSS (CDA), Unity
Ricoh Printing / Scanning	Printing	Integrated Trust solution using MFDs for Printing, Copying and Scanning	Mac Lines	ED & Pharmacy & Others	No	Various	N/A	Yes: Partial	Major	Significant	Yes: managed by Ricoh	5	Yes: by Ricoh	9 to 5.30 M to F	01/06/2022	HSCN	HSCN
Active Directory	AD	Core Infrastructure Directory	Tarun Dewat	Informatics	Yes: by PRTG	Hyper-V	AD Schema is backed up	Yes	Major	Major	Yes: managed by Informatics	L3	Yes: by Informatics	24/7	N/A	All trust applications that authenticate against network login	LDAP
HSCN (formerly	NHS Internet	NHS Internet Service, Health and Social Care	Sarah Cooke	All Trust staff, patients and	Yes: by BT	External Data Centre	Externally managed by	Yes	Major	Major	Yes: managed	4	Yes: by BT	24/7	Ongoing	All external access to NHS systems	No direct clinical interfaces

SSD Trending

Month	SSD 2019	SSD 2020	SSD 2021	SSD 2022
Jan	10	15	8	3
Feb	14	10	10	6
Mar	13	12	10	0
Apr	9	6	8	5
May	6	13	8	3
Jun	11	9	6	4
Jul	13	13	4	4
Aug	16	24	5	5
Sep	7	20	6	6
Oct	16	9	10	
Nov	13	13	11	
Dec	23	9	2	
Total	151	153	88	36

SSD Count By Primary Resolver

- Infrastructure
- Development Team
- Thirdy PartyDedalus
- Third Party IBM/Merative
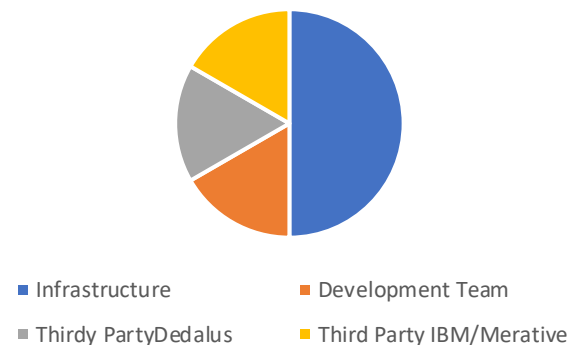
SSD Count
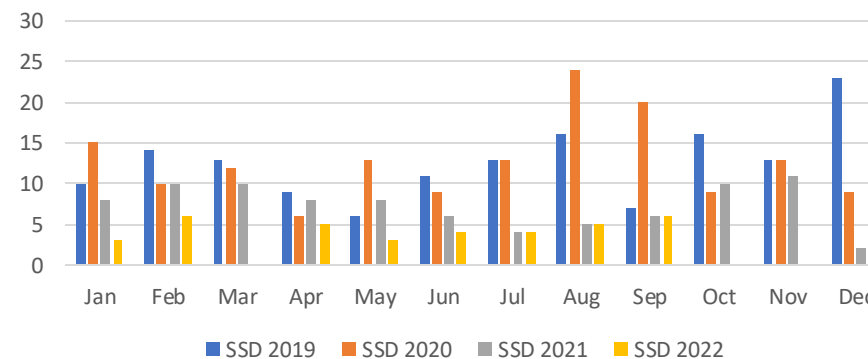
SSD 2019 SSD 2020 SSD 2021 SSD 2022

Severe Service Disruptions Trending

Month	SSD 2019	SSD 2020	SSD 2021	SSD 2022
Jan	10	15	8	3
Feb	14	10	10	6
Mar	13	12	10	0
Apr	9	6	8	5
May	6	13	8	3
Jun	11	9	6	4
Jul	13	13	4	4
Aug	16	24	5	5
Sep	7	20	6	6
Oct	16	9	10	4
Nov	13	13	11	4
Dec	23	9	2	3
Total	**151**	**153**	**88**	**47**

NEWS

Treatments cancelled amid Sandwell and Birmingham IT glitch

🕐 10 December 2021
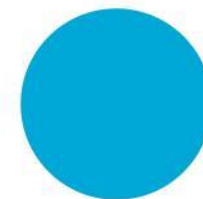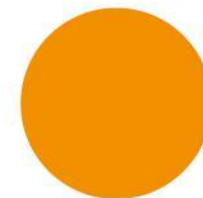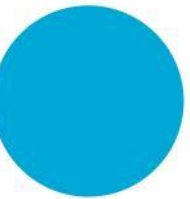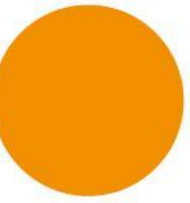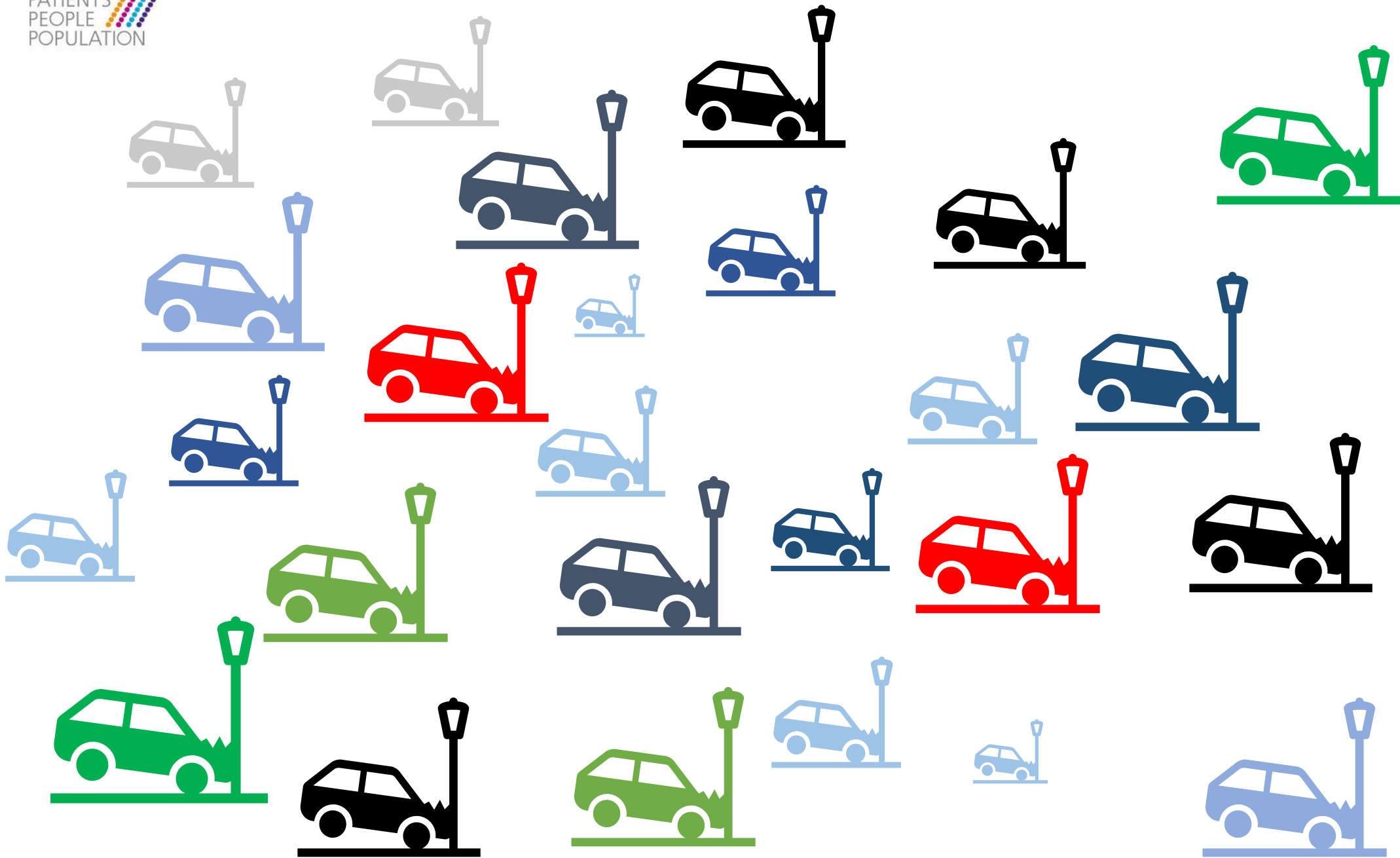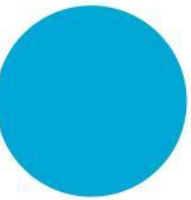
What happened

VMware vSphere Update 3

During rollback to a U2 systems failed

Where backups existed they were lost or corrupted, data was overwritten

26 systems were adversely impacted

ESX Clusters

HP Nimble Storage
[VM Op System Hosting]

MSA Storage
[VM Server VEEAM Backups]

AWS Cloud Backups

Direct Connect

Being worked as a future state capability

12 hourly snapshot

Enabled since the incident. Not previously available due to lack of capacity. Now available due to cloud migration freeing up space.

VEEAM backups hosted on old VMware cluster

VEEAM backups hosted on new VMware cluster

| VM | VM | VM | VM |
| VMware | | | |
SWHOSTDMZ01
Version 6.5

| VM | VM | VM | VM |
| VMware | | | |
SWHOSTDMZ02
Version 6.5

SWBH DMZ CLUSTER

| VM | VM | VM | VM |
| VMware | | | |
SW-ESX-10
Version 7.0.U2

| VM | VM | VM | VM |
| VMware | | | |
SW-ESX-09
Version 7.0.U2

| VM | VM | VM | VM |
| VMware | | | |
SW-ESX-04
Version 7.0.U2

| VM | VM | VM | VM |
| VMware | | | |
SW-ESX-03
Version 7.0.U2

| VM | VM | VM | VM |
| VMware | | | |
SW-ESX-02
Version 7.0.U2

| VM | VM | VM | VM |
| VMware | | | |
SW-ESX-01
Version 7.0.U2

SWBH ESX CLUSTER

[All 6 clusters were running 7.0.U3 at the time of the incident]

| VM | VM | VM | VM |
| VMware | | | |
SW-ESX-INF01
Version 7.0.U2

| VM | VM | VM | VM |
| VMware | | | |
SW-ESX-INF02
Version 7.0.U3

[Switched off. Was on at the time of the incident]

SWBH INFRASTRUCTURE CLUSTER

| VM | VM | VM | VM |
| VMware | | | |
SW-VEEAM-HOST01
Version 6.5

VEEAM CLUSTER

Timeline - 2021

5 Oct – Release available

27 Oct – Applied update

30 Nov – Rollback starts and fails

25 Oct – S&WB CAB

9 Nov – Advised to roll back

Severe Service Disruption

SWBH Informatics

Page | Discussion

Severe Service Disruption SSD

Overview [edit]

We call IT Major incidents **Severe Service Disruptions**, SSD's. Because that is what they are.

They have a set agenda, are focussed on the end user experience and are dynamically managed.

If you are running the SSD then the Agenda is as follows:

Severe Service Disruption Agenda

1. **Introductions** (The co-ordinator, an end user representative, a technical team representative)

2. What is the current situation from the end users point of view (Is this an SSD?)

3. What do we know has changed to cause this or since the last meeting?

4. What could be the possible cause?

5. What options do we have to try and restore service or introduce a work-around?

6. Which option should we authorise to go away and try - this is the one most likely to relieve the situation

7. When will we know whether that action has had an impact or not?

8. When shall we meet again and who should attend?

9. What do we need to communicate?

10. The meeting ends – repeat until unnecessary (decided at point 1)
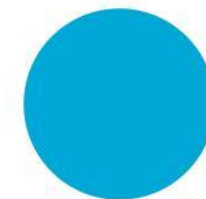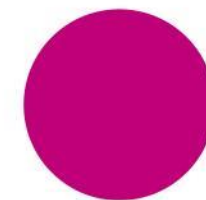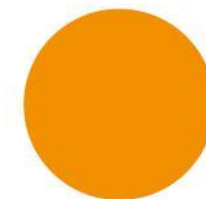
NOT A "MAJOR INCIDENT"

NOT A "TECHNICAL BRIDGE"
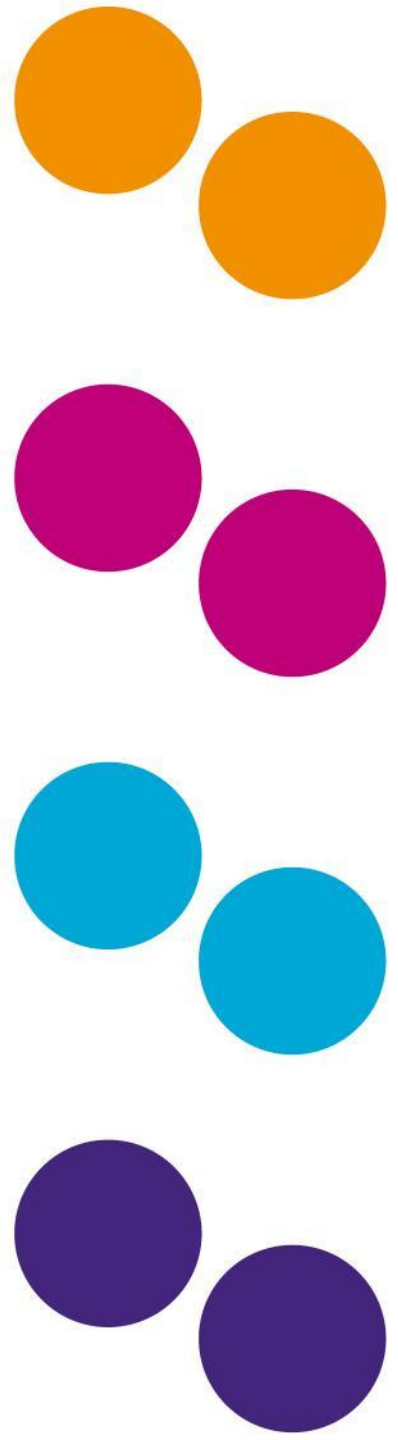
RESTORING CUSTOMER
ABILITY TO WORK FOCUSSED

What we did

Start the SSD process – Quickly became a Major Incident

Reach out to peers

Alert the ICO

Tell one story

Call in the experts

Tracking

Spreadsheet columns - customer

> Clinical Area

> Service

> Vendor

> Clinical impact

> Next expected update

> Server Built

> Application Applied > Data Restored from Date > Tested > Service Status > Last data backup >

Update > RFC Number >

Application restore required > Server rebuild required/resource >

Database restore required/resource > System recovery actions
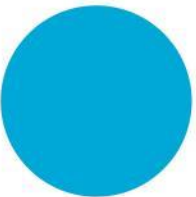
Spreadsheet columns - IT

> Server Built

> Application Applied

> Data Restored from Date

> Tested

> Service Status

> Last data backup

> Update

> RFC Number

> Application restore required

> Server rebuild required/resource

> Database restore required/resource
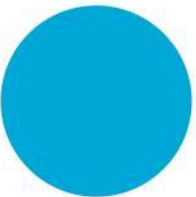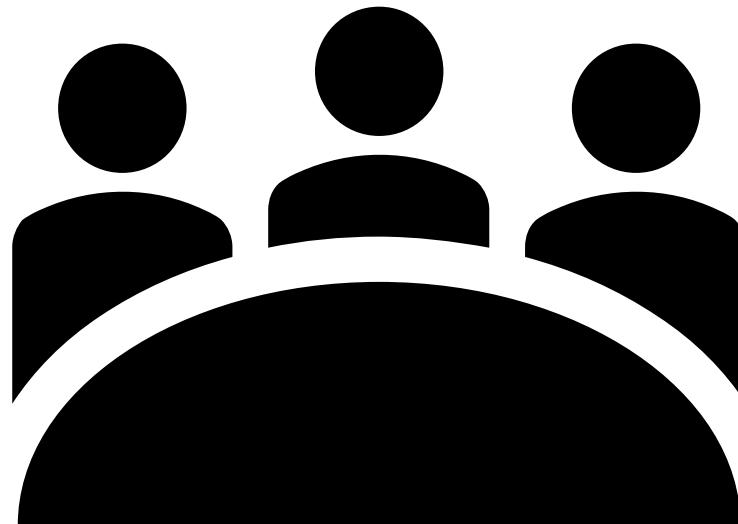
> System recovery actions
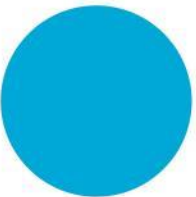
Good stuff

We told everyone
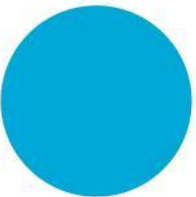
We asked for help

We kept the end user informed

We got an independent audit of cause, impact, process and people

Medisoft and opthalmology

- Loss of systems – backup corrupted

- Different impact depending on specialism

- Data Recovery was of the structured records – free text narrative lost

- Medisoft re-engineered records

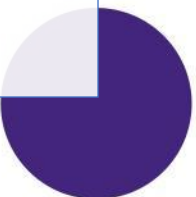20% of global customer were impacted

There are companies dedicated to restoring lost data from the supplier

We needed to make sure that we followed the manual completely and we use the service at our own risk

External recommendations

- Test your business continuity exercises

- Review change management policies with regards to risks and rollbacks

- Review back-up strategies

- Carry on with cloud investment plans

- Review contact details with all suppliers

- Get some more substantive staff

Finally

- We got our response from the ICO

- The clinicians worked amazingly through the adversity

- Medisoft were amazing

- We continue to move services to the cloud

- Our culture and our people have changed

Personal impact

Thanks. Any questions