

Report from Corporate Support Services, Information Technology

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Subject: Council Cellphone Standardization

Recommendation

Corporate Support Services – Information Technology (CSS-IT) recommends the standardization of Apple iPhone and the corresponding iOS (a mobile operating system) software for Council members in the upcoming renewal of user cellphones. In the past Council was provided a choice. As illustrated further in this report, staff would not recommend this. If Council chooses to amend this recommendation to include the equivalent Android device, it should be noted that this may result in diminished security features and compatibility with existing systems. The choice of alternate non-standard devices will also require additional customized procedures to be implemented tasking the resources of the CSS-IT department. The standardization to one brand and system is vital to maintaining security and privacy with existing mobile device management software in use by the City.

Background

The Budget Standing Committee requested that staff provide Council with information regarding any plans for conversion of Council's cell phones outlining the savings, benefits and differences in doing so.

Report

Historically, cellphones are replaced during the renewal/refresh cycle of the corporate cellphone plan. Prior to the last refresh in 2015, a single cellphone operating system and device was the only option provided to the users. This procedure was based on plan options and operability with systems already in place at that time. During the most recent refresh in 2015, a limited number of options were provided to all users on an experimental basis. Users were given the choice between the “Apple iPhone”, the “Samsung Galaxy (Android)” and “Blackberry” devices.

Mobile Device Management:

Mobile device management “MDM” is a type of security software used by an IT department to monitor, manage and secure employees' mobile devices that are deployed across multiple mobile service providers and across multiple mobile operating systems being used in the organization. CSS-IT currently uses the Blackberry enterprise server version 12 as its MDM. All City smartphones were added to our

Mobile Device Management software (BES 12) by staff to manage and maintain the fleet.

CSS-IT regularly updates and maintains the MDM system to the latest version available. Licensing for the software is perpetual (use of the license indefinitely) thereby reducing the cost of license renewals. In 2016, CSS-IT researched the replacement of the MDM system. It was determined to stay with our existing system due to the available feature set and additional costs of implementing any new system. Over the last two years, it was determined that that Apple iOS was the most secure and efficiently manageable ecosystem working the current MDM.

An overview,

- The Apple “Device Enrollment Program (DEP)” provides additional benefit and functionality to maintain a secure network.
- Google Android’s system proved to have limited functionality with the MDM.
- Blackberry OS (operating system) inherently worked with the server as designed. However, Blackberry has limited their device development to move towards software platform development in the recent years.

Therefore currently the Apple iOS ecosystem is deemed as the most compatible with our existing MDM.

Reliability of devices:

City users are provided the latest and most feature-rich smartphone devices available within the budget funding provided. Since the last refresh of devices, several phones have exhibited issues with their operation and usability. The majority of the issues have occurred with installed Android devices. There were 49 android devices originally implemented in the City, of which over 50% experienced complications (power failures, overheating, etc.) within the 2 years of usage. Both Samsung and the wireless provider were approached to assist with repair and replacement, but with limited success. Comparatively both the Apple and Blackberry devices had lesser failure rates. In comparison the Apple iOS devices demonstrated higher build quality and limited failure rates when put through the same environment and usage in a two year period.

Device	Purchased	Issues	Comments
Android	49	<ul style="list-style-type: none">• 25 phones with issues• Overheating• Diminished battery power• Screen flickers	Samples sent to Samsung for repair at cost. Only option to replace with inferior models
Apple	65	<ul style="list-style-type: none">• 3 phones with issues• Battery failures• Screen outage	Phones were replaced with spares in stock

Blackberry	22	<ul style="list-style-type: none"> • 3 phones with issues • Screen failures • Device input failures 	Phones were replaced with spares in stock
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Security:

Data security is very important for the Corporation. Recent news has demonstrated that malware (this term is short for malicious software, used to refer to a variety of forms of hostile or intrusive software) and ransomware (a type of malicious software that blocks access to the victim's data or threatens to publish or delete it until a ransom is paid) is rampant and is also designed to penetrate cellphone operating systems. Generally, iOS is a more secure platform than Android. However iOS is not impregnable/impenetrable, and it is not advisable for users to assume that it is. It has been identified that far more malware is written for Android (*Pulse Secure's 2015 Mobile Threat Report put the figure at 97 percent of all mobile malware*). In addition, the U.S. Department of Homeland Security estimated in 2013 that just 0.7 percent of malware threats were aimed at iOS.

Typically the iOS environment has stricter development policies on their apps and thereby provide more stable apps. Thereby the 'closed' platforms such as iOS have very little malware written for them. It is easier to break into Android, and malware writers tend to focus on easier avenues. There are also small differences between the variations of Android used by the different handset makers. This fragmentation makes it more difficult/harder to push out adequate security patches on a timely basis. With the MDM solution in place and DEP program provided by Apple, CSS-IT can govern the smartphone usage and prevent harmful apps from being loaded. These features of Apple help maintain device security, enhance privacy and secure standards in comparison to Android or Blackberry.

Device compatibility and ease of use:

Backward compatibility affects app development and usability when dealing with multiple operating systems. Android has a slight disadvantage in backward compatibility of devices, whereas the Apple iOS typically can be upgraded on previous generation of iPhone.

The CSS-IT staff is tasked with supporting the multiple devices and operating systems on the network. With limited number of staff resources in the department, efforts are maximized to provide the most efficient service to all users. Having a standard platform provides an efficient streamlined system for staff to provide support and management. Although the Android operating system does allow for more customization, the Apple iOS lends itself to easier use on a larger scale for user. This translate into an easier

uptake for new users, less complication with regards to the user experience and also in streaming support.

Today:

In 2017, CSS-IT staff is accountable for renewing the cellphone contract and will be replacing the smartphone devices for all assigned users. The device of choice is the iPhone 7 model. This device meets all desired specifications with regards to security and usability with our current MDM solution in place. The City's current wireless provider has provided pricing for the replacement phones at discount described in the approved RFP, the Apple iPhone 7 at \$320.25 and Samsung S8 at \$362.25. These two devices were considered based on comparable feature sets and updated technology to be used on the City network. Existing devices will be traded in to achieve cost savings and fund the replacement phones (Apple iPhones exhibit higher resale values when comparing to similar Android or Blackberry devices). A minimal number of iPhone devices will be maintained from the previously owned batch as spare devices, to be provided as replacements whenever the need arises.

Financial Implications

Though certain models of the Android OS devices are available at a less expensive cost, the benefits of the security and reliability of the Apple iPhone and iOS outweigh the corresponding Android devices. There are no additional costs in conjunction with the MDM. Devices are being funded by trade-in of older devices and monies allotted in the 2017 budget.

Relationship to Strategic Plan

Economic Sustainability

GOAL:

1. Attract public and private investment, support local businesses and provide excellent customer service to demonstrate we are open for business.

- Identify and quantify the City's technology requirements for the next four years for long-term cost savings, and to improve service delivery and enhance customer service

GOAL:

2. Provide excellent customer service and communication with citizens.

- Develop and implement a plan using innovative new technologies to enhance two-way communications between residents and the City.

Conclusion

The Apple iPhone and iOS ecosystem is being proposed as the standard for cellphone devices implemented for users on the City network. However Council may choose the

equivalent android device with the caveat that it may result in diminished security features and compatibility with existing systems. Alternate devices will also require additional customized procedures to be implemented tasking the resources of the CSS-IT department.

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