Briefing paper: ePortfolios in learning and teaching

Purpose

To inform decision making about future usage of ePortfolios at UWS.

Background

UWS is conducting a pilot of the ePortfolio product PebblePad (Pebble+ and ATLAS) from July 2012 in a limited implementation scheduled to conclude in June 2014. Currently three schools are involved in the pilot. Other schools have expressed interest in using ePortfolio systems. UWS now wishes to consider what use might be made of ePortfolios within its learning and teaching activities in the future. Knowledge about ePortfolios is not currently widely distributed across UWS.

What are ePortfolios?

An ePortfolio is a digital collection of learning artefacts including presentations, essays, rich-media resources and records of accomplishments that represent an individual student or a group of students' work. The collections can be simple or complex, tied to assessment or used to leverage career opportunities. The use of ePortfolios in learning and teaching encourage personal reflection, document course learning outcomes and involve sharing ideas and receiving feedback from peers.

In addition to student ePortfolios there are teacher portfolios used to showcase a teaching philosophy, achievements and are often used for promotion activities. The technologies used to enable either a staff or student ePortfolio can be the same, however there are considerations for career development ePortfolios that are used beyond the time the student is studying at the university as these have an indeterminate usage level and there are questions about who owns the ePortfolio once the student graduates and the university keeps paying for the system housing the ePortfolio collection. The following website is the prime Australian site for ePortfolio information: http://e Portfoliosaustralia.wordpress.com/

Benefits of ePortfolios

The benefits of ePortfolios are well documented in literature and cover five main areas, as outlined below:

Teaching and learning	- Builds technical literacy skills for students and staff - Students take responsibility and engage in their work - Facilitates a reflective pedagogy and deeper understanding of subject matter - Improves written communication skills for students - Student's portfolio can be taken with them to other institutions - Potential to be used online from any location - Potential to store competency conversation in multimedia format
Assessment	- Facilitates both formative and summative assessment - Allows assessors to track the progress of student assessments - Saves time at semester end, as students are completing assessments progressively

Recognition	• Provides a secure, permanent storage space for students to prove prior learning and skills development.
Employment	• Facilitates student access to employment and further study • Showcases student achievements to potential employers • Allows for students to differentiate between professional and social personas in the digital environment
Marketing tool	• An ePortfolio tool would be a strong marketing/selling point for UWS in an emerging competitive marketplace within higher education. Some ePortfolio systems enable users to expose parts of their ePortfolio to a potential employer; another marketing opportunity for UWS for producing 'employable' candidates.
Alumni	• UWS may wish to further build an alumni of learners. Access to and support for an individual's ePortfolio could be a strategic component of such an approach.

Types of ePortfolios

There are different ways to categorise an ePortfolio system, including:

- Dedicated ePortfolio system integrated with LMS (e.g. Pebble, Mahara)
- Blog (e.g. Wordpress, Blogger)
- Cloud storage (e.g. GoogleDrive, DropBox)
- Hosted website (e.g. wikispaces, GoogleSites)
- A series of files using Word, or PowerPoint as templates

These systems can be used by students as documentary evidence of knowledge, skills, abilities, and learning; and to substantiate claims in job applications.

ePortfolio types *(See attachment one for more detailed and extensive descriptions)*	Considerations
Dedicated ePortfolio systems integrated with LMS - Pebble	Integrated with Blackboard, proprietary system, customisable, extensible, allows users to export collections, requires dedicated effort to integrate into curricula, and requires student training and staff development and support. Already in limited implementation at UWS in schools of SCEM, HCA and SoM.
Dedicated ePortfolio systems integrated with LMS - Mahara	Integrated with Blackboard, open source system, customisable, extensible, allows users to export collections, requires extensive resourcing to maintain and develop Mahara to meet UWS needs, dedicated effort to integrate into curricula, requires student training and staff development and support. Not in limited implementation or in pilot at UWS.

[Blog](), e.g. WordPress/Blogger	Standalone website either hosted by company or self-hosted, not governed by UWS policies, backup, access or security measures, majority of access is public. Wordpress may be able to be integrated with Blackboard although this has not been tested at UWS.
[Cloud storage]() e.g. GoogleDrive, Dropbox	Hosted by company, majority of access is private although files and folders can be shared with others. User has limited choice in who can access their files and for how long.
[Hosted website]() e.g. wikispaces, Googlesites	Standalone website either hosted by company or self-hosted, not governed by UWS policies, backup, access or security measures, majority of access is public. User has limited choice in who can access their files and for how long.
Word and PowerPoint templates	Stored on USB or uploaded into vUWS or a cloud service. Limited options for documenting ideas and feedback that is then shared with peers.

ePortfolio requirements and considerations

To effectively use ePortfolios as a student reflection and credential tool, the technology should:

- be web-based, integrated with the LMS
- enable sharing based on permissions of access (e.g. who, how long, read only, edit)
- provide flexible storage levels (e.g. students with rich media resources will require more than students collecting data-based artefacts)
- enable importing and exporting of collections
- be intuitive to use
- be supported with staff and students trained in its use and staff supported in embedding it within curricula

A dedicated ePortfolio system should be integrated with the LMS and requires support for students and staff to use effectively. Multiple ePortfolio systems would be confusing to students (which system do they access in which unit of study?) and duplicate effort in system administration and integration, user support and training. ALTC-funded research into eportfolio use in Australian higher education and VET institutions has found that since 2007 there has been a *significant increase in the use of eportfolios in the university-wide context, and a sustained level of practice at the course-wide level, compared to the earlier evidence of greater use at the subject- or unit-specific level*. This is consistent with the approach proposed by the pilot participants and CCE. This report also indicated that respondents' assessment of the key factors for successful implementation of eportfolios at their institution were f*unding, staffing, user support, IT support, pedagogical training and support*. An

example of the type of training and services for ePortfolio is available here:
http://vanguardvisionsconsulting.com/eportfolioserviceswebsite/blog/

Proprietary products vs Open source products

Proprietary ePortfolio solutions are generally well established and well supported systems which can either be hosted by the supplier or the purchaser. Most proprietary ePortfolio systems are purchased on a per user license basis. The license either belongs to the:

- o organisation - who purchases a set number of licenses which they can re-issue to different learners over a period of time

- o learner - but the license is bought for them by the organisation and they can choose to continue to use/pay for the license post their study time with the organisation

As proprietary systems are well established systems, it is often harder and/or more costly to have customisations made to suit an organisation's needs. However, this also means that the product is usually stable and requires fewer upgrades (and therefore does not require constant user training/user support material upgrades).

In Australia and the UK, the most popular proprietary ePortfolio product is PebblePad, however, in the USA there are a number of proprietary ePortfolio systems utilised, including: Digication, Chalk n Wire, Task Steam, and Epsilen etc.

Open source products (e.g. Moodle LMS and Mahara ePortfolio) are also popular choices due their flexibility in terms of hosting options and customisations or 'plug-ins'. Open source products can also allow better integration with existing systems as they are usually based on open technical standards.

As open source products are influenced by their community of users, system upgrades (and therefore constant training and resource changes) are a reality which needs to be factored into the ePortfolio hosting and on-going maintenance requirements.

In Australia and the UK, Mahara is the most popular open source ePortfolio software, with some institutions in the USA using WordPress as an alternative open source

Current usage of ePortfolios at UWS

UWS is conducting a pilot of the ePortfolio product PebblePad (Pebble+ and ATLAS) from July 2012 in a limited implementation scheduled to conclude in June 2014. The Schools of Medicine, Computing Engineering and Mathematics, and Humanities and Communication Arts have all provided the tool to specific cohorts of students, ranging between Year 1 in Medicine to Year 3 in Industrial Design. The Blended Learning Team (BLT) in the Learning and Teaching Unit has been providing strategic and on-ground support for this pilot which is currently limited to around 300 students.   Apart from core staff support from BLT and ITS the pilot has been funded to the amount of $60,507.93 since July 2012.

The initial pilot has confirmed that careful learning design approaches in the use of Pebble within the curriculum foster improved student learning outcomes. However student responses in the pilot evaluation surveys have also indicated mixed experiences and reactions to using a system additional to Blackboard, particularly for assessment submission.

No exit strategy has yet been identified for pilot participants in the event that funding for ePortfolio system provision is not available beyond the pilot period.

It is also reported that some schools or disciplines within schools use ePortfolios with their students or encourage student creation of ePortfolios. However apart from Pebble no other system has been integrated into the LMS.

Future usage of ePortfolios at UWS

One current ePortfolio pilot participant wants to extend their provision of Pebble over more courses and more years within their School, with the aim of fostering reflective and holistic practice as well as enjoying the affordances of online document storage and communication. Other Schools have expressed some interest in using ePortfolios within their curriculum. In the medium term it is likely though that even with encouragement; the use of ePortfolios within school program delivery will not be all encompassing and is estimated to reach say up to a maximum of 10 to 20% of UWS students or 4000/8,000 over a three year period.

However at the same time the Careers and Cooperative Education (CCE) unit want to offer an ePortfolio system for all students at UWS as part of their university-wide career development strategy. Pebble may not necessarily be the optimum system to use but if they pursue a university wide approach then it would not make sense for a student to have to deal with two ePortfolio system during their studies at UWS. UWS College might be also interested in adopting an ePortfolio approach and given the flow on of students to UWS it will be important to keep their proposed use in sync with UWS as a whole.

Other schools, e.g. the School of Nursing and Midwifery may wish to continue to use the ePortfolio system they are currently advising their students to access.

On the one hand it may be difficult to "impose" one solution that would fit all needs across UWS. On the other hand there will b e a need to contain the number of systems especially any that sought to be integrated with the LMS.

Funding for expansion of usage

Institutional support for continuing and expanding use of ePortfolios would need to be allocated. It would be necessary to employ an ePortfolio Coordinator to and to ensure consistent integration with other systems.

Whether a licensed system such as Pebble or an Open Source system such as Mahara was adopted, costs of licensing or configuring are likely to be similar. Hosting of any ePortfolio is likely to be off site/cloud given potential file size. In addition there would be costs of UWS wide ePortfolio support to provide local training to School-based blended learning specialists for integrating this tool within curricula and for integration with other systems such as the LMS.As a ball park figure it is estimated that to deploy an ePortfolio system to say $8000 users would cost about $200K per year.

It could be possible to consider individual schools or sections paying for their own ePortfolio systems and hosting arrangements but that would not maximise the efficiencies of a broader UWS approach and could lead to a hotchpotch of ePortfolio systems being used across UWS.

Suggested next steps

1. Support current schools to continue with Pebble beyond June 2014 (at this stage only SCEM) but still on a limited basis
2. Write up a report based on the Pebble trial by July 2014 'Survey' Schools and other units - future requirements in ePortfolio needs in 2014
3. Based on 1 and 2 develop a cohesive UWS ePortfolio strategy
4. Invest in ePortfolio expansion as appropriate
5. For discussion at appropriate forums

Attachment One: Details of ePortfolio systems

Dedicated ePortfolio systems

Dedicated ePortfolio systems are software systems which enable users to develop an ePortfolio for a particular purpose e.g. an assessment and/or presentation ePortfolio.

Key features include the ability to:

- Store, develop, manage and retrieve digital artefacts

- Create either custom free-form or template-based presentations

- Enable third parties to access and comment on presentations

- Submit presentations for assessment

- Import and export components of or the whole e Portfolio

- Integrate with other learning systems

There are a large number of ePortfolio systems[1] available. Currently in the Australian VET sector the most commonly used ePortfolio systems are Mahara, PebblePad and VUMI. Details of these systems are listed below:

Mahara – http://mahara.org (version v1.5 circa 2012)	
Hosting	self-hosted or hosted by external service providers e.g. Netspot, Pukuni or Brightcookie.com
Integration	- stand-alone system or integrated with Moodle as a single sign-on system known as Mahoodle; - integration of Google Apps and RSS/Atom and embedded code
Ownership	- open sourced system; - hosts determine who and how users access their instance of Mahara
Customisation	- offers a range of Mahara community developed 'plug-ins'; 'plug-ins' can be developed; - opportunity to provide input (suggestions, funding, coding) into requirements for future versions
Storage	- Adjustable by host; - integration with Google Apps, including Google Drive;

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[1] Ward, L., ePortfolio Software: Product and Services, https://spreadsheets.google.com/pub?key=0AkGC6juditaYdGdBMGJoek1JTkx1V09TRnhoY1dOUGc&hl=en&output=html

	• allows most standard file formats to be uploaded; • mobile phone uploader (plug-in)
Access	• majority of user information is default private; • user has multiple choices of how, who and for how long third parties can have access
Interoperability	• supports the Leap2A import/export e Portfolio standard; • allows users to export as HTML or PDF (plug-in required)

PebblePad – http://pebblepad.com.au/	
Hosting	• self-hosted or provided as software as a service by PebblePad
Integration	• as a stand-alone system or integrated with Moodle, Blackboard and student management/database systems
Ownership	• proprietary software system; • users are 'licensed' to use PebblePad, which is either issued by an organisation to a user or as individual subscriptions to the service
Customisation	• determined by PebblePad and included in future versions
Storage	• adjustable by host; • allows most standard file formats to be uploaded; • mobile phone uploader (plug-in)
Access control	• user information is default private; • user has multiple choices of how, who and for how long third parties can have access
Interoperability	• supports the Leap2A import/export e Portfolio standard; • allows users to export as HTML or PDF

VUMI – http://www.vumi.com.au/	
Hosting	• provided as software as a service by VUMI
Integration	• as a stand-alone system
Ownership	• proprietary software system; • users are 'licensed' to use VUMI, which is either issued by an organisation to a user or as individual subscriptions to the service

Customisation	• determined by VUMI and included in future versions
Storage	• determined by VUMI; • allows most standard file formats to be uploaded;
Access control	• user information is default private; • user has a choice of how long third parties have access
Interoperability	• users to export as PDF

Blog systems

Blog systems offer users the ability to develop online web-logs or journal which they can use to keep a reverse chronological diary, critical reflection journal or develop an overall web presence.

Key features include the ability to:

- Store, develop and manage digital artefacts

- Create either custom free-form or template-based presentations

- Enable third parties to access and comment on presentations

- Import and export blog content

- Integrate with other learning systems

There are a large number of blog services available[2]. Popular blog systems include WordPress, Blogger and TypePad. Details of how the WordPress and Blogger blog services would function as an e Portfolio are listed below:

WordPress Blog Service – http://wordpress.org	
Hosting	• self-hosted or hosted by WordPress
Integration	• stand-alone system or integrated with other learning systems through RSS/Atom integration
Ownership	• open sourced system; • hosts determine who and how users access their blog service with; • free or fee-for-service available
Customisation	• offers a range of community developed 'plug-ins'; • 'plug-ins' can be developed by user; • opportunity to provide input (suggestions, funding, coding) into requirements for future versions

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[2] Top Ten Reviews: Blog Software Review: http://blog-software-review.toptenreviews.com/

Storage	• adjustable by host; • allows most standard file formats to be uploaded; • mobile phone uploader (plug-in)
Access	• majority of user information is default public; • user has limited choices of how, who and for how long third parties can have access
Interoperability	• supports an import/export functionality

Blogger Blog Services - http://blogger.com/	
Hosting	• hosted by Blogger
Integration	• integrated with other learning systems through RSS/Atom integration
Ownership	• Blogger owns the blog and its content; • users self-register; • service is free
Customisation	• Blogger would determine and incorporate in future versions
Storage	• determined by Blogger; • allows most standard file formats to be uploaded; • mobile phone uploader
Access	• majority of user information is default public; • user has limited choices of how, who and for how long third parties can have access
Interoperability	• supports an import/export functionality

Online Storage Services

Online storage services offer users a convenient (and often cheap) digital artifact storage where users can access and share their content/information from any location and any device. Online storage services do not provide the ability for a user to bring together their information to present to effectively to third parties.

Key features include the ability to:

• Store and manage digital artefacts

• Enable third parties to access and editing rights

- Import and export artefacts

- Integrate with other learning systems

There are a large number of online storage services available[3]. Popular online storage systems include Google Drive, Dropbox and SugarSync. Details of how online storage services would function as an e Portfolio are listed below:

Online Storage Services	
Hosting	• hosted by online storage service providers
Integration	• some integration with other learning systems through plug-ins/blocks
Ownership	• host determines how users access their online storage service and who they can share it with; • free or fee-for-services available
Customisation	• provider determines and incorporates in future versions
Storage	• adjustable by host (usually scaled to hosting fees); • allows most standard file formats to be uploaded; • mobile device access available
Access	• majority of user information is default private; • user has limited choices of how, who and for how long third parties can have access
Interoperability	• dependent on host

DIY Website Services

DIY website services offer users a convenient way of developing an online presence incorporating a variety of digital artifacts.

Key features include the ability to:

- Store and develop digital artefacts

- Create either custom free-form or template-based presentations

- Enable third parties to access to presentations

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[3] Top Ten Reviews: Online Storage Services Review: http://online-storage-service-review.toptenreviews.com/

There are a large number of DIY website services available. Popular DIY website services include Wikispaces, Google Sites and Weebly. Details of how Wikispaces, Google Sites and Weebly would function as an e Portfolio are listed below:

Wikispaces - http://www.wikispaces.com/	
Hosting	• self-hosted or hosted by Wikispaces
Integration	• some Wikispaces services allow a single sign-on with other learning systems
Ownership	• host determines how users access and who they can share it with; • does not own the users' content; • free (with ads or 'free for education) or fee-for-services available
Customisation	• Wikispaces determines and incorporates in future versions
Storage	• adjustable by host (usually scaled to hosting fees); • allows most standard file formats to be uploaded;
Access	• majority of user information is default public (unless host requires authentication); • user has limited choices of how, who and for how long third parties can have access
Interoperability	• supports HTML and PDF export functionality

Google Sites - http://sites.google.com/	
Hosting	• hosted by Google
Integration	• some integration (mainly with GoogleApps); • single sign-on with other Google services
Ownership	• Google owns website and its content; • Google determines how users access and who they can share it with; • free service
Customisation	• Google determines and incorporates in future versions
Storage	• Large storage allowance determined by Google; • allows most standard file formats to be uploaded;
Access	• majority of user information is default public; • user has limited choices of how, who and for how long third parties

	• can have access
Interoperability	• Import/export functionality to XHTML

Weebly - http://www.weebly.com/	
Hosting	• hosted by Weebly
Integration	• some integration with Google Apps and social networking sites (Facebook/Twitter)
Ownership	• Weebly determines how users access and who they can share it with; • does not own the users' content; • free or fee-for-services available
Customisation	• Weebly determines and incorporates in future versions
Storage	• Adjustable by host (usually scaled to hosting fees); • allows most standard file formats to be uploaded;
Access	• majority of user information is default public; • user has limited choices of how, who and for how long third parties can have access
Interoperability	• no import/export functionality available

Digital Notebook Services

Digital Notebook services provide a convenient way of gathering notes and information which can be easily searched.

Key features include the ability to:

- Store, manage and retrieve digital artefacts

- Create presentations

- Enable third parties to access

There are a limited number of Digital Notebook services available with Evernote and Onenote being the most popular. Details of how Evernote and Onenote would function as an e Portfolio are listed below:

Evernote - http://evernote.com/evernote/	
Hosting	• self-hosted by user on a device; • can be synchronized to an Evernote hosted account

Integration	• limited integration with Twitter
Ownership	• user hosts own digital notebook; • free (with ads or 'free for education) or fee-for-services available for Evernote synchronised service
Customisation	• Evernote determines and incorporates in future versions
Storage	• determined by user's storage capacity on their device; • allows most standard file formats to be uploaded;
Access	• majority of user information is default private; • user has limited choices of how, who and for how long third parties can have access
Interoperability	• supports HTML export functionality

Onenote - http://office.microsoft.com/en-au/onenote/	
Hosting	• self-hosted by user on a device;
Integration	• integration with Microsoft Office suite
Ownership	• user hosts own digital notebook; • licensed as part of Microsoft Office suite
Customisation	• Microsoft determines and incorporates in future versions
Storage	• determined by user's storage capacity on their device; • allows most standard file formats to be uploaded;
Access	• majority of user information is default private; • user has limited choices of how, who and for how long third parties can have access
Interoperability	• exports as .one and.doc/docx, as well as PDF, XPS and MHT

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