UPDATED RESPONSE

A FIRE REPORTING MOBILE APP FOR LONDON

2016

CONTENTS

INTRODUCTION

Mobile applications are now commonly a part of everyday life for a large number of people in London and across the country. Mobile applications empower users to carry out an ever increasing number of tasks from online shopping, reporting fly-tipping to managing their bank accounts.

However, the emergency services have not yet caught up with these commonplace technological developments and are still solely reliant on systems and processes first launched in 1937.

More than ever there is an expectation that a task or request can be completed using a mobile application, and it is high-time that contacting the emergency services, especially fire brigades, was entirely possible via a mobile application.

While any mobile application should not replace the existing 999 telephone system, it would successfully supplement it – enabling users to automatically provide far more accurate information when contacting their local fire brigade in an emergency.

London has a history of leading the way in the development of the emergency services, being at the forefront of organised firefighting and the birthplace of the 999 telephone system.

It should therefore be at the cutting edge of the emergency services, especially the London Fire Brigade (LFB), using mobile applications to receive emergency and non-emergency information.

CONTACTING THE EMERGENCY SERVICES

On 30th June 1937, London's new emergency telephone number was unveiled. A notice in the Evening News advised the public how to use it:

> "*Only dial 999... if the matter is urgent; if, for instance, the man in the flat next to yours is murdering his wife or you have seen a heavily masked cat burglar peering round the stack pipe of the local bank building.*
>
> "*If the matter is less urgent, if you have merely lost little Towser or a lorry has come to rest in your front garden, just call up the local police.*"[1]

While the initial public focus on the new 999 service was contacting the police, it had in fact been developed following the death of five women during a fire at 27 Wimpole Street, Marylebone[2] in 1935.

During questions to the Postmaster General in the House of Commons on 9th December 1935, Captain Alec Cunningham–Reid MP, Member of Parliament for St Marylebone,

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1. Dial 999: 75 years of emergency phone calls, BBC News, June 2012 - http://www.bbc.co.uk/news/magazine-18520121

2. Why 999 for an emergency, BBC News, May 2010 - http://news.bbc.co.uk/local/london/hi/people_and_places/history/newsid_8675000/8675199.stm

suggested that the deaths were caused because of an inefficient telephone exchange operator.

This resulted in calls from a "telephone subscriber" close to the fire being unable to be put through to his local Fire Brigade and summons assistance[3].

Subsequently the then Postmaster General, Major George Tryon MP, ordered an inquiry into the entire way emergency calls, especially those related to fires, were dealt with[4].

This directly led to the creation of the 999 emergency telephone number, after it was decided that the process of dialling 0 for the operator, in order to request to be put through to the emergency services, was regularly causing long delays and jammed switchboards.

The new system initially covered a 12 mile radius around Oxford Circus, and during its first week there were 1,336 calls made to 999.

Glasgow became the second city to introduce the service in 1938, and it was extended to all major cities and towns in the UK by 1948[5].

In 2014/15 there were 171,682 calls to the LFB via the 999 telephone number[6].

A SMARTPHONE SOCIETY

As a general rule, the public is now "digital by default" according to the Institute of Engineering and Technology. The number of individuals who favour using data to communicate rather than their voice is growing. Most telephone calls are now made from mobile telephones, and the number of these calls being made via smartphones is growing exponentially[7].

Modern smartphones have extensive capabilities including things like call trace, text-based messaging, still image and video production software, Global Positioning System (GPS) enhanced mapping services, and the ability to share data easily and quickly across a variety of platforms.

In recent years, the growth of smartphone ownership in the UK has seen them present in at least two-thirds of households, even overtaking the number of laptops. Also, for the first time in 2015, the smartphone became the device internet users said was most important for connecting to the internet – with users spending on average over two hours a day online.

3. Emergency Telephone Call (Wimpole Street Fire), Hansard, December 1935 - http://hansard.millbanksystems.com/commons/1935/dec/09/emergency-telephone-call-wimpole-street

4. Emergency telephone calls – Postmaster General promises an inquiry, Manchester Guardian, December 1935 - http://static.guim.co.uk/sys-images/Guardian/Pix/pictures/2012/6/29/1340967292058/999-inquiry-001.jpg

5. Happy Birthday 999! The UK's emergency call service turns 75, BT, May 2014 - http://home.bt.com/news/bt-life/history-of-bt/happy-birthday-999-the-uks-emergency-call-service-turns-75-11363796759046

6. Fire deaths cut in half, London Fire Brigade, June 2015 - http://www.london-fire.gov.uk/news/LatestNewsReleases_fire-deaths-cut-in-half-says-london-fire-brigade.asp#.VtcFkfmLTct

7. Contacting the Emergency Services in the Digital Age, Institute of Engineering and Technology, June 2015 http://www.theiet.org/factfiles/comms/999-digital-page.cfm

Smartphones are routinely used for a large range of non-communication based activities, and as of May 2015, 89.5 per cent of premises across the UK had outdoor coverage from at least one 4G mobile network, with 99 per cent of UK premises having outdoor 2G and 3G services from at least one operator[8].

The growing ownership of smartphones is also increasing the ease of individuals to connect with each other via social media platforms, which in turn is greatly increasing the amount of non-voice data shared[9].

While there is often considered to be a significant age divide between those who own a smartphone – with young people being more likely to own such a device, the gap is continually narrowing.

While smartphones are owned by 90 per cent of 16-24 year olds, 55-64 year olds are also seeing a growth in the number of smartphones owned – with the percentage more than doubling since 2012 from 19 per cent to 50 per cent[10].

Year on year these percentages are only expected to increase, with already at least 78 per cent of the public never leaving home without their smartphone[11].

The availability of mobile telephones initially led to a drastic increase in the number of calls received by the emergency services – although this has begun to plateau across all of the UK's blue light services. Specifically in the LFB, over the last five years there has been a 21 per cent reduction in the number of calls received[12].

EXISTING USES OF MOBILE TECHNOLOGY BY FIRE SERVICES AND FIRE DEPARTMENTS

Internationally Fire Departments use mobile applications to provide fire safety advice and warn subscribers about risks in their local areas.

For example, the FireReady App, designed and managed by the Government of Victoria, Australia provides tailored bushfire warnings and information to those located within the State of Victoria.

The application collects and publishes data from emergency services including the Country Fire Authority, Metropolitan Fire Brigade and the Department of Environment, Land, Water and Planning. It uses this information to provide incident summaries and warnings to users - helping them to make informed decisions about their safety and property.

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8. The Communications Market Report, Ocfom, August 2015 - http://media.ofcom.org.uk/news/2015/cmr-uk-2015/ http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr15/CMR_UK_2015.pdf

9. We're all connected: The power of the social media ecosystem, Richard Hannah, May 2011 - https://mccti.hugoramos.eu/Redes_Sociais_Online/TEXTOS_AULAS/TEXTO_AULA_09_We%E2%80%99re%20all%20connected%20The%20power%20of%20the%20social%20media%20ecosystem.pdf

10. The UK is now a smartphone society, Ofcom, August 2015 -

11. Our mobile planet UK, Ipsos MediaCT, May 2012 http://www.mmaglobal.com/files/UK_English.pdf

12. Fire deaths cut in half, London Fire Brigade, June 2014 - http://www.london-fire.gov.uk/news/LatestNewsReleases_fire-deaths-cut-in-half-says-london-fire-brigade.asp#.VtbDAPmLTct

Users created a "watch zone" which enables them to receive location specific notifications when warnings are issued and when incidents occur. There is also the ability for the application to provide general notifications and warnings which are not location-specific[13].

The Sacramento Fire Department, in Sacramento, California has a mobile application which not only enables the publishing of notices and alerts, but also enables users to report concerns directly from their smartphone.

While not replacing the option to directly call the Sacramento Fire Department, the application supplements citizens' ability to get in contact with their local Fire Department in order to report incidents and fire risks.

The application also includes a mapping feature which provides users with the locations of fire stations, hospitals and police stations. In addition, the application also provides the Sacramento Fire Department's phone and email directory and directly links to all of its social media feeds[14].

The Sacramento Fire Department has also begun to use the social media application Periscope – which allows users to broadcast live pictures from their smartphones. The application runs via Twitter and enables users to connect with an audience in real time using livestreamed video footage from any location with a WiFi or mobile network signal. The Sacramento Fire Department has begun using the application to broadcast live from incidents in order to provide the local community with accurate information about ongoing incidents[15].

In the UK, the West Midlands Fire Service has been at the forefront of considering how mobile technology, specifically smartphones, can aid emergency responses to fires.

In July 2013, a fire broke out in a plastic and paper recycling plant in Smethwick, West Midlands. The initial 999 call resulted in only a small-scale response being mobilised, however once the firefighters arrived at the scene they immediately called for further resources[16].

Ultimately the fire, which involved 100,000 tonnes of plastic recycling material, required the attendance of more than 200 firefighters, produced a 6,000 foot smoke plume, and caused around £6 million worth of damage[17].

Following the blaze, the West Midlands Fire Service began to investigate how their response could be improved. A key area of improvement was linked to the initial information received in the first 999 call.

As part of their investigation, West Midlands Fire Service viewed the large amount of amateur footage generated and published on websites such as YouTube of the Smethwick

13. About the FireReady App, FireReady App, March 2016 - http://www.firereadyfaq.emergency.vic.gov.au/about-the-app/

14. Mobile applications, City of Sacramento, March 2016 - https://www.cityofsacramento.org/Information-Technology/Mobile-Apps

15. Sacramento Fire Department uses new live streaming app to keep public informed, ABC 10 News, April 2015 - http://legacy.abc10.com/story/news/local/sacramento/2015/04/19/sac-fire-periscope/26037109/

16. Supercharging the humble 999 call with streaming video, BBC News, July 2014 - http://www.bbc.co.uk/news/uk-england-28491594

17. Smethwick fire: Chinese lantern 'caused largest blaze', BBC News, July 2013 - http://www.bbc.co.uk/news/uk-england-birmingham-23123549

fire. It was suggested that should this footage have been available at the beginning of and during the incident, rather than afterwards, it would have been able to inform the response of the emergency services[18].

This led to the development of the 999eye programme – which would enable call handlers to instigate a video stream with those who contacted the service via 999. Those calling 999 would not be able to automatically video-call the emergency services, but would instead be requested to do so if the call handler felt it would be useful for arranging the response[19].

During the call handling process, only with the callers consent – and after an emergency response has already been mobilised, call handlers will be able to send the caller a bespoke website link via a text message.

This link will enable the caller to begin streaming live video to the call handler, so that the emergency scene is visible. There is also scope to upload files via this system should the mobile signal not be strong enough to facilitate livestreaming[20].

This extra information provided to call handlers will enable them to automatically determine the level of emergency response required, ahead of the initial responders even arriving at the scene[21].

A LONDON FIRE BRIGADE MOBILE APP

With the growth of smartphones in the UK, there is a clear gap for applications which connect users with the emergency services and facilitate a greater sharing of data.

While businesses and in some cases local authorities have been quick to develop mobile applications that make their services available on smartphones – the emergency services have not.

RECOMMENDATION: The London Fire Brigade should launch a mobile application.

WHAT SHOULD A LONDON FIRE BRIGADE MOBILE APPLICATION DO?

Any mobile application owned by the LFB should offer the ability to both request emergency assistance, and report instances which do not require an emergency response – such as fire risks. There should also be a function which enables users to ask questions of the LFB and receive responses, and the application should also list relevant information such as the location of the nearest fire station. Following in the footsteps of the 999eye

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18.   999EYE: Smart phones and first response pitch, BluelightCamp, May 2014 - http://bluelightcamp.org.uk/999eye-smart-phones-and-first-response-pitch/

19.   Next generation 999 what – when – how?, 999eye, April 2015 - https://999eye.wordpress.com/2015/04/02/next-generation-999-what-when-how/

20.   Smartphones to video stream live footage to emergency services during emergency calls, 999eye, July 2014 - https://999eye.wordpress.com/2014/07/02/smartphones-to-video-stream-live-footage-to-emergency-services-during-emergency-calls/

21.   Using tech for good: Pocket App develops lifesaving new 999 app, Good News Shared, December 2014 - http://goodnewsshared.com/2014/12/17/using-tech-for-good-pocket-app-lifesaving-999-app/

programme, the application should also be able to process a request for livestreamed video or uploaded media files.

The use of an LFB-specific mobile application would enable the capture of far more accurate location data during a request for emergency assistance. Research conducted in 2009 suggested that the accuracy of the GPS on the average smartphone device was around eight meters[22], with research in 2011 suggesting this had been improved to around five meters[23]. With each new model of smartphone, the accuracy of the available GPS signal is only getting better.
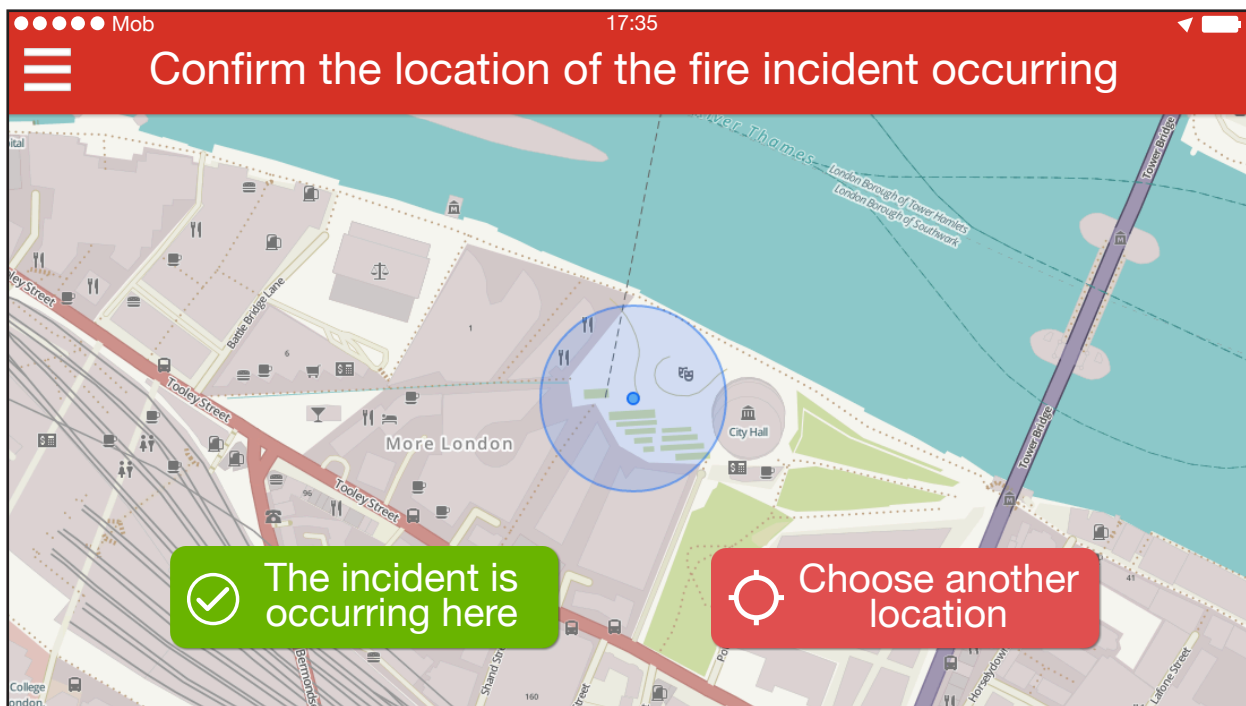
The same level of GPS accuracy could also be used for reporting fire risks. Currently a number of local authorities use variants of the 'Report It'[24] application or the 'FixMyStreet'[25] application.

These applications enable local residents to report concerns about things such as dumped rubbish, excess noise, graffiti, and damaged street furniture directly to their local authority. The local authority is automatically provided with all the information it requires to provide a response. Any LBF mobile application should enable users to report suspected fire risks directly – enabling an appropriate response to be provided.

22.   Accuracy of iPhone locations: A comparison of assisted GPS WiFi and Cellular Positioning, Paul Zandbergen, June 2009 - http://onlinelibrary.wiley.com/doi/10.1111/j.1467-9671.2009.01152.x/abstract

23.   Positional accuracy of assisted GPS data from high-sensitivity GPS-enabled mobile phones, Paul Zandbergen and Sean Barbeau, June 2011 - http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=8292634

24.   H&F Report It, iTunes Apple Store, July 2012 - https://itunes.apple.com/gb/app/h-f-report-it/id545612072?ls=1&mt=8

25.   FixMyStreet, iTunes Apple Store, July 2012 - https://itunes.apple.com/gb/app/fixmystreet/id297456545
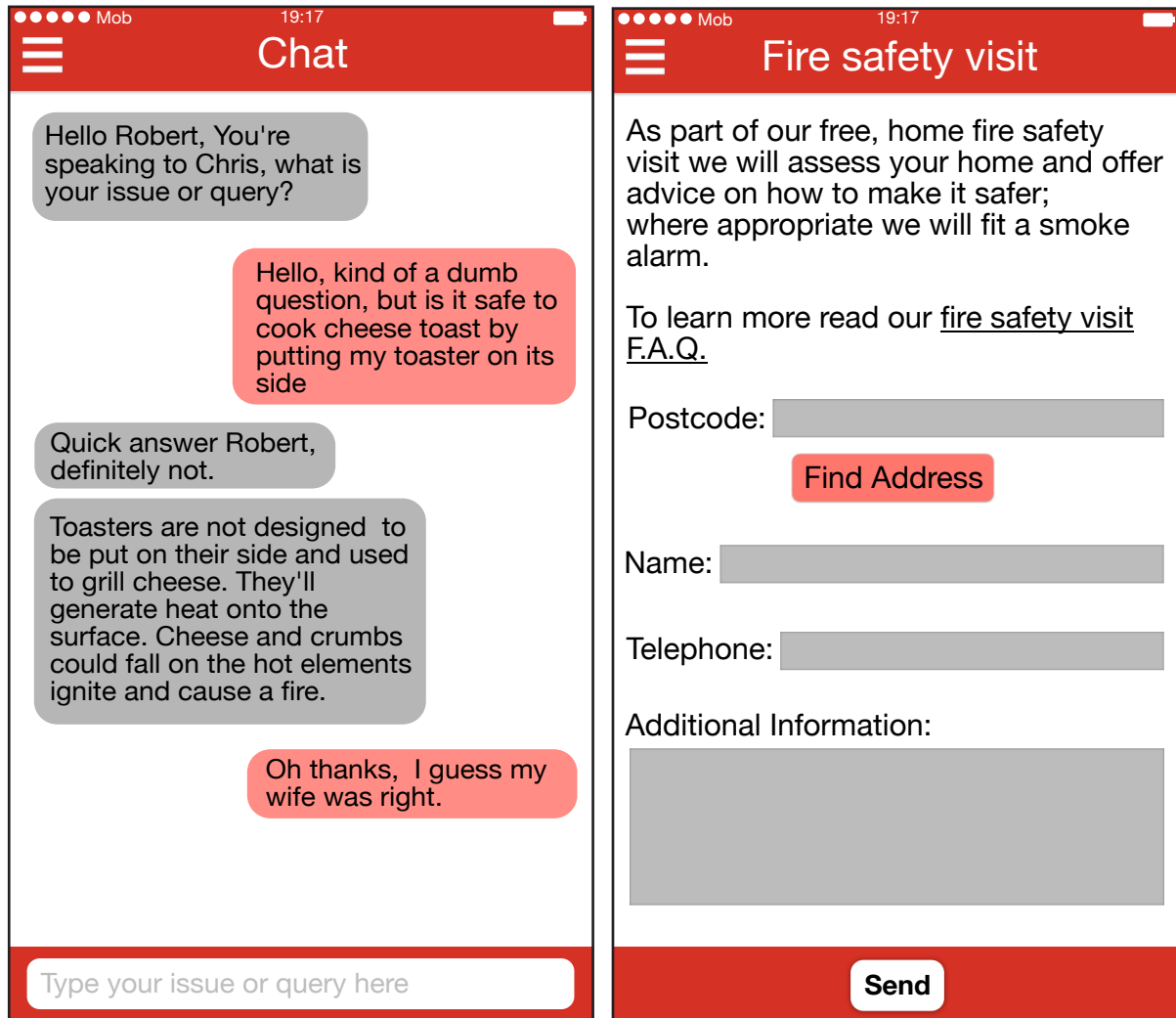
In recent years the LFB has steadily worked on increasing the number of home fire safety visits they conduct, with over 85,000 taking place in 2014 alone.

These visits target those individuals and domestic premises considered as being at a higher risk of fire and provide advice on how to take preventative measures, alongside fitting smoke alarms. An evaluation in 2013 showed that between 2006 and 2012, home fire safety visits prevented over 4,500 fires from occurring[26].

Any LFB mobile application should facilitate the booking of home fire safety visits, and the opportunity to bring to attention other domestic or even commercial properties to which it would be advisable the fire brigade visit.

A chat function would allow call handlers to offer advice to users when required, and answer basic fire prevention questions.

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26. Governance, performance and audit committee, London Fire and Emergency Planning Authority, March 2015 - http://moderngov.london-fire.gov.uk/mgConvert2PDF.aspx?ID=345&T=10

Chat

Hello Robert, You're speaking to Chris, what is your issue or query?

Hello, kind of a dumb question, but is it safe to cook cheese toast by putting my toaster on its side

Quick answer Robert, definitely not.

Toasters are not designed to be put on their side and used to grill cheese. They'll generate heat onto the surface. Cheese and crumbs could fall on the hot elements ignite and cause a fire.

Oh thanks, I guess my wife was right.

Type your issue or query here

Fire safety visit

As part of our free, home fire safety visit we will assess your home and offer advice on how to make it safer; where appropriate we will fit a smoke alarm.

To learn more read our fire safety visit F.A.Q.

Postcode:

Find Address

Name:

Telephone:

Additional Information:

Send

Importantly, an LFB-specific mobile application would allow the collection of important real-time information about a report incident, especially via the use of a smartphone's internal video camera.

Similarly to the 999eye programme, access to this function should not be automatic, but should be instigated after a request from a call handler who has received an emergency communication via the application.

This would ensure that resources were not wasted on video calls for incidents which did not require one, and therefore would not require any significant investment in hardware capable of viewing such footage, as there would only be a limited number of occasions where it would need to be used.
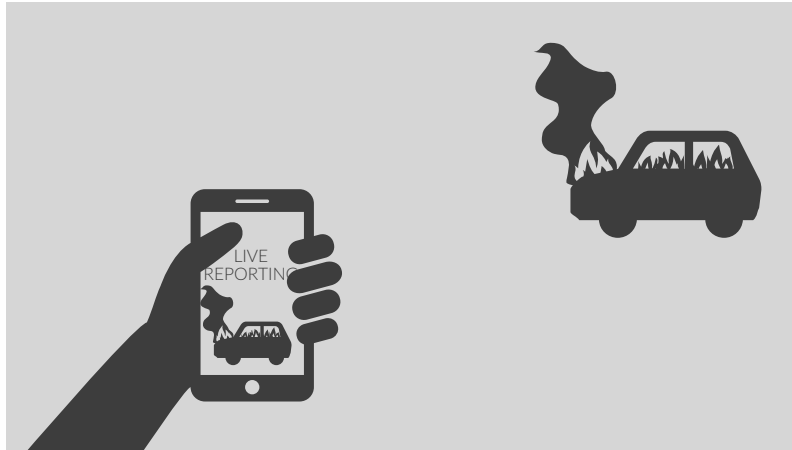
This functionality would provide LFB with real-time incident data that can both influence the level of response initially sent and prepare firefighters for what to expect when on route.

WHO SHOULD BUILD THE LONDON FIRE BRIGADE MOBILE APPLICATION?

The cost of developing a native mobile application will usually cost between at least £15,000 and £25,000 per platform[27]. However it would be advisable that any development of the application is not done in-house but instead done externally, given the significant level of expertise in the private sector in developing such mobile applications.

The private and third sectors have a long history of effectively using new technology, whereas the public sector has often been slow to react. Therefore it would be advisable if a design of an LFB mobile application included external influences and the expertise available in the private sector.

An effective way for this to be achieved would be for the Mayor of London to host a competition for application designers and programmers to develop the LFB's mobile application.

This would enable the brightest and best developers, especially those based in London, to submit proposals and have them subsequently developed by the LFB. Any eventual winner should be heavily involved in any future development of the application.

RECOMMENDATION: The Mayor of London should host a competition for mobile application developers to create the London Fire Brigade's mobile application.

BEYOND LONDON?

The UK has 53 fire brigades, including the LFB, which are all operationally independent[28]. Currently because of the way fire services are structured across the UK, any mobile application developed by the LFB would only be functional within the Greater London

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27. What is the cost of developing apps for the mobile marketplace?, Computer Weekly, March 2011 http://www. computerweekly.com/news/1280097329/What-is-the-cost-of-developing-apps-for-mobile-marketplaces

28. UK Fire and Rescue Services, Chief Fire Officers Association, March 2015 - http://www.cfoa.org.uk/12072

boundaries. It would take an agreement at a national level for any mobile application to be accessible across the entire country.

Once London has taken the lead by launching the LFB mobile application, the Mayor of London should seek to work with the Chief Fire Officers Association and the Local Government Association's Fire Commission in order to widen the scope of the mobile application so that it can be used by all fire brigades.

Once an application had been launched in London, the Mayor of London would be best placed to lead discussions, and help instigate work towards such a mobile application being accessible across the entire country.

RECOMMENDATION: The Mayor of London should work with the Home Office, the Chief Fire Officers Association and the Local Government Association's Fire Commission in order to have a mobile application for reporting fires developed for the entire country.

Another avenue the Mayor of London should consider, if such a mobile application is developed for use across the country, is working with smartphone developers to include any mobile application developed as a standard on new handsets.

This would hugely increase the number of individuals able to use such an application, and remove the need for new users to download the application before being able to use it. Any such application being included on new handsets would drastically increase the ease by which individuals would be able to provide accurate data to fire brigades.

RECOMMENDATION: The Mayor of London should encourage smartphone developers to include a national fire reporting mobile application on all new handsets as a standard.

CONCLUSION

There is a real opportunity for the LFB to be at the forefront of developing technology, and use the ever growing number of smartphone users in London to assist in the fighting of fires and cutting of fire risks.

With smartphone use growing exponentially, and the majority of private sector services already offering their own mobile applications – it is high time that public sector service providers were also able to make use of mobile applications.

The emergency services, specifically, would greatly benefit from the development of mobile applications which aid their work.

In a large number of situations, the data generated by a smartphone mobile application could greatly improve the service provided by the LFB because it would be furnished with information that would aid the responses it provides.

Such a mobile application would also enable the LFB to receive accurate GPS data about the location of incidents, alongside the capability to receive livestreamed video footage.

London is a world respected leader in the technology sector, and there is an ideal opportunity for London to lead the way in how the emergency services embrace technology, and specifically mobile applications.

LIST OF RECOMMENDATIONS

RECOMMENDATION #1: The London Fire Brigade should launch a mobile application.

RECOMMENDATION #2: The Mayor of London should host a competition for mobile application developers to create the London Fire Brigade's mobile application.

RECOMMENDATION #3: The Mayor of London should work with the Home Office, the Chief Fire Officers Association and the Local Government Association's Fire Commission in order to have a mobile application for reporting fires developed for the entire country.

RECOMMENDATION #4: The Mayor of London should encourage smartphone developers to include a national fire reporting mobile application on all new handsets as a standard.

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