System Implementation

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| Start | Finish | Author | Description | Reason | Version |
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| 17/07/2017 | 19/07/19 | Vinicius | Conclusion and summary of implementation options | Highlight benefits and disadvantages of the implementation options. Highlight concerns for each section | 1.0 |
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**The Infrastructure**

Based on the current state of the venue, it is expected that no further equipment are necessary in order to have all attendees connected to the local wireless network and , if necessary, provide them with internet access. However, there could be some parts of the stadium which the signal coverage is either weak or absence and for this reason improving signal strength for the Wi-Fi network may be required. Moreover, depending on the choice of application solution and system implementation, the current internet bandwidth may not be capable to handle all the in and out traffic in the network, to solve this please contact the internet supplier.

On the other hand, there is also the option of internet access through user's own data plan which will of course be on their own expenses.

As a reminder, because Mathex event could take place in different places in the future the full assessment of the venue is not our main focus.

**Purchasing the Hardware**

The benefit of having all the servers at the same location where the Mathex event occurs is that there is no need for internet access. The presence of Wireless access network (WAN) would suffice the needs to run the application.

However, the equipment purchase costs can be very high. It should also be highlighted future costs such as the set-up of the system, the transferring of servers location, maintainability and labour. Not to be mentioned that a disaster management plan may be required to comply with venue's policies and for general health and safety as well as to keep the data saved and the competition running.

The Mathex events do not happen often. As we understand, those servers and any other equipment would not be used for the rest of the year which would could lead to waste of resources and damage of the equipment.

The Mathex events seems to have a decent amount of fans and it is increasing every year, this could be an issue. To scale the system to suffice the demand may not always be feasible, it could require new hardware parts and as technologies advances the servers get old, it could result in need for new servers. To conclude, adding more capabilities to the computers may be troublesome and attempt to estimate future demand will increase costs.

Therefore, We believe that purchasing and maintaining your own servers is cost effective and misuse of resources.

**Using Cloud Solutions**

Using cloud solutions will require internet access, which means the internet bandwidth must support the traffic of data otherwise users will experience slowness when using the application.

There are different cloud services available, but many of them allow you to pay only for what you use and or when you use. With this feature, there is a significant reduction in costs as the application and the resources necessary can be reserved whenever are needed and paid accordingly. Furthermore, it eliminates any need or concern for where the servers are located, if they are ready, if they will work and any labour related costs. There will be no need to worry for the hardware updates or their state. The companies that provide these services are responsible for their hardware and software.

In case the number of users increases, more resources can be purchased on click of buttons. For some cloud providers it adapts automatically and then it is charged accordingly.

Therefore, We believe that using cloud service will be significantly cheaper than purchasing your on hardware. It will eliminate many headaches and can be used at any place and time as long access to internet is available.

Note: It could be of the client desire to purchase the hardware, if not already available in AUT. The same could be maintained at AUT's grounds and be provided over the internet. This approach would work over the internet similarly to the Cloud approach.

**The Technology - Conclusion**

After our assessment we have concluded that the best option for the implementation of an application that satisfies the client's requirement and reduces short and long term costs is the use of cloud technologies.

It does not mean that Cloud services is better than having your on hardware but for this specific purpose the benefits of using cloud services instead surpasses the benefits of buying hardware.

As students plus the contribution of our lack of experience, we believe that the set-up of the servers will be complex and therefore, we cannot commit to the reliability of the system. On the contrary, using system already set up for us provides a higher change of success.