

PFCC Decision Report

Report reference number: 023-22

Classification: OFFICIAL

Title of report: IT INFRASTRUCTURE – TECHNICAL REFRESH

Area of county / stakeholders affected: FORCE WIDE

Report by: STEPH GILL (IT SERVICE DELIVERY MANAGER)

Chief Officer: MARK GILMARTIN (DIRECTOR OF SUPPORT SERVICES)

Date of report: 25/01/2022

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1. Executive Summary

To seek approval of the Stage 2 Technical Infrastructure Refresh Business Case (appendix A) to proceed with the programme of work required to deliver the IT Infrastructure Technical Refresh including approval of £1518.8k capital and £32.8k recurring revenue funding in 2022/2023.

2. Recommendations

This proposal requests continued investment in server and storage infrastructure, network infrastructure post the move of both forces' data centres to Crown Hosting and the remaining Essex estate IT infrastructure that is required to maintain internal force network connectivity and security. This proposal also includes the End User Device Replacement and the digital forensics equipment replacement programmes

Under the End User Computing (EUC) capital spend profile, the cost for replacement laptops and desktops for ESSEX ONLY has been removed from all years.

A separate business case will be presented to decide on the future procurement route for laptop devices. Wider rollout and savings can be made by moving from a three-year purchase replacement programme to a three-year lease. IT will present the data to the Essex Police Chief Officers Group (COG) and the PFCC to make a final decision. £1255.7k of funding from the Stage 1 Business Case is not being returned for savings and is being allocated to the separate business case.

Server and network spend will be across Quarter 3 and Quarter 4 as the focus of resource activity will be the migration to the new data centre. End user devices and digital forensics equipment will be purchased across Quarter 1, Quarter 2 and Quarter 3. All spend will be completed during financial year 2022/23.

It is therefore recommended that approval of £1,518.8k capital and £32.8k recurring revenue funding, outlined in the Stage 1 Business Case, is agreed for the Technical Refresh programme to continue in the 2022/23 financial year; that £1,255.7k is held from the Stage 1 Business Case, and a second Stage 2 Business Case be presented at the June Strategic Board.

3. Background to the Proposal

The annual cycle of Technical Refresh across IT infrastructure and end user devices is essential to maintaining resilient access to IT systems for all police officers and support staff, which remedies the risk seen in previous years where the IT infrastructure was unstable. The Technology Refresh process is the cycle of regularly updating key elements of an IT infrastructure to maximise system performance. Instead of using systems until they can no longer function, it is good practice proactively to upgrade or replace components of an infrastructure on a regular schedule. Maintaining IT infrastructure is costly and can be more so for legacy systems and services. Legacy technology that has not been updated can lead to poor performance and service delivery, inefficiencies in energy and space consumption, and bloated administrative and maintenance overhead. Alongside this, there are increased risks of maintaining ageing IT assets where a failure is likely rather than just possible. This will add to corporate concerns and budget challenges.

A Tech Refresh programme relates to more than just infrastructure, which is by and large made up of servers, storage, network devices and all the services these require to function. Tech Refresh also extends to the majority of IT services that are consumed from applications to services that are used by everyone in the organisation to a single user requirement. All users have a need to use laptops, desktops and mobile devices. By having a Tech Refresh programme critical infrastructure and continued investment in the IT infrastructure will address current in-year capacity limitations, return the wider IT infrastructure to a position where it is fit for purpose and more able to meet in-year growth. The Technical Infrastructure Refresh programme will improve performance and functionality and continue to improve our security position by eliminating security issues identified by IT Health Checks. Significant growth in data storage requirements will be subject to stand alone business cases submitted by the relevant organisational department

This work will support the wider IT Programme of Work, the new Data Centre Migration Project, Operation Zenith (Kent) and will have a major positive impact on

our IT security by removing old unsupported IT systems. The move to more 'agile' devices from conventional desktops will support a more agile work force which is an enabler for proposed estate changes and will enable new working practices and maximise the use of valuable office space.

4. Proposal and Associated Benefits

Due to the nature of a business-as-usual Technical Refresh Programme such as this, which requires investment in technology, there are no cashable savings. However this proposal presents non-cashable benefits as follows:

- Ongoing replacement of network switches will reduce the cost of additional maintenance and faulty parts (which would otherwise be in excess of capital cost for replacement)
- Reduction in costs of support for aging ill-maintained network switch and firewall equipment.
- Reduction in hardware failure callout costs due to investment in equipment refresh.
- Avoidance of retrospective logging cost should ill-maintained or aging systems be unavailable. e.g., Back record conversion (BRC) costs for 1 week of downtime for Storm - £17,518.
- By maintaining systems on better designed new storage infrastructure, de-duplication and more efficient archiving will reduce the amount of data being stored and therefore the costs associated with that storage.
- Continued data protection (GDPR fine for loss of data - £20 million)
- Maintaining Public Services Network (PSN) Accreditation / security compliance. PSN is the pan-government network that all central and local government departments use to connect to each other.
- Increased system availability
- Increased compatibility with future technology
- Maintenance of improved networking capability will allow the development of more integrated systems, removing reliance on removable data. The average data protection fine for a lost DVD is currently £100k.
- Reduction in potential costs incurred when third parties are required to assist with recovery of failed systems and data from ill-maintained infrastructure
- Greater efficiency when accessing saved data on the new storage platforms will result in less man-hours to complete tasks
- Maintenance of newly installed network circuits will be able to accommodate greater bandwidth without the requirement for increasing circuit rental costs (e.g., five years ago our BT internet service provision was 100mbps for £17,640 pa; new circuits are now available providing 1000mbps for £11,820 pa)
- Efficiencies possible within business working practices due to higher network speeds enabling business processes to be re-assessed.
- Risk mitigation of loss of telephony capabilities by ongoing replacement of aging IP telephones which are a critical part of our infrastructure.
- Maintenance of improved Wi-Fi provision will be an enabler to maximise the capability of mobile devices and increase the value provided by an increasingly agile workforce.

- Maintenance of improved Wi-Fi provision is also critical to ensure that Kent and Essex are able to comply with GDPR guidelines by central filtering of attempts to access malicious sites.
- Greater support for partnership working on police premises will be enabled by an adequately maintained Wi-Fi provision.
- Replacement of aging end user devices is an enabler for full exploitation of agile working and latest operational system upgrades required.

5. Options Analysis

Maintaining an IT infrastructure that is fit for purpose is no different to maintaining any environment, from buildings (bricks and mortar) to vehicles to home goods. There is a requirement to maintain, replace or support these in the most appropriate and cost-effective way. As an environment or equipment ages maintenance becomes increasingly expensive or in some instances may no longer be available or possible. The risk increases exponentially which can result in ever increasing costs and will no longer be cost effective, or the environment or equipment will fail and become unusable. Mission critical infrastructure will always be prioritised according to risk whenever technical refresh replacement is being planned

6. Consultation and Engagement

The following parties have been consulted, internal to Essex Police:

Information Security

7 Force Procurement

Corporate Finance

Strategic Change

Estates

Learning and Development

Professional Standards Department

7. Strategic Links

The Essex PFCC's Police and Crime Plan 2021 – 2024 states the intent to:

- *“Use technology more to help Essex Police be visible in their communities including developing mobile applications and enabling better connectivity”.*
- *“Invest in Body Worn Video and Tasers to help keep public, officers and staff safe and be effective in their roles”.*
- *“Continue to maximise the benefits of collaboration between Essex and Kent Police”.*
- *“Identify drivers who need remedial education by investing in technology to enable the police to process the increasing volume of video evidence supplied from dash-cams...”.*

Technical infrastructure refresh will support all the above statements. Over the next 12 months, work will continue to upgrade, replace, and migrate IT systems to resilient, scalable in-house storage servers, a flexible wide area network that enables the force to meet new demands and the innovation of new emerging data technology. Increased activity will take place to consume and exploit cloud-based

services and Microsoft Office 365 which includes the exploitation of SharePoint Online and other O365 tools. Alongside the infrastructure investment, there is additional work to upgrade, rationalise and streamline the application environment. These projects together will provide a stable, low maintenance infrastructure platform that is the critical foundation to implementing the enabling IT solutions that will transform Essex Police’s operational policing over future years.

8. Police operational implications

The technical infrastructure refresh programme has been planned in line with the Essex Chief Officer Groups desire to have a secure, stable and resilient platform on which all technical operational policing activity can take place, focusing on capacity and continuity of service.

9. Financial implications

A Stage 1 Business Case detailing the financial data has been submitted and approved by Essex Police’s Finance Team with the requested funding already included in the planned 2022/23 budget. We are not seeking any additional funding. This business case requests approval to spend approved funding of £1,551.6k (for Essex) for the financial year 2022/23, comprised of £1,518.8k for capital and £32.8k for revenue recurring cost.

Capital funding requested has reduced with the removal of £1,255.7k for replacement laptops and desktops from the Stage 2 Business Case that were included in the Stage 1 Business Case. The remaining £1,255.7k of capital classified as ‘Subject to Approval’ will be considered under a separate Stage 2 bid as the source of funding will be dependent on the outcome of the laptop / desktop buy vs lease options paper currently being considered.

For the 2022/23 financial year, revenue recurring costs have increased by £20.3k due to growth in data storage costs in both Elastic Cloud Storage (ECS) and physical Dell Isilon storage costs increasing due to the data centre migration.

Table 1 below details the Stage 1 Business Case compared to the Stage 2 Business Case for capital funding and revenue recurring funding proposals in 2022/23 only.

Table 1

FUNDING SUMMARY	CAPITAL	REVENUE	REVENUE	Total
(ESSEX ONLY)		SET UP	RECURRING	
	£'000	£'000	£'000	£'000
STAGE 1				
Year 1 (2022/23)	2,774.5	0.0	12.5	2,787.0
TOTAL	2,774.5	0.0	12.5	2,787.0

FUNDING SUMMARY	CAPITAL	REVENUE	REVENUE	Total
(ESSEX ONLY)		SET UP	RECURRING	
STAGE 2				
Year 1 (2022/23)	1,518.8	0.0	32.8	1,551.6

TOTAL	1,518.8	0.0	32.8	1,551.6
VARIANCE: Stage 1 to Stage 2 FUNDING (SURPLUS) / DEFICIT	(1,255.7)	0.0	20.3	(1,235.4)

Table 2 provides a summary of the expected costs of technical infrastructure refresh from 2022 to 2027, including a -1-year (2021/22) comparison figure. We are asking for approval of spend in Year 1 2022/23 only as part of this decision sheet.

Table 2

SUMMARY OF COSTS (Page 18 for detail costings)														
	Year -1 2021/22 £k		Year 1 2022/23 £k		Year 2 2023/24 £k		Year 3 2024/25 £k		Year 4 2025/26 £k		Year 5 2026/27 £k		TOTAL Year 1-5 £k	
	KENT	ESSEX	KENT	ESSEX	KENT	ESSEX	KENT	ESSEX	KENT	ESSEX	KENT	ESSEX	KENT	ESSEX
						X		X		X		X		
Capital	1805.1	1320.0	2838.3	1518.8	3840.5	1908.1	2598.9	1711.2	2852.3	1901.6	3049.8	1383.9	15075.8	8423.6
Revenue														
Set up	0	22.3	0	0	0	0	0	0	0	0	0	0	0	0
Recurring	94.4	1.9	106.3	32.8	124.8	102.1	120.2	138.9	131.4	195.0	136.5	246.5	619.3	715.4
Total Revenue	94.4	24.2	106.3	32.8	124.8	102.1	120.2	138.9	131.4	195.0	136.5	246.5	619.3	715.4
TOTAL	1899.5	1344.2	3042.6	1551.6	3965.3	2010.2	2717.1	1850.1	2783.7	2096.6	3186.3	1630.4	15695.	9138.9

10. Legal implications

The Essex server and network support and maintenance are covered under a contracted agreement with a supplier. We are contractually bound to maintain the hardware and its supporting infrastructure as part of this support and maintenance. Future contracts will be required for the data centre migration which will carry a dependency that Essex Police has adequate infrastructure in place to perform service and data migration from on premise to hosted data centre

11. Staffing implications

No staffing implications have been identified in the report.

12. Equality, Diversity and Inclusion implications

A secure, resilient, stable infrastructure allows service such as M365 (Teams, Yammer, SharePoint etc) to support officers and staff with technical reasonable adjustments as well as providing force wide platforms to share, engage and present equality, diversity and inclusion awareness and training.

13. Risks and Mitigations

An infrastructure that has the latest security developments and is running the latest versions of operating system software etc, will greatly help address the cyber security risk of a robust infrastructure to protect the confidentiality, integrity and

availability of our technology services and data (Identify, Protect, Detect, Respond, and Recover). The risk of cyber-attack is relevant to both forces.

Remediation work of the IT infrastructure continues to be undertaken to upgrade and replace systems and solutions where required to deliver a stable, resilient and performant infrastructure. Much of the work planned within this business case will help mitigate this risk.

The Stage 2 Technical Infrastructure Refresh Business Case also addresses an Essex only risk which relates to the Essex Data Centre. There will be few servers and no storage requirements within the current Essex 'N' Block data centre which will reduce the power and cooling requirement and avoid a costly upgrade or, worse, the risk of not having any capacity for any new IT systems.

14. Governance Boards

The Stage 2 Technical Infrastructure Refresh Business Case has been through the following governance boards:

03/02/2022 Digital Transformation Board (collaborative Essex Police / Kent Police)
07/02/2022 Chief Officer Management Board, Kent Police
09/02/2022 Chief Officer Group, Essex Police
08/03/2022 Strategic Board

15. Links to Future Plans

The ongoing refresh of our technical infrastructure is pivotal to IT providing a full catalogue of services to Essex Police.

Growth in officers and staff increase the capacity requirements on all elements of server, network and end user device services.

An ongoing refresh programme supported by appropriate funding allows IT Services to ensure the Police and Crime Plan promises to “Deliver over 300 more officers” and “Use technology more to help Essex Police to be visible in their communities...” are fulfilled, by ensuring the supporting services and infrastructure that are needed to deliver those promises are secure, resilient, and sustainable.

As Essex Police looks at its physical estate, including the Headquarters site where much of the server and infrastructure service is based, IT needs to ensure it keeps ahead of the requirement for relocation of services (data centre migration). This is only possible if the technical infrastructure is up to date and performing securely, efficiently, and resiliently, only achieved with a robust refresh programme.

16. Background Papers and Appendices

Appendix A – 2022/23 Stage 2 Business Case Technical Infrastructure Refresh

Report Approval

The report will be signed off by the PFCC’s Chief Executive and Chief Finance Officer prior to review and sign off by the PFCC / DPFCC.

Chief Executive / M.O. Sign: 

Print: P. Brent-Isherwood

Date: 24 February 2022

Chief Finance Officer Sign: .....

Print: Julia Berry.....

Date: 25 February 2022.....

Publication

Is the report for publication? YES NO

If ‘NO’, please give reasons for non-publication (Where relevant, cite the security classification of the document(s). State ‘None’ if applicable)

However Appendix A is not to be published as it contains commercially sensitive data

If the report is not for publication, the Chief Executive will decide if and how the public can be informed of the decision.

Redaction

If the report is for publication, is redaction required:

1. Of Decision Sheet? YES NO 2. Of Appendix? YES NO

If 'YES', please provide details of required redaction:

Appendix A is not to be published as it contains commercially sensitive data

Date redaction carried out:

Chief Finance Officer / Chief Executive Sign Off – for Redactions only

If redaction is required, the Treasurer or Chief Executive is to sign off that redaction has been completed.

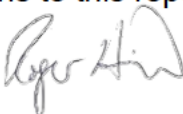
Sign:

Print:

Chief Executive / Chief Finance Officer

Decision and Final Sign Off

I agree the recommendations to this report:

Sign: 

Print: Roger Hirst

PFCC

Date signed: 3 May 2022

I do not agree the recommendations to this report because:

.....
.....
.....

Sign:

Print:

PFCC/Deputy PFCC

Date signed: