

Section One

1. Brief Description of Situation

Background & Justification

One year ago this school gave the go ahead to purchase five iMac desktop computers (one for music staff), four MIDI controllers and five licenses for *Sibelius 5* software. This was all part of a pilot program to introduce IT skills in the music classroom and thereby integrating aural training/compositional and theoretical software into the music program.

The initiative to install data projectors into classrooms was not a part of this pilot program, but coupled with the staff desktop this allowed interactive instruction for software and music skills/theory.

With only four complete stations our junior classes of <25 to our senior classes <15 enjoyed the opportunity to hear, see and learn using a medium with which they are familiar. Group compositions in *Garageband* for the junior years, composing and arranging in *Sibelius* for the senior years and constant aural training using the free program *Aquallegro*¹ have caused increased interest in the study of music theory and composition. Elective classes have grown as our student's abilities to create music have developed with this new medium. Based on the success and interest generated by the music department's pilot IT program I am requesting the funds of \$25,000AUD, on offer through this proposal, to complete a setup that will cater to the needs of an entire class for the following enriching musical needs.

2. Identification of Musical Needs

The music department treats its own budget as "...[a] numerical representation of an action plan for a specified time period."² Our 'action plan' is to provide 12 stations that allow teacher instruction, imaginative creation and 'hands on' interaction for enriched learning experiences. However, the setup we currently have:

- cannot cater for large (and growing) class sizes
- is too noisy because all sound sources play simultaneously
- cannot be used as a keyboard instruction lab very effectively
- does not have a central sound production/monitoring system
- does not facilitate things like recording/notating *all* student compositions
- does not have word processing or other media creation tools for projects or web-access to every computer

Therefore the setup we are after needs to cater for all music classes in the best possible manner (from <25 to <15 students, elective and non-elective). The new setup needs:

- To cater for 2-3 students per workstation in a large class. This will work with about 12 separate workstations, especially in smaller classes.
- To allow for each student to hear what they, and they alone, are working on via headphones. The teacher should also have the ability to hear each groups work while roaming from desk to desk or solo a stations work from the front desk for all to evaluate.
- To allow the development of keyboard skills, which can be monitored by the teacher.

¹ Andy Van Ness, Accessed 25th April 2009, <<http://andyvn.ath.cx/?sect=tech&cat=soft&topic=agu>>.

² Krawitz, N. "What is a Budget?" accessed 25th April 2009, <<http://www.acenet.edu/resources/chairs/index.cfm>>.

- A central sound unit where all signals combine, can be recorded onto a laptop, or played through speakers. This is where the cables, headphone splitters and Alesis mixer are involved.
 - To include software for music notation/theory instruction (Sibelius 5) and recording hardware (Alesis mixer, Cubase, microphone) for creative student compositions and final mixing.
 - To provide clear and creative tools for the teacher to create engaging lessons. Likewise for students to create effective, imaginative, web based or media-rich projects. This is why iMacs were chosen because of the excellent included software that addresses this, such as e.g. *Garageband* or for a small price the *iWork 09* suite.
- * In Phase 2 additional software is included that will allow teachers to become more dynamic and imaginative in their instruction of lessons. One package is for sound creation and manipulation (*Reason 4*) and the other for teaching about instruments of the Orchestra (*Sibelius Instruments*).

3. Hardware Requirements

- * All prices are at an educational discount
- * All equipment is sourced as *new* for the supplied warranties, included repair and shipping services if they will be required in the future and to be up-to-date
- * By buying most hardware/software from the same supplier discounts will be attained, saving funds and providing fast access to the previous two points
- * The quality of each item is the highest possible within the available budget, corresponding to their usage. For example, the Alesis mixer is of a high quality (for recording etc.) whereas the MIDI controllers are of a cheaper version because they are not needed to produce audio or mix sound parameters; the iMac can do that instead.

Supplied Computer³

The Apple 13" Macbook, Intel Core 2 Duo, 2GB Ram with a 160GB HD is \$2,144.00. This computer meets the requirements in the stated proposal. Yet it is not cost effective when compared with the **20" iMac** each student workstation will get. This machine is priced at \$1899.00 and comes with 2GB RAM and a 320GB HD. It also has four USB 2.0 ports for the devices included in the proposal (the laptop does not have this many). It will serve additionally as the machine for recording and mixing student compositions, storing teacher copies of software and remain linked via USB 2.0 to the Alesis 16 channel mixer, the existing Yamaha M08 teacher keyboard via USB 2.0 and the BOSE sound system via USB 2.0. For its price and specifications this will be a worthy machine for the supplied computer.



Additional Hardware⁴

- Furniture for workstations (including teacher desk) x7 – all from the same provider for free shipping and warranty. The desks are sturdy and compact, with a sliding drawer for the MIDI controller and a shelf for future hardware additions. They are also large enough to cater for group work in a large class and are maneuverable.
- Apple 20" iMac 2.66 GHz with 2GB RAM & 320GB HD x5 – with the educational pricing, large hard drives and included software like *iMovie* and *Garageband* these machines will meet all technology requirements for some time. Not only music but multimedia production.

³ Apple Education Store, iMac Configuration, Accessed 25th April 2009, <<http://store.apple.com/au-k12/configure/MB417X/A?mco=NDE4NDM1Nw>>.

⁴ Vendors listed in table

- Apple Time Capsule 1TB x1 – Providing a link to the Internet via the school's server for each workstation this device will also serve as a wireless HD for student or staff storage: minimizing cables and damage to the unit from moving it computer to computer for backups like a portable HD. It also has a USB port to make the printer connection wireless for each workstation.
- MIDI Controllers by M-Audio 49 Keys x6 – Each MIDI controller links to the iMacs via USB and will sit inside the sliding drawer ready for use. They can be used for composition or keyboard instruction. They will work with *Garageband* instantly and *Sibelius 5*.
- Rockstar Signal Splitter 5 ways x12 – Due to the problem of every student needing to hear audio and their projects fighting to be heard in the classroom I have devised a method by which this 5 way splitter will divert the iMac's audio to 3 students at once with headphones, the 4th for the wandering teacher and the 5th line to the Alesis mixer up the front of the classroom. Students will be required to bring their own headphones (e.g. iPod headphones) to plug into this splitter. This will also diminish the wear and tear on the 'audio out' port of the iMac.
- Headphone Extension Adapter x12 – Is for linking the extensions cable to the Rockstar Splitter.
- Headphone Extension Cable 7m x12 – Are the cables that will run from the iMac to the mixer. They are long enough to be put into the floor or around the room. They are the typical 1/4inch TRS stereo cables.
- Alesis Multimix USB 16 Channel Mixing Desk x1 – This mixer is a compact and easy to operate desk that will cater for 12 iMac signals and record audio via a microphone or instrument into a computer using its built in USB port. It will be the main 'hub' for the room allowing the teacher to hear each workstation at any time or solo any workstation for the class to hear and evaluate. It can also serve as a recording device because of its ADC features and free bundled software *Steinberg Cubase LE*.
- BOSE Companion 5 Multimedia Speaker System x1 – Is a powerful system that will work wonders in the classroom. It will allow the teacher's iMac to play thru USB or link to the mixer for other audio signals. This system is powered with its own amplifier, negating the need for extra cabling or room for a large amplifier. The satellites have their own stands making them easy to point in any direction and the woofer will remain out of sight. This leaves the 'control pod.' An all-in-one control pad for volume, muting with a single-touch and an auxiliary input for the Alesis mixer's control room 'out.'
- Microphone stand & lead x1 – This will mount the omni-directional diaphragm microphone and direct its signal into the Alesis mixer.
- B-2 Pro Dual-diaphragm studio condenser microphone x1 – This microphone is a relatively cheap one but it has powerful features for recording student compositions. Its main features include "... [a] selectable...Omni-directional or figure-eight directivity pattern [for recording various ensembles]. The low-cut filter removes distracting low-frequency sounds, and built-in shielding minimizes high-frequency interference [associated with rock bands or lots of electronic equipment in a room].

The microphone is delivered in a rugged hard case with a suspension mount and a windscreen [perfect for portability and security.]⁵

4. Software Requirements

* All prices are at an educational discount

• *Sibelius 5* (Seat Licenses) x8 – This is the best deal that *AVID Technology* offers for *Sibelius 5* (a network license can be problematic if the school network is down and students cannot accomplish their set tasks). This enables each machine to have its own running (legal) copy of *Sibelius 5*. Students can save their work to the wireless HD or print their compositions out to a networked printer. The minimum requirements to run *Sibelius 5* are 1-2 GB RAM, covered by the iMac choice. *Sibelius 5* is recognized worldwide as an excellent notational and educational resource. *Sibelius 5* will allow students to be imaginative in composing or arranging and provide teachers with an excellent instructional tool. *Sibelius* also has a host of further educational software and features (for students and teachers) that can be added to each workstation to enrich the learning experience, such as the *Ideas Hub*, *Sibelius Instruments* or *Musition*. This is a predominant reason why *Sibelius* is to be favored above the competitive notation program *Finale*⁶: despite its price of \$299.00, which is cheaper than *Sibelius*' \$349.00.

• Apple *iWork 09* (includes the software titles *Pages*, *Keynote* & *Numbers*) x3 family packs of 15 users – This is the word processing suite for Apple. Its price and compatibility with devices like the iPod will also make it an effective teaching tool. This software is designed to run on the lowest of the iMac range. There will be no speed issues with our chosen computer model. In comparison, *Office 2008 for Mac - Home and Student Edition*⁷ is 229.00 for 3 users through the Apple Education Store. Consider that each of the *iWork 09* applications can open and save as WORD format, create media-rich projects easier and still only cost \$139.00 for 5 users, our choice is the best option. Owning it myself, *Keynote* allows YouTube videos to be added to a slide with a simple click and drag action, while *Pages* will open .docx files without any issues. Some versions of *Office* have trouble with this.

At a later stage...

• *Sibelius Instruments* – one single copy for the teacher to demonstrate various orchestral properties for grades 7 through to 12. As mentioned, it integrates with *Sibelius 5* creating template scores for any ensemble, ready to notate. The requirements are less than 1GB RAM.

• *Reason 4.0* – This is a virtual recording studio that comes with its own teaching materials “Teaching Music With Reason:” An excellent addition for senior courses for the instruction of sound manipulation or synthesis. It can also be a great tool for composition, backing track creation and instructing in the methods of sequencing/sampling.

⁵ Venue Music Online, Accessed 25th April 2009, <<http://www.venuemusic.com.au/Products.asp?ProdID=652>>.

⁶ Finale Music 2009, Accessed 25th April 2009, <<http://www.finalemusic.com/finale/>>.

⁷ Apple Education Store, Office 2008, Accessed 25th April 2009, <<http://store.apple.com/au-12/product/TQ744LL/A?mco=MzE2OTkzNQ>>.

Section Two

7. Appendices

* All prices via vendor websites

* A ‘_’ indicates *product not listed*

* Websites for chosen vendors are *hyperlinked* in table above

Apple 20" iMac 2.66 GHz

Apple Education Store \$1899.00

BuyMac \$1899.00

Streetwise \$1949.00

Legacy Creation Station (Teacher)

Pony Music \$499.00

Billy Hydes \$499.99

Allans Music _

Alesis Multimix 16 channel Mixer

Pony Music USB Version

\$1399.00

Billy Hydes _

Allans Music _

Bavas Music Firewire Version \$999

Apple has phased out firewire ports, the USB version was chosen for its portability and universal connectivity

Bose Companion 5 Multimedia

Speaker System

Apple Education Store \$599.95

BuyMac \$549.00

Streetwise \$585.00

Apple Time Capsule 1TB

Apple Education Store \$749.00

BuyMac \$749.00

Streetwise \$765.00

Dick Smith \$699.00 - limited time special only

Legacy Mix Station (student)

Pony Music \$299.00

Billy Hydes \$299.99

Allans Music _

M-Audio Key Studio MIDI Controller

Apple Education Store \$149.95

Billy Hyde \$199.95

Allans Music _

Pony Music _

BuyMac \$179.00

Sibelius 5 directly from Sibelius

Australia 08 8277 1722

Sibelius 5 actual copy for each desk - \$349

iWork Family Pack (5 seats)

Apple Education Store \$169.00

BuyMac \$159.00

Streetwise \$159.00

Belkin Rockstar Splitter

Apple Education Store \$24.95

Streetwise \$17.95

Mwave.com.au \$20.95

Behringer B-2 Pro Microphone

Venue Music \$299.99

Allans Music \$269.00

Reason 4.0

Spank Records \$649

Billy Hydes \$499.99

Allans Music \$699.00

Sibelius Instruments Software

Engadine Music \$79.00

Sibelius Online \$99.00

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Gercken S, *Annotated Budget for a Computer Music Workstation*, accessed 23rd April 2009, http://72.14.235.132/search?q=cache:4g6FGDFDQdYJ:www-camil.music.uiuc.edu/classes/210/projects/workstation_proj12/Gercken_budget.pdf+gercken+budget&cd=1&hl=en&ct=clnk&gl=au&client=firefox-a.

Krawitz N, 2003, "What is a Budget?" accessed 25th April 2009, <http://www.acenet.edu/resources/chairs/index.cfm>.

Van Ness A, *Aquallegro*, accessed 25th April 2009, <http://andyvn.ath.cx/?sect=tech&cat=soft&topic=aqu>.

Vendors Sourced

Allans Music, accessed 25th April 2009, <http://www.allansmusic.com.au/>.

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BuyMac, accessed 25th April 2009, <http://www.buymac.com.au/>.

Dick Smith Electronics, accessed 25th April 2009, <http://www.dse.com.au/cgi-bin/dse.storefront/>.

Engadine Music, accessed 25th April 2009, <http://www.engadinemusic.com.au/>.

Finale Music, accessed 25th April 2009, <http://www.finalemusic.com/finale/>.

MWave, accessed 25th April 2009, <http://www.mwave.com.au/newAU/mwaveAU/default.asp>.

Pony Music, accessed 25th April 2009, <http://ponymusic.com.au/>.

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