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ascilite Report 5 for the Carrick Exchange Project: International Perspective

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ascilite Report 5 for the Carrick Exchange Project: International Perspective

Abstract

This is the fifth report completed by ascilite for the Carrick Institute for Learning and Teaching in Higher Education to inform the development of the Carrick Exchange. It complements research findings discussed in four previous ascilite reports (Reports 1-4). Report 5 is a synthesis of particular international research and experience regarding the building of communities to support teaching and learning in higher education, and repository development and implementation. The ascilite research continues to explore emerging themes, issues and concerns regarding engagement of the Australian higher education sector with the Carrick Exchange initiative, identification of resources and methods of contribution, and peer review and commentary that support and enable sharing and reuse. This report is based on the findings of a symposium held in Singapore, December 2007, at the 24th annual ascilite conference, and input from the literature in the form of three papers published in the ascilite conference proceedings and presented at the symposium.

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***ascilite* Report 5 for the Carrick Exchange Project:
International Perspective**

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Executive Summary

This is the fifth report completed by *ascilite* for the Carrick Institute for Learning and Teaching in Higher Education to inform the development of the Carrick Exchange. It complements research findings discussed in four previous *ascilite* reports (Reports 1-4). Report 5 is a synthesis of particular international research and experience regarding the building of communities to support teaching and learning in higher education, and repository development and implementation. The *ascilite* research continues to explore emerging themes, issues and concerns regarding engagement of the Australian higher education sector with the Carrick Exchange initiative, identification of resources and methods of contribution, and peer review and commentary that support and enable sharing and reuse. This report is based on the findings of a symposium held in Singapore, December 2007, at the 24th annual *ascilite* conference, and input from the literature in the form of three papers published in the *ascilite* conference proceedings and presented at the symposium.

Findings

Experience from research in the United Kingdom (Margaryan and Littlejohn, 2007) suggests that there is a mismatch between the perspective taken by repository managers (or curators) regarding any repository and its community, and the perspective adopted by end users. Managers may fail to realise that users will relate to a repository as only one system within a whole ecology of other related systems and networks. Understanding this, and how users perceive the repository and its communities, is key to effective uptake. A framework generated by Margaryan and Littlejohn provides a practical guide to repository community development and engagement that will be of benefit to the Carrick Exchange team.

American and Canadian experience fostering and managing communities and repositories (Carey, 2007) corroborates the UK research, suggesting that communities which may ultimately link to, or originate from within the Carrick Exchange will be characterised by diversity of purpose, activity, methods and membership. Experience from repositories, “teaching commons” and “collaboratories” in North America indicates that a variety of technical, community and social infrastructure approaches are required to meet the diverse needs of users. The Carrick Exchange should not be overly concerned with only developing “fully-fledged” communities of practice: other less cohesive and short-term communities are likely to derive mutual benefit from the Carrick Exchange, if the Carrick Exchange is relevant to them. The key message from North America for the Carrick Exchange was that emphasis must be on building communities that support the repository, rather than just building the repository.

The Australian experience contributing to this report is derived from the *ascilite* paper presented at the symposium that offered an end-user perspective, and input from conference delegates. Feedback from the symposium focussed on issues of engagement, and corroborated findings reported in previous *ascilite* research including key practitioner interviews, focus groups and reference groups. As a result, ten design principles have been derived from the literature and data, in keeping with the requirements of Cycle 4 of the design-based methodology adopted for the research. The principles are provided in the conclusion, and broadly recognise the need to:

- emphasise community building over provision of artefacts;
- actively integrate contributed resources rather than create a silo of artefacts;
- provide for diversity amongst communities with respect to engagement;
- design a system for end users, not just managers of the system;
- assist groups and communities maintain their identity as they engage with the Carrick Exchange;
- ensure peer review processes are aligned with the needs of the sector; and
- address issues of concern continually emphasised by members of the Australian higher education sector, namely, ease of use, seamless interoperability across systems, perceptible advantage of a system in competition with many other systems, support for change management and attention to issues of pedagogy, promotion and sustainability.

Introduction

Background

This report of the symposium conducted by *ascilite* with delegates attending the 2007 *ascilite* conference in Singapore is the final component of the *ascilite* Stage 2 research informing the development of the Carrick Exchange. The research was funded by the Carrick Institute for Learning and Teaching in Higher Education as a sub-project of the Resource Identification and Networking Portfolio. Further details about the Carrick Exchange project can be found in the *ascilite*/Carrick Exchange Proposal and Project Plan 2007, Lefoe, O'Reilly, Parrish, Bennett, Keppell and Gunn (2007); Phillips, Orrell and Millea (2007) and on the Carrick Institute for Learning and Teaching in Higher Education website (<http://www.carrickinstitute.edu.au/carrick/go/home/rin/pid/381>).

This is the fifth report on research conducted by *ascilite* for the Carrick Exchange and complements the research findings contained in four previous reports:

Report 1: The Literature Review (Philip, Parrish, Lefoe & O'Reilly, 2007a)

Report 2: Themes, Issues and Concerns Emerging from Key Practitioner Interviews (Philip, Parrish, Lefoe & O'Reilly, 2007b)

Report 3: Themes, Issues and Concerns Emerging from Focus Groups (Philip, Parrish, Lefoe & O'Reilly, 2007c)

Report 4: Final Report (Philip, Parrish, Lefoe & O'Reilly, 2007d)

This report continues to explore emerging themes, issues and concerns presented in *ascilite* Reports 1 – 4, and provides strategies, in the form of design principles, to promote acceptance and uptake of the Carrick Exchange and initiate further development of guidelines for the continuing development of the Carrick Exchange.

The report focuses on:

- key findings from three papers presented to inform the symposium delegates of (a) Stage 2 *ascilite* research findings, and (b) contemporary issues in key international repository initiatives; and
- input from symposium participants, particularly with regard to:
 - incentives and clarification of contexts of use that would encourage communities or networks to relocate, reform or establish in the Carrick Exchange; and
 - priorities that the Carrick Exchange should address in order to engage communities and networks.

A final set of ten design principles and suggestions for future research activities are presented in the conclusion.

Aims and outcomes

Aims

The primary aim of the research in Cycle 4 was to:

1. Engage a broad spectrum of expert and novice practitioners from amongst the international delegates attending the *ascilite* conference with the Stage 2 *ascilite* research findings as they relate to resource identification and contribution, peer review, and user engagement with the Carrick Exchange; and
2. Enable this informed group of stakeholders, including invited key representatives from international repository projects, to explore strategies to promote acceptance and uptake of the Carrick Exchange, and initiate the development of guidelines (design principles) in light of these findings.

Outcomes

The intended outcomes of the symposium were to:

- Explore recommendations from the *ascilite* Stage 2 research;
- Facilitate the exchange of data and expertise on international best practice with respect to incentives, rewards and recognition for users of repositories and digital services;
- Facilitate the exchange of data and expertise on international best practice with respect to incentives, practices and protocols for peer review and commentary of resources submitted to the Carrick Exchange;
- Identify possible solutions to how user needs and their contexts of use can be met by the Carrick Exchange;
- Evaluate and prioritise the outcomes of discussions and issues emerging from the symposium.

Methodology

The design-based methodology was continued in the fourth and final cycle of the Stage 2 *ascilite* research. (See Figure 1.) Full details of the methodology are provided in Report 4. Overall, the aim of all four cycles was to inform the development of possible strategies, solutions, recommendations and policies for the Carrick Exchange in three key areas: engagement, resource contribution and identification, and peer review and commentary. In addition to a literature review, data was gathered as follows.

Cycle 1: Key practitioner interviews

Interviews were conducted with 29 key members of the higher education community, including national and international interviewees, chosen from across disciplines, repositories, institutions and fields of interest, to explore their needs and contexts of use for collaborative and communication spaces for learning and teaching, and of resources available for sharing and reuse within the higher education sector (see Report 2).

Cycle 2: Focus groups

3 focus groups were conducted to discuss the issues arising from Cycle 1. The focus groups included 22 practitioners representing academics, members of cross-institutional teams, educational and staff developers, librarians, early adopters and repository representatives, with a mix of gender and cultural backgrounds (see Report 3).

Cycle 3: Reference groups

24 *ascilite* members were accepted to participate in 3 reference groups (Engagement Strategies; Resource Identification and Contribution; and Peer Review) to discuss Reports 2 and 3 in an online forum, validating the findings and adding to the commentary (see Report 4).

Cycle 4: ascilite symposium

The stakeholder group for Cycle 4 included the *ascilite* community and international representatives. An international symposium was hosted in Singapore, at Nanyang Technology University, during the 24th Annual *ascilite* Conference. In the lead-up to the symposium the latest *ascilite* report (Report 4) for the Carrick Exchange was provided to reference group members. In addition, three refereed papers were circulated to all *ascilite* members prior to the symposium as background to the discussion and for dissemination purposes. The papers aimed to report on current issues in repositories and their communities developed in the UK, USA and Australia. The authors and papers were:

Paper 1 – Anoush Margaryan and Allison Littlejohn, Caledonian Academy Glasgow Caledonian University, UK. Representing the CD-LOR project: *Communities at cross-purposes: Contradictions in the views of stakeholders of learning object repository systems* (Available at: <http://www.ascilite.org.au/conferences/singapore07/procs/margaryan.pdf>)

Paper 2 – Tom Carey, University of Waterloo, Canada and California State University, USA. Reporting on personal experience of the MERLOT and CLOE repositories: *From repositories supported by communities to communities supported by repositories: Issues and lessons learned* (Available at: <http://www.ascilite.org.au/conferences/singapore07/procs/carey.pdf>)

Paper 3 – Robyn Philip, The University of Sydney; Geraldine Lefoe, University of Wollongong; Meg O'Reilly, Southern Cross University, Dominique Parrish, University of Wollongong. The Stage 2 Carrick Exchange *ascilite* research team: *Community, exchange and diversity: The Carrick Exchange* (Available at <http://www.ascilite.org.au/conferences/singapore07/procs/philip.pdf>).

These papers can be accessed from the 2007 *ascilite* conference website: <http://www.ascilite.org.au/conferences/singapore07/procs/>

An estimated 40 people attended the symposium over the three and a half hour session. Following the presentations of the 3 papers, including a video conference link for the UK presenters, approximately twenty people participated in the final discussion, seven of whom included Carrick Exchange and *ascilite* project team members. One of the *ascilite* Project Leaders facilitated the group discussion with all in attendance while the Project Manager and Research Manager documented this discussion. The session was also recorded (audio) for cross-referencing and validation purposes. The program for the symposium is attached as Appendix D. The key findings derived from the symposium are reported below.

Limitations of the research

The research had a number of limitations. Firstly, participation in the research has predominantly been by those who have an interest in technology. It has been difficult to obtain representation across all of the research activities from practitioners with limited use of technology. An exception might be groups such as the EnRole group (a Carrick Institute funded online role play network), which focuses more on the pedagogical aspects of role play (rather than the technology), but has a need for online collaboration and communication.

Secondly, the *ascilite* project team could not directly control who participated in the Carrick Exchange symposium. The means of generating attendees for the symposium was by open invitation to all delegates attending the *ascilite* conference. The symposium was conducted in the afternoon on the second day of the conference. This scheduling was in direct competition with three other concurrent sessions.

Thirdly, Cycle 4 of the Stage 2 *ascilite* research was conducted in December, at a time when individuals are often extremely busy with professional and personal demands. As such, it is difficult to engage university staff in extra activities, such as responding to this research, if it is not directly related or in addition to their core responsibilities. Whilst numbers attending the symposium were less than expected, they were still sufficient to provide a useful data set.

Exploring (1) user engagement; (2) resource identification and contribution; and (3) peer review.

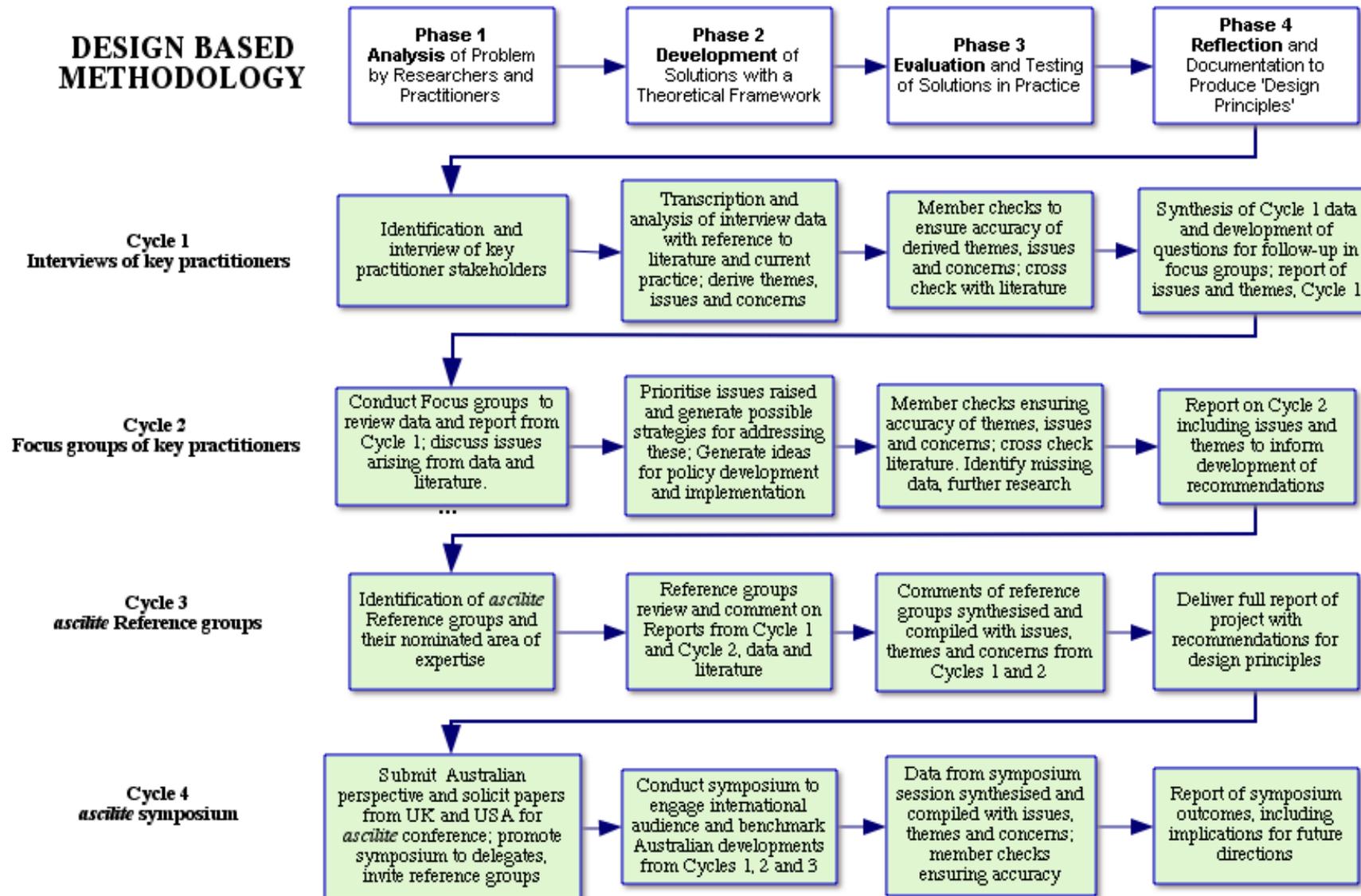


Figure 1: Project Methodology Illustrating the Four Cycles of the Design-Based Methodology

Summary of the findings from the literature

Paper 1 – Research and experience from the United Kingdom

Anoush Margaryan and Allison Littlejohn: *Communities at cross-purposes: Contradictions in the views of stakeholders of learning object repository systems*

The findings reported by Margaryan and Littlejohn are the result of two years of research for the Community Dimensions of Learning Object Repositories project (CD-LOR), funded by the UK Joint Information Systems Committee. The aim of the project was to scope and investigate the key factors impacting on the uptake of digital repositories. The thesis of this paper is that many learning object repositories (LORs) are under utilised because there is a mismatch between the views of those who establish repositories, i.e. the curators (or managers), and the end users of the systems. Three repositories were analysed as activity systems to discover how their related communities perceived and used them. A framework for addressing key issues and guiding early development and implementation of LORs was developed as a resource to help communities, curators and end users avoid working at cross-purposes in this context.

Margaryan and Littlejohn note that repository use varies “according to the needs of individual communities” (p.625). This seems obvious, but is crucial, and a strategy that LOR curators can fail to sufficiently recognise and prioritise. According to the authors, factors that influence community use of LORs include (p.625):

- Motivational factors (e.g. roles, status community ground rules);
- Control factors (e.g. membership, gate keeping processes, rewards and incentives); and
- Cohesions factors (e.g. size, location, modes of communication, community rhythms and maintenance processes).

The way repositories are used also depends on seven dimensions of communities identified by Margaryan and Littlejohn. These include: the purpose of the community; the modes of dialogue adopted around it; roles and responsibilities of members and stakeholders; the coherence of the community; the context in which the community exists; the implicit and explicit rules governing the community; and the predominant pedagogy used in the community.

The Activity Theory conceptual framework employed by Margaryan and Littlejohn allows analysis of a LOR as a “participatory environment where knowledge is constructed rather than ‘exchanged’ or ‘consumed’” (p.626). It also facilitates a holistic approach to understanding the inherent contradictions and complex socio-cultural relationships that govern development and growth of a LOR and its community.

Table 1 below summarises the contradictions presented in the paper between the perspective of the curators and those of end users from three representative repositories: Jorum, DIDET and The Spoken Word. The communities located around The Spoken Word and Jorum repositories were defined as loosely knit examples, and the communities targeted were from all discipline groups. The DIDET community members were more closely knit, and came from the disciplines of design and manufacturing Engineering. In addition, Jorum is a national repository, while The Spoken Word and DIDET repositories are international in their outreach.

Table 1: Contradictory perspectives of repository users and curators

LOR	Perspective of repository curators	Perspective of repository users
Jorum (National LOR, UK)	<ul style="list-style-type: none"> • Long-term perspective of resource sharing. • Main aim of the repository – improved teaching and learning. • Key focus of the repository is the potential for housing resources. • Community is viewed in broad terms e.g. community of repository users. 	<ul style="list-style-type: none"> • Short-term, perspective of resource sharing, meeting current needs. • Fundamental purpose of the repository – administrative functions. • Uses a range of tools available inside and outside the system, not just those available at the LOR. • Communities are primarily institutional, departmental or professional.
Spoken Word Services (International LOR, UK & USA)	<ul style="list-style-type: none"> • Aim of the repository is to “enhance and transform the educational experience” (p.629). • Aim to enable “sharing of authentic audio resources” across institutions in US and UK higher education systems (pp.629-630). 	<ul style="list-style-type: none"> • Repository provides opportunity to access resources that are “interesting and motivating” for students (p.629). • Users want to source resources to use in their courses. • Perception of the degree of community cohesion may differ according to location and allegiance of individual members.
DIDET (International LOR, UK & USA)	<ul style="list-style-type: none"> • Goal of the repository is for students to learn “through collecting, sharing and reusing resources”. (p.632) (Difference in emphasis of outlook rather than difference of purpose.) 	<ul style="list-style-type: none"> • Main goal is to be supported in information resource management required to complete projects. (Difference in emphasis of outlook rather than difference of purpose.)

In terms of the perspective taken by curators and potential end users, the Carrick Exchange might be viewed as having the same characteristics as the Jorum example.

Analysis of the data gathered in this research highlighted two major mismatches regarding the perspectives of repository curators versus the perspectives of end users:

1. Curators focus on the repository and its functionality rather than how it might be used within a number of inter-related systems, while users see the repository as one component of “an entire activity system” (p. 633).
2. The concern for curators is the long-term goals of the repository, while users focus on their immediate needs.

In essence the analysis suggests that the repository curators are often not aware of:

- Users’ expectations of the repository;
- Users’ views of communities to which they belong;
- Implicit and explicit rules that govern these communities; and
- Other tools utilised alongside the repository.

That is, curators are not sufficiently aware of users’ needs and the specific contexts of use of the repository and its related communities.

Guiding framework

A practical guiding framework proposed by Margaryan and Littlejohn (p.634), allowing for systematic examination of the contradictions and issues arising around repository and community development is set out below. Expressed as a series of questions, the framework may guide Carrick Exchange managers in better aligning their goals for a repository with the needs of users. (See Figure 2.)

1. *Why are you setting up a learning object repository?*
2. *How many communities do you serve?*
3. *What is the purpose of the community that the repository will serve?*
4. *Who are the key actors in the community and who, of these, will contribute to the repository?*
5. *What is the pedagogic approach of the community?*
6. *How coherent is the community?*
7. *What are the modes of participation and communication within the community?*
8. *What are the key factors in the ecology of the community?*
9. *What is the business model of the repository?*
10. *How will your LOR evolve?*

Figure 2: Margaryan and Littlejohn framework.

Paper 2 – Experience from North America

Tom Carey: *From repositories supported by communities to communities supported by repositories: Issues and lessons learned*

Carey's paper raises an important conceptual issue regarding the development of communities and repositories, which is encapsulated in the title of the paper. Carey stresses the importance of adopting a *community-centred view* as the locus for development, rather than a *repository-centred* one. Carey's conclusions are personal ones drawn from his experience of MERLOT, CLOE, ELIXIR and the California State University, and large-scale "collaboratories" in North America. His two main conclusions about community and repository development are that:

1. a full range of possibilities needs to be explored regarding, e.g. (a) aggregation versus co-creation of resources, and (b) the range of contributions of resources, information and knowledge that can be considered;
2. some users' needs can be met "without the full infrastructure of a distributed community of practice" (p. 126).

The message is that different technologies, social infrastructure and community approaches are required to meet the diverse needs of users. The concept of community may be interpreted in a variety of ways, and community structure can be diverse, loosely or tightly knit, its purpose fixed or more broadly defined. Carey distinguishes amongst the following types of communities:

1. *a community of practice*: the most coherent community, based on the Wenger's model, where people with a common interest in a subject or problem collaborate over an extended period of time, sharing ideas and solutions, so as to "establish professional identity and norms for practice" (p.124);
2. *a community of interest*: a group of people who share a common interest or passion;
3. *a community of purpose*: project or objectives-based groups – e.g. the discipline communities on MERLOT;
 - a community of inquiry: a community of purpose where the aim is inquiry into an issue, matter or problem – often characteristic of higher education; and
 - learning communities: staff and/or faculty based learning groups; another type of community of purpose.
4. *a community of action*: e.g. the CLOE resource development teams which cooperatively design reusable learning resources.

Communities of interest to communities of purpose

Carey suggests that the Carrick Exchange could function as an enabler for community development, moving loosely allied communities of interest into communities of purpose to achieve an outcome. An example of this (an *ascilite* suggestion) would be establishment of a community on the Carrick Exchange of those loosely interested in developing manageable and appropriately rewarded peer review processes across the higher education sector. The Carrick Exchange could foster development of a *community of purpose* which takes this interest further so that the group becomes more coherent by working towards a set of achievable goals. Communities of purpose such as this may exist for a finite period, and/or membership may fluctuate over time.

The fifteen discipline communities on MERLOT are characterised by two key elements:

- *shared purpose and shared work artefacts.*

Other drivers for engagement are:

- *Local catalysts* (champions) who drive usage in partner institutions by liaising and mentoring colleagues, and communicating advances to the resource base to colleagues;
- *Strategic priorities* at the local level to which MERLOT contributes visibly and measurably (e.g. for online course development, course redevelopment which demands reduction in costs through strategic reuse of materials, improving access to under-served groups).

Carey, citing Woolis (2007), notes that thinking about advancing practice with educators in this way can be seen as being driven by either passion, or absolute need (pain):

- *The Point of Passion*: drives contributions to the shared teaching space, "aided but not replaced by whatever incentives and support structures can be put in place" (p. 125).
- *The Point of Pain or Problem*: the majority of users will not contribute to the system, but will use it when there is a specific personal teaching problem or strategic institutional challenge to resolve; that is, if the cost benefit analysis is favourable.

CLOE and cooperative resource design

Carey characterises the Canadian CLOE cooperative cross-institutional design teams as *communities of action*. The policies adopted and ensuing conditions of grants made available to build learning resources, reusable across multiple contexts, should be of interest to the Carrick Exchange. Authors receiving grants take primary responsibility for resource development and testing. However, the authors must identify academics at other partner institutions who participate in both the design process and subsequent reuse of the same resource. The additional academics provide formative peer review throughout the process – from development to implementation in different contexts. Evaluation data confirms that the cross-institutional, peer review process is key to ensuring reusability in multiple learning environments.

The ELIXIR program and faculty learning communities

ELIXIR (<http://elixr.merlot.org>) is a part of the MERLOT Innovation Projects program. It is intended to support academic learning communities and staff development initiatives. This is achieved by providing theme- and discipline-based case studies of exemplary teaching practice. The outcomes are expected to be increased adoption of new teaching practices and provision for teachers with the experience of using reusable resources within their own learning environment.

Collaboratories

Collaboratories are large-scale, distributed scientific collaborations in the USA. Table 1 in the Carey paper distinguishes different resource types that tend to be shared in collaboratories, and maps these against different types of collaborative activities that result from this sharing. *Aggregating* tools, information and knowledge across communities separated by distance requires different activity and management processes to those required to *co-create* tools, information and knowledge collaboratively at a distance. Carey applies the framework to the Carrick Exchange highlighting some of the different resources and activities that aggregated resource development and co-created resource development promote (see Table 2, p.126). The point is made that different technical and social infrastructures will be required to deal with different types of content and different activities expected to generate in and around the Carrick Exchange.

Paper 3 – Australia

Robyn Philip, Geraldine Lefoe, Meg O'Reilly, Dominique Parrish: *Community, exchange and diversity: The Carrick Exchange*

The contents of this paper are familiar to the Carrick Exchange development team, as they include a refined summary of Report 2, so the conclusions will not be reiterated here. It should be noted that the updated findings from Report 4 were presented at the symposium to ensure delegates were aware of the most current findings from the project. The design principles expressed in the *ascilite* paper and Report 4 provide a useful summary of findings. The eight design principles from Report 4 are provided in the conclusion to this section and cross-referenced to other international perspectives. (See Table 2.)

Conclusions from the literature

The UK experience suggests that there is a mismatch between the views of curators and the perspective of end users regarding a repository and its community. Of particular note is the curators' failure to realise that users will relate to any repository as only one system within a complex ecology of other related systems and networks. Understanding this, and how users perceive the repository and its communities, is key to effective uptake. End users will service their immediate needs and not be concerned with curators' long-term goals and aspirations. The framework of ten questions generated by Margaryan and Littlejohn is a practical guide to repository community development and engagement which can be immediately adopted by the Carrick Exchange management team.

Experience from repositories, "teaching commons" and "collaboratories" in North America indicates that a variety of technical, community and social infrastructure approaches is required to meet the diverse needs of users. The Carey paper corroborates the UK research in that diversity of purpose, activity, methods and membership will characterise communities that may ultimately link to, or originate within the Carrick Exchange. The Carrick Exchange should not be too concerned with developing "fully-fledged" communities of practice: other less cohesive and short-term communities will derive mutual benefit from the Carrick Exchange if relevance is demonstrated to members. Four key drivers for usage of MERLOT identified by Carey may have relevance for the Carrick Exchange context, namely:

- shared purpose,
- shared work artefacts,
- passionate local catalysts (champions), and
- personal and institutional strategic priorities.

The North America experience also indicates that there is a need to promote activities around *aggregated* resources: for example, Carrick project reports should not remain as "tombstones" to past initiatives, they should be actively integrated into ongoing developments. Similarly, registered membership is not a true indication of active membership.¹

The eight design principles derived from the *ascillite* Report 4 are summarised in Table 2 below. The implications from the international research are indicated.

Table 2: Comparison of development needs with international perspectives

Australian Experience	United Kingdom	North America
<i>Design principle 1:</i> Recognition of the diversity of potential users and their needs.	Why are you setting up the learning object repository [and its community]? (Framework Q1)	Explore a full range of possibilities regarding resources and communities. Note the MERLOT first two key usage drivers: shared purpose and shared work artefacts.
<i>Design principle 2:</i> Seed the repository with resources closely related to the mission of the sponsoring body.	What is the purpose of the community that the repository will serve? (Framework Q3)	Project reports could become "tombstones" for past projects, unless they are actively integrated to keep resources "alive".

¹ MERLOT in 2007 had a registered membership of about 54,000; active membership documented in 2003 was thought to be about half that - about 27,000 users visited the site on a monthly basis.

Australian Experience	United Kingdom	North America
<i>Design principle 3:</i> Tension between the formal and informal processes of the Carrick Exchange.	How many communities do you serve? (Framework Q2) What is the purpose of the community that the repository will serve? (Framework Q3)	Communities are all different; therefore different technical and social infrastructure solutions are required to support them.
<i>Design principle 4:</i> Funding and management plans and strategies which address development in a staged approach.	What is the business model of the repository? (Framework Q9) How will your LOR evolve? (Framework Q10) The long-term view of Principle 4 is consistent with the view of managers. End users will take a more expedient and strategic short-term view and behave accordingly.	Build on models: CLOE cooperative design model and ELIXIR faculty model.
<i>Design principle 5:</i> Leverage existing discipline communities, special interest groups and networks.	Who are the key actors in the community and who, of these, will contribute to the repository? (Framework Q4) What is the pedagogic approach of the community? (Framework Q5) How coherent is the community? (Framework Q6)	Models: MERLOT discipline based communities and US collaboratories.
<i>Design principle 6:</i> Build on and develop seamless integration with extant organisational and information management systems.	What are the key factors in the ecology of the community? (Framework Q8) What are the modes of participation and communication within the community? (Framework Q7)	Models: MERLOT, CLOE and science collaboratories work across institutions.
<i>Design principle 7:</i> Change management strategies are difficult to implement.	Who are the key actors in the community and who, of these, will contribute to the repository? (Framework Q4) How coherent is the community? (Framework Q6) What are the modes of participation and communication within the community? (Framework Q7)	MERLOT key drivers for usage : identified shared purpose, shared work artefacts, passionate local catalysts (champions), and leverage of personal and institutional strategic priorities. Use ELIXIR model and provide examples and case studies from which teachers learn about reuse, by reusing.
<i>Design principle 8:</i> Peer review of learning and teaching resources is both an incentive and a disincentive for contributors.	How coherent is the community? (Framework Q6) What are the modes of participation and communication within the community? (Framework Q7)	CLOE experience of supporting cooperative peer-reviewed design is positive in terms of reuse and sharability.

Findings from the symposium

The three questions posed to *ascilite* participants for discussion at the symposium were:

1. *What professional communities and networks do you belong to?*
2. *What would encourage your community or network to relocate, reform or establish on the Carrick Exchange?*
3. *In terms of a staged approach, what are the priorities for the Carrick Exchange to engage communities and networks?*

Representation

Question 1. What professional communities and networks do you belong to?

This question was posed to determine the representation at the symposium and to encourage the delegates to consider engagement with the Carrick Exchange from a personal and community perspective. Participants came from Australia, New Zealand and Singapore, and stated that they belonged to:

- project teams,
- subject course teams,
- e-learning associations,
- departmental and special interest groups,
- Open and Distance Learning Association of Australia ODLAA,
- The Australasian Society for Computers in Learning in Tertiary Education (*ascilite*),
- Australasian Council on Open, Distance and E-Learning (ACODE),
- Council of Australian Directors of Academic Development (CADAD),
- Faculty liaison network (UOW),
- Hume global learning network,
- The Centre for Educational Technology and Interoperability Standards (CETIS) list,
- Distance Education Association,
- Australasian Association for Research in Education (AARE)

Some delegates belonged to more than one group. It is also interesting to note that some delegates identified themselves as members of informal groups (e.g. corridor teams – people who in passing others in the corridor discuss important issues). Further details of the informal groups identified by symposium delegates are provided in Appendix A.

Issues of engagement

Question 2. What would encourage your community or network to relocate, reform or establish on the Carrick Exchange?

Delegates commented on issues similar to those raised in the key practitioner interviews, focus and reference groups. Comments focused on ease of use, the need for the system to have a perceived advantage over other systems, the engagement of diverse potential

membership, sustainability and legacy into the future and technical issues. A transcript of the symposium discussion is provided in Appendix B.

Ease of use:

- It must be easy to access the system and easy to locate desired resources.
- Have RSS feeds to push information out to registered users.
- Enable single sign-on.

Perceived advantage:

- The Carrick Exchange must provide added value and incentive for users; that is, offer users something different to what is already available to them on other sites (e.g. a single portal for multiple groups, a peer review system that is effective and recognised, a function that cannot be performed in other systems or that performs better in the Carrick Exchange).
- Capitalise and promote the perceived advantage that the Carrick Exchange is targeting and designed for universities and the higher education sector.
- Enable access, through a Carrick Exchange single sign-on, to “everything I want to access”.
- Provide exemplars of learning and teaching, these might be purposefully commissioned through the Carrick Exchange.

Engagement of a diverse potential membership:

- Use push technology to promote user engagement (e.g. alerts, electronic newsletters).
- Provide support to users in effective and efficient knowledge management.
- Provide a “human face” to the Carrick Exchange.
- Provide trigger mechanisms to identify users’ needs and readiness to expand and develop their use of the Carrick Exchange.
- Provide details on the incentives (these should be underpinned by research-based evidence and developed in consultation with universities and the higher education sector) for participation in the Carrick Exchange.
- Ensure that all members of higher education communities can use and are not excluded from the Carrick Exchange (in particular this relates to communities and networks with members from the other education sectors – TAFE and K-12).
- Publicise and promote the Carrick Exchange to potential users.

Sustainability and legacy into the future:

- Enable communities to create a sense of ownership and belonging within their Carrick Exchange group space (e.g. enabling groups and communities the ability to differentiate their space from the Carrick Exchange; and the means to share resources that have a learning legacy for others.)
- Ensure there are methods for filtering out resources that are no longer required or active.
- Ensure the peer review process has the potential to become integrated into future Government policies regarding reward and recognition, and has benefit to all stakeholders in the long term.

Technical issues:

- Provide support for knowledge information management and information sharing.
- Provide groups and individuals with the ability to distinguish or differentiate their space in the Carrick Exchange (i.e. the means to be able to maintain a sense of identity in terms of the look and feel and badging of their space in the Carrick Exchange).
- Ensure that the Carrick Exchange has effective search functionality and support mechanisms.

Priorities

Question 3. In terms of a staged approach, what are the priorities for the Carrick Exchange to engage communities and networks?

Delegates were asked to nominate one priority. The following list provides the feedback received. The framework from the CD-LOR project for identifying barriers to uptake of repositories has been used to cluster issues raised (Margaryan, Currier, Littlejohn, & Nicol, 2006).

Socio-cultural issues

- Actively promote and support the use of the Carrick Exchange by individuals within the higher education sector, for example academic and educational developers, lecturers and librarians.
- Explore innovative strategies for promotion and dissemination of the Carrick Exchange across the higher education sector (e.g. clusters of people in the university working together face-to-face to build a community of practice and engaging with the Carrick Exchange to support this community).
- Establish multiple alternatives to search for resources in the Carrick Exchange including, for example, discipline-based searches and activity-based or learning approach searches.
- Ensure that when the Carrick Exchange is released there is a critical mass of content, resources, and communities in the system so that users gain value and an appreciation of the system as soon as they enter.

Pedagogic issues

- The Carrick Exchange should promote and facilitate learning and teaching curriculum redesign and development.
- Establish a peer review system that ensures there is a recognised up-front advantage for all stakeholders.

Organisational and information management issues

- Engage with senior management in universities to facilitate their engagement with the Carrick Exchange in terms of peer review, rewards and recognition and intellectual property.
- Collect from the outset key success measures for the Carrick Exchange This is predominantly going to be information on the extent to which the system is being regularly used by course teams across universities.

- Instigate a paid, funded position within each university to promote and support use of the Carrick Exchange in much the same way that support was provided to universities for the Promoting Excellence Initiative.
- Lock in 5 year funding to sustain and maintain the Carrick Exchange.
- Lobby government departments to ensure development of excellent teaching resources is recognised in the same way that excellent research is recognised.

Technological issues

- Ensure that the Carrick Exchange is easy to use and that first time users come in and immediately access something of value so they have reason to return.
- Support practitioner use of the Carrick Exchange with targeted training.

Reference group feedback

In addition to the symposium, feedback from the twenty-two reference group members was invited for their views on the findings of Report 4 and the three *ascilite* conference papers. As indicated in the Methodology section, closeness to the end of the academic year probably prevented members of this group offering responses on the project one last time. No responses were received. This does not necessarily indicate disinterest, but more likely pressure of work and difficulties integrating the activity within the academic calendar: an issue of engagement that the Carrick Exchange may wish to note.

Strategies to promote acceptance and uptake of the Carrick Exchange

The design principles provided in the conclusion of this report are regarded as the synthesis of the strategies derived from the Cycle 4 research.

Conclusion and design principles

Response to the papers and reports, and the research and development of the Carrick Exchange so far, has been positive from the *ascilite* community and those consulted throughout the process. However, within Australia and internationally, enthusiasm for the initiative is tempered by experience of implementation of new technologies, and appreciation of the difficulties of engaging individuals and communities, and sustaining interest over time. The *ascilite* research has provided an end-user perspective across a representative section of those in Australian higher education most familiar with introducing improvements to teaching and learning. The following design principles consolidate the findings of Cycle 4 and are the recommendations from the research team to the Carrick Exchange managers.

Design principles

Design principle 1: Build a community supported by a repository, not a repository supported by a community, prioritising the needs of end users of the Carrick Exchange.

Design principle 2: Seed the repository with excellent and exemplary resources, including Carrick-based resources, but work to keep these actively integrated and in use, and the collection “alive”.

Design principle 3: Provide for diversity of communities, e.g. communities of practice, purpose, interest and action, plus many other loosely connected networks. Importantly, different technologies, social infrastructure and community approaches will be required to this end.

Design principle 4: Leverage existing discipline communities, special interest groups and networks, and monitor methods of engagement and barriers to use in the new environment.

Design principle 5: Provide the infrastructure and tools for groups and communities that use the Carrick Exchange to differentiate their space within the Carrick Exchange, thereby enabling them to establish a sense of identity.

Design principle 6: Establish a framework for community development and engagement. This could be managed by adapting the CD-LOR ten point guiding framework for early development so as to design for end users as well as system managers and avoid working at cross purposes.

Design principle 7: Address issues key to engagement of the sector that are consistently identified by potential end users: ease of use, seamless interoperability with other systems, the need for the system to have a perceived advantage over other systems, support for pedagogic issues and change management, engagement of a diverse potential membership, sustainability and legacy into the future.

Design principle 8: Ensure the adopted peer review process is sustainable, aligned to the needs of the sector and beneficial to all stakeholders. Adapting the CLOE cooperative design model (see p.15 of this report) for the development of resources and peer review is recommended.

Design principle 9: Ensure there is effective and appropriate publicity, marketing and promotion of the advantages of the system to the target audience

Design principle 10: Ensure effective strategies are used for sustainability and longevity of resources, activities and communities. These may include effective archiving and monitoring practices.

Considerations for future research

The Carrick Exchange may wish to consider future research into documenting, observing and evaluating use of the Carrick Exchange by pilot groups with particular emphasis on their community characteristics and practices. Consideration should be given to group membership characteristics, coherency of the communities, integration with other communities, level of usage of the Carrick Exchange compared with other networks and databases utilised by each group on a day-to-day basis.

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Appendices

Appendix A: Informal groups identified by symposium delegates

The question of '*What professional communities and networks do you belong to?*' posed to symposium delegates generated the following responses for informal groups and networks:

- Institutional 'corridor' teams,
- e-learning association,
- EnRole (role play community),
- Regional academic developers group,
- A university educational design community
- A central e-learning support team,
- Biology department network,
- A mailing list,
- A copy editing network,
- Facebook,
- A collaborative group of academics based in the UK,
- Various course teams,
- Second life
- Resource Identification & Networking (RIN),
- Plagiarism group,
- Project teams
- Discipline group teams.

Appendix B: Transcript of symposium discussion in response to Question 2 – Issues of engagement

The following is a selective transcript of the discussion at the *ascilite* symposium in response to Question 2: *What would encourage your community or network to relocate, reform or establish on the Carrick Exchange?*

Ease of use:

- *For people to make the transition it must be easy to get into the system. Make it easy for me to find what's relevant. Have RSS feeds to push information to them. Try and find ways to make it very easy by single sign on if possible.*
- *Single sign-on is the ultimate aim.*

Perceived advantage:

- *It has to offer something different to what we are getting on other sites such as a single portal for multiple groups; the ease of use - it has to be adding value because we are not going to use it just because it is easy but if it's got something of use for us, a peer review system that is effective and recognised ... then we will use it if it's easy enough to use. There are plenty of communities out there but not targeted towards higher education and universities so it will have a bit of status that you are going to find like-minded people there. I like the idea of being able to log onto my computer in the morning and it comes up [the Carrick Exchange] and through that I can access everything I want to access.*
- *The thing that people keep saying is that they are time poor – so something that could bring communities over is to set up an aggregation that enables a single communication channel for log in and to pull a feed off that and sent to a single point where it can be accessed by mobile phone or computer, email or iPod for example*
- *There are two important principles that affect whether organisations or individuals move to a new system – people consider moving to a new system when they are looking for a function to be performed that they can't perform through the other systems they are presently using, they search for a new system that will perform that function then when they find a system that looks like the antidote they'll make the decision to move to that system if it doesn't perform more poorly than the system they are already using in terms of key functions they need to have perform so there are 2 aspect the attraction and also the penalties that you pay for switching across.*
- *Is there an intention to have learning and teaching exemplars? And will it be up to the disciplines to organise these? It would be most useful if particular exemplar showcases could be commissioned and shared through the Carrick Exchange.*

Engagement of a diverse potential membership:

- *Need for some sort of push factor to get people to move to a new space in other communities ... there are a number of spaces that have been tried and fallen by the wayside. They're struggling with knowledge information management and information sharing issues for a number of years and no satisfactory solution has emerged,*

mountains of information gets lost for all time they've tried databases, websites blogs, wikis but nothing seems to work. What would bring a group like this together? What they basically need is a knowledge management consultant to come and tell them how to organise their workflow of work practices so that people know what needs to be documented, when it needs to be documented, what format it needs to be documented in and where it's going to go then so that it's actually useful. While there are lots of people in the group that are enthusiastic to try out new spaces ... the interesting thing about this project for a group like that is that there are people wrestling with precisely these issues on a high level and possibly some support for that may come over time ... actually having the human face on the ground could be very important.

- *Triggering mechanisms that can help to identify members who are ready or anybody who is ready to move to another level. This is more a comment on what the demo might look like ... having those kinds of organisational functions to manage membership escalation and the relationship management aspect is important. The other thing is that if there was a community within the Carrick Exchange about the research in social networking and managing communities that would be a bit of an incentive because it's very hard to locate the good research on incentives for participation for example ... So it might be a rather strategic benefit establishing that as a specific community and as an attractor.*
- *One of the consequences of structuring the Carrick Exchange within the higher education sector is it creates a division between higher education and most importantly technical and further education but also school education – secondary and primary. I mention it as an example of our community the Hume Club network community and I think that specifically it's a genuine community based on the region, the Hume local government region in which the Victorian University, Sunbury Campus is located. It operates through all levels of education and has need for media facilities that this Exchange [Carrick Exchange] could provide but I rather suspect that it's possible presence will be viewed perhaps with some concern because it's more strongly related to secondary, TAFE and primary than to higher education even though 3 universities are involved.*
- *Although the target audience for the Carrick Exchange is higher education there are partnerships across the sector as such there should not be exclusion of groups from the Carrick Exchange for this or any other reason.*
- *Partnerships broader than just the higher education sector will occur – through the faculties of education and the departments of education within the universities because of scholars from schools and from TAFE and from other aspects of education who want to interact with the Carrick Exchange.*
- *The Carrick Exchange has not created the divide that exists across the education sectors however it does obviously exist and it does need to be looked at, we already have the divide because higher education didn't seem to be engaging in EdNA so we've created our own and although we are saying that it is open and anyone else can use it I think it might need more marketing and strategies than just saying it is open if we are going to try and create a federated approach to education in Australia across the sectors*

Sustainability and legacy into the future:

- *One pivotal point for us [EnRole group] is a sense of ownership from the community itself. When we are working together as a project team we are all using lots of different functionality; we're using Base Camp for this, EdNA groups for that and email for this but don't belong anywhere! It would be a help to us to join a Higher Education initiative and it would be great to be able to feed into something where our work could have some learning legacy for others. So that sense of building something that over time will mature*

and add value to human wisdom and knowledge is the community aspect that would be a pull and not just the tools that the system offers.

- We [MERLOT] have a lot of secondary school teachers who join the MERLOT Science communities and a lot of pre-service teaching programs who assign students the task of creating their own MERLOT collections as a way of preparing them to teach using the National Science Teachers Library, it also messes up your statistics because suddenly there are 15 collections and you think 'isn't that great' but you realise there is a class who have created them as an assignment and you look at them and they are a bit shallow so somehow to filter things out that are no longer active really helps*
- Thinking about peer review and making sure it fits in the future ... maybe if the Government in the future were to think about a TQF like the RQF – then we should be setting up the peer review process so that it has the potential to be accepted by the Government in the future and so that it becomes a true peer review that has benefit in the long term.*

Technical issues:

- I just wanted to ask or add do you still maintain your sense of identity in terms of the look and feel? So for example the EnRole project has developed a certain look and feel, will that show on the Carrick Exchange? So can we make our pages in the Carrick Exchange look and feel like EnRole pages? .*
- There needs to be a means of distinguishing or differentiating groups in the Carrick Exchange. Users will move in and out of groups' spaces, and are susceptible to overt signs of membership [i.e. badging] so there must be some differentiation so that not all spaces are the same – e.g. all my EdNA groups look and feel the same.*
- It seems to be important that if there are already 150 projects within Carrick it's [Carrick Exchange] obviously going to be quite big so it's important for me or someone else to be able to search and have good keywords and good ways of finding what you or the group are looking for.*

Appendix C: Transcript of symposium discussion in response to Question 3 - Priorities

The following is a selective transcript of the discussion at the *ascilite* symposium in response to Question 3: *In terms of a staged approach, what are the priorities for the Carrick Exchange to engage communities and networks?*

Socio-cultural issues

- *I am a great believer in dissemination by word of mouth so I think that the best way to expand the activities of the Carrick Exchange would not be from the top down but would be from the bottom up.*
- *A discipline based approach where you are trying to engage educational designers, and maybe from our perspective a discipline-based approach wouldn't necessarily work for project EnRole— what would work is a role-based, problem-based learning approach - so activity-based might be another way of searching.*
- *A way of being able to get the latent majority involved, too often we end up just being innovators and I think you need to have something there that's going to mean that when you are talking to other people who are perhaps not converts to teaching and learning in higher education that there's some way of maybe not having all the answers but dissemination and involving others is a really good thing.*
- *The initiatives that have been more successful from what I have seen is when they put in place the right framework for success to begin with in terms of implementing taxonomies or whatever the case may be to get the initial shell set up and then building critical mass immediately in terms of the content and the resources and the right communities in that effort. Those are the ones [initiatives] that we have seen really grow very quickly because as soon as you walk in you are gaining value as a user and you feel much more comfortable contributing because you see some examples sitting there in the repository.*

Pedagogic issues

- *I would like to see the Carrick Exchange supporting curriculum redesign and development –really looking at transforming learning and teaching at the macro and the micro [levels].*
- *To me the important thing is the peer review and making sure that there is a recognised up-front advantage to everybody involved.*

Organisational and information management issues

- *Engaging with senior management in universities to facilitate their engagement with the concepts of the Carrick Exchange in terms of peer review, rewards and recognition and Intellectual Property.*
- *The key information to gauge acceptance of the Carrick Exchange is the same as in learning and teaching, that is the key information for this analysis is the course team – the measure of success will be the extent to which course teams across universities and the sector are regularly using this system.*

- *The EnRole dissemination model is not based around a repository solely but by having the clusters of people in the university working together face-to-face and building the community of practice face-to-face and engaging online as part of that and I think that is what Tom was saying too that MERLOT is working because there are people at an institutional level that work on MERLOT as part of their job. This is not a champion but a paid person [to promote the initiative]. I want what Carrick just did which is to send out \$220,000 to each university to support the Promoting Excellence Initiative so they have acknowledged that they need to provide support for universities to get grants and awards and fellowships going; if they want the Carrick Exchange to go they need to provide \$220,000 to each university right now; I know they have just had their budget slashed but to support the Carrick Exchange on a face to face level isn't a technical issue as a cultural issue and it needs support and if they think that all the educational developers in universities are automatically going to become Carrick Exchange converts – they're not and they might even become ante of it because they have so many other things to do as well.*
- *Lock in 5 year funding so the funding doesn't get eroded by the new government.*
- *Lobby DEST to get excellent learning objects recognised in the same allocation way that excellent research is recognised.*

Technological issues

- *Ease of use: [There must be] some way of ensuring that the users come in and get a 'hit' straight away. So whoever it is that's going to come in – the core audience – comes in and gets something of value to enable them to have the buy in to come back. So they have to be trained as a user and they have to come up with as soon as they go in.*

Appendix D: Carrick Exchange Symposium program

Tuesday 4th Dec, 1.30 to 5.00 pm

Carrick Exchange Symposium Chairs: Geraldine Lefoe and Meg O'Reilly

Program Schedule

- 1.35 - 1.55** Greener, E. & Phillips, R. *The Carrick Exchange Project – Background.*
- 1.55 -2.15** Margaryan, A. & Littlejohn, A. (via AcuLearn) *Communities at cross-purposes: Contradictions in the views of stakeholders of learning object repository systems.*
- 2.15 – 2.35** Carey, T. *From repositories supported by communities to communities supported by repositories.*
- 2.35 – 3.00** Philip, R., Lefoe, G., O'Reilly, M. & Parrish, D. *Community, exchange and diversity: The Carrick Exchange.*
- 3.00 to 3.45** Afternoon tea
- 3.45 to 4.00** Greener, E. & Phillips, R. *Overview of Carrick Exchange development site*
- 4.00 to 5.00** Lefoe, G. Carrick Exchange Symposium: Facilitated discussions and feedback plenary.