THE ROLE OF BOUNDARY OBJECTS IN COLLABORATIVE RADIO PRODUCTION

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INTRODUCTION

Digital network technologies have multiplied opportunities for radio producers to collaborate in new ways across geographic and cultural boundaries; creating the expectation that with the right technology producers can work collaboratively and creatively anywhere, at any time on participatory projects. However, as Henry Jenkins (2006) has argued, media convergence needs to be understood as a cultural process rather than a technological endpoint. While participatory media might be a cornerstone of a participatory culture, technology cannot in itself ensure participation.

This case study posits that collaborative production is the result of a dynamic interplay between both technological and social factors, examining some of the ways boundary negotiating artifacts, or boundary objects, can enable effective collaboration between radio producers in co-located and distributed networked environments.

The study began with a cross-border project bringing together radio students from the UK and Australia to work on a radio documentary. Underlying this project was the belief that technology had sufficiently stabilised to enable established processes from analog radio production to be transposed into a networked environment and that any challenges that might arise would be technical in nature. By project end this assumption had been turned on its head, with the emergence of a number of important non-technical obstacles. Over the next five years, initial project insights were challenged, developed and fine-tuned, using a participative action research approach that enabled action (change and improvement), and research (understanding and knowledge), to be achieved at the same time. Central to the study is an understanding of collaboration in co-located and distributed settings and the development of a set of boundary objects as effective production enablers.

A number of works were particularly useful in enabling a more comprehensive understanding of the dynamics of collaboration and it's key influencing factors. The first of these was Olson, Zimmerman, and Bos's theory of remote scientific collaboration (2008). This study of over 200 online collaboratories showed that even when advanced communication technologies are available, collaborations involving geographically dispersed participation have a greater chance of failure than co-located collaborations. The authors identified a number of reasons for these challenges, including difficulty in establishing and maintaining trust, lack of common ground and the nature of the work itself.

A second key reference was Diane Sonnenwald's (2007) four stages of collaboration model (foundation, formulation, sustainment and conclusion). It provided critical insight into the way effective collaboration is constructed dynamically over time. Like Olson, Zimmerman, and Bos, Sonnenwald underlines the complexity that geographical distance introduces into collaborative projects. She argues that the project set-up stage (formulation) is particularly critical to ultimate success, with key issues to be considered at this time including project vision, goals, and the use of information and communications technology (ICT).

As the research project unfolded, the theme of boundary objects emerged, a concept that Star and Griesemer (1989) introduced into the field of sociology through an examination of how artifacts such as specimens, maps, and field notes helped bring about cooperation among stakeholders in setting up a museum of zoology. Since then, a variety of artifacts, from databases to design prototypes, have been examined for their ability to bridge perceptual and practical differences, thereby building common ground and more effective collaboration.

Boundary Objects

Boundary objects are objects which are both plastic enough to adapt to local needs and constraints of several parties employing them, yet robust enough to maintain a common identity across sites. [...] the creation and management of boundary objects is key in developing and maintaining coherence across intersecting social worlds. (Star and Griesemer 1989: 393)

It could be argued that the capacity of team members to combine different perspectives, talents, and ideas, in a way that creates something beyond what could have been achieved individually, is linked to their ability to get beyond the boundaries or differences that divide them as individuals. These boundaries may be engendered by geographic and/or cultural distance, however study findings show that a sense of perceived 'difference' may also be experienced by co-located team members of the same age and culture, attending the same

university. This study found that certain artifacts or 'boundary objects' can play an important role in helping bridge both perceptual and practical distance.

As Vyas and Nijholt (2010) have observed, most research into boundary objects has referred to them within the context of a collaborative work that focuses on bringing productivity and efficiency. This study explores the role of boundary objects as enablers of creative work, with three such boundary objects identified for discussion.

1. Production Templates

Whether radio producers are operating in analog or digital environments, running sheets and production plans are critical elements in the planning, negotiation and production phases of making radio. The study found that the templates used in this project are illustrative of what Lee (2007) calls 'boundary negotiating artifacts' – objects that are used to iteratively align perspectives and solve specific design problems that are part of a larger design project. They achieve this by providing a fundamental infrastructure and focus for critical pre-production activities where the design process is cut down into subtasks to make it more manageable, thereby creating interfaces/ boundaries and the need for making interface requirements explicit. This in turn encourages the dialogue and sharing of perspectives that results in a sense of shared ownership for final outputs.

Segments	Talking Points	Duration
Theme		1:03
Introduction	Welcome to the show. Mention they are with RWAV, RRR. 'Great show coming up': Mention some artists/songs we will be airing: RYAN ALICE, THE MURLOCS, BIG SCARY 'First up we have a Feature Documentary' Kit to provide brief outline of the documentary. Mention that Tom will be joining us in the studio. Also – Later on, we'll be hearing from Curt with his quirky facts of the week and also from Bianca with a review of a new, life changing app she has discovered.	2:00

Segments	Talking Points	Duration
Song	In the Other Room–Ryan Alice Singer song Writer from Ascot Vale; 2010 release from album Leaking Days.	3:21
Introduce Documentary	Zoe and Kit to have a brief conversation about their reactions to the documentary while explaining what it's about. – Recorded in local area of Carlton – Explores the monopoly of the supermarket and the demise of the Milk bar and effect on society/community – Nostalgia	1:00
No Milk Today	*Gets us to 15 minutes*	2:57
Toms IV	*Figure 2: Brief discussion with Tom* Is there a personal story behind why you chose to focus on this niche in society? What do you think about the 'life' of Milk bars, will supermarkets and 7/11stores eventually replace them all? How do you think this is affecting society generally? I got a really strong sense of the community involved in Milk Bars, the regular customers, their quirks etc. The social experience of 'shopping' is now quite a sterile, impersonal experience. How can the average person help struggling milk bars – do you think a community kind of co-op can still exist? What's your ultimate milk bar snack?	5:00
Promo		1:00
Song	We Shall Tread Softly (from Now on) – Fraser A Gorman 'After spending many years plating in 60's Garage band Revolver and Sun Fraser has turned his song writing abilities to country music. You can really hear the influence of Bob Dylan throughout this piece'.	2:38
ID	*Gets us to 24 minutes*	0:05

Segments	Talking Points	Duration
Whats Coming Up	'ITS BEEN A GREAT SHOW SO FAR, BUT DON'T GO ANYWHERE' Mention we have some great music still to come – Big Scary, The Easy Beats. Discussion about alternate ways of living sustainably in Melbourne Pre-recorded follow up interview with independent film maker Rohan Spong after his film premiere in New York. BUT FOR NOW LETS HEAR FROM OUR QUIRKFINDING EXTRAODINAIRE CURTIS WITH HIS ODD SPOT NEWS UPDATE.	1:00
Curt´s Quirks		2:00
Promo		0:20
Curtis' Quirks Chat	*Gets us to just under 30 minutes* LETS HEAR FROM THE MULOCS WITH THEIR AWESOME TRACK, STEP AND STAGGER, STAY WITH US GUYS, YOU'RE WITH RWAV.	2:00

Table 1: RWAV – GROUP 1 – RUNNING SHEET (From ROAR)

Although these templates are not technology dependent, in this project they were available online and much of the negotiation and development occurred asynchronously through shared documents. Study findings indicate that the asynchronous nature of the process provides a useful adjunct to face-to-face production meetings.

> Our extensive, three-page, running sheet was at the very heart of our entire show. It proved to be incredibly helpful and enabled us to stay on track with time and content. Having consistently edited and improved the running sheet we were very confident in the final product and we attribute the success of the show to our excellent organization and planning. (RWAV Participant)
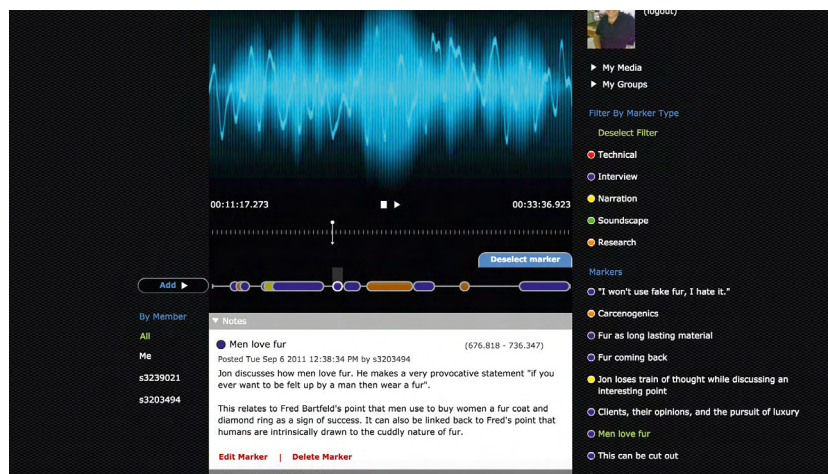
2. Media Annotation

Figure 3: Screen Shot of MAT

Originally developed as a video annotation tool to assist in the evaluation and reflection process within a physical education teaching program, the Media Annotation Tool (MAT) was customised for use in radio production. Media annotation has been successfully embedded into the production processes of live to air and documentaries and in this study found to be a powerful boundary negotiating artefact. Annotation is not only an effective enabler of individual feedback and reflection on practice, but also plays a central role in supporting design exploration and creative collaboration. More specifically, study findings indicate that MAT:

- Facilitates feedback which is fact-based, specific and actionable thanks to its ability to home in on specific parts of the audio
- Opens a space for dialogue which enables team members to see new connections between fields, ideas, and concepts in a way which would not be possible through face to face discussion
- Makes the informal processes of creative collaboration traceable and visible for future cohorts of radio makers
- Supports a range of team exchange from the purely technical to the aesthetic, as well as encouraging socio-emotional exchanges that build common ground and establish and maintain shared understanding

Research suggests that the socio-emotional character of content exchanges may be particularly critical to the development of creative collaboration in an

online environment (Aragon/Poon/Monroy-Hernandez/Aragon 2009: 10). At project outset, the communication style employed in MAT annotations was primarily neutral and task-based (technical in content, factual, objective). As participants moved further into the annotation process and gained more experience in using the tool, their annotations also increased in terms of their socio-emotional content (self-revealing, use of 'I' and 'we', references to feeling as well as thinking). This was true not only in the groups' reflections on their work but also in their feedback on the productions of others, where any criticisms or suggestions for improvement were consistently constructive, creating a strong foundation for any future work that participants might undertake together. The identification of annotation as a boundary object is also significant in terms of the creative nature of the work involved. As Vyas and Nijholt (2010) have observed, most research into boundary objects has focused on their ability to enable productivity and efficiency.

The usefulness of annotation had already been effectively demonstrated in post-production reflection, when it was introduced to bring this same form of co-creative thinking into earlier stages of the documentary and feature production process.

Annotation was used at four different phases of the production/post production process:

- Raw/unedited interview stage (group member feedback and recommendations)
- Edited interview stage (group member feedback and recommendations)
- Finished piece (group reflections)
- Finished piece (feedback from others)

Examples of annotations from each of these phases are included below.

BALANCING A TASK BASED APPROACH WITH SOCIO-EMOTIONAL INPUT

Raw unedited interview stage

Fred had a bad cough when we interviewed him. This will need to be edited out in post-production.
I like this sound-bite; I think it could be a good opening statement for Jon, as he sounds really emphatic about not wanting to use fake fur regardless of its benefits. Would be good to juxtapose with Fred Bartfeld.
This might be a good area to put a little research into so we can segue through narration to some of Tullia's thoughts on reinterpreting old materials, such as vintage fur?
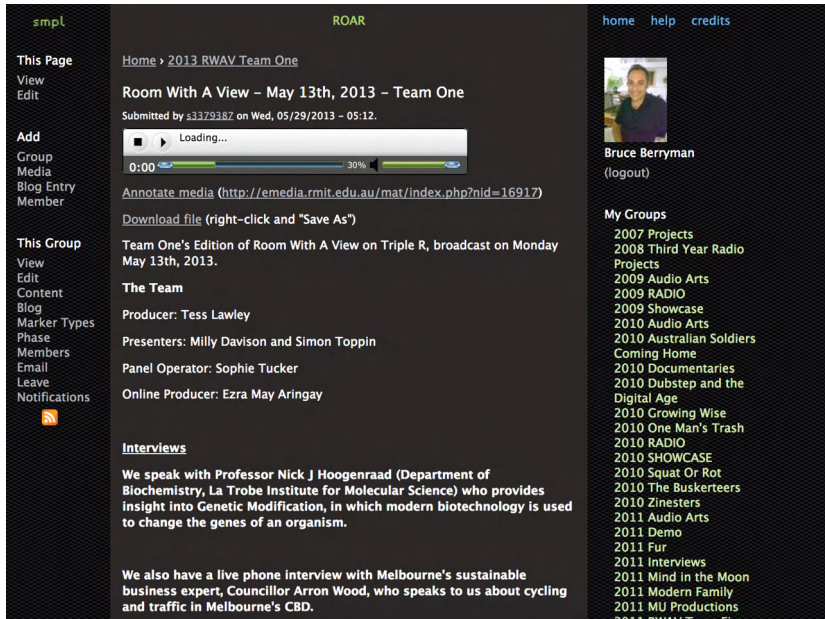
3. Content Management System

Figure 4: Screen shot of ROAR: the CMS designed, developed and implemented during this study.

In Dianne Rees's article The Challenge of Building Positive Boundary Objects (2011) she contends that although shared communication platforms and content management systems have the potential to serve as boundary objects, they often fail to do so because it is assumed that merely deploying the technology will create an impetus to use it and that this impetus will be sustainable. Rees goes on to argue that one of the keys to developing useful boundary objects lies in understanding their audience and in finding ways to adapt the boundary object to different case uses without destroying its shareability. Bechky (2006) too contends that stakeholder input is critical, arguing that all relevant actors need to actively contribute to the co-construction of meaning of a given boundary object.

Since it was first launched, ROAR evolved to become closely identified with the university's radio curriculum and a key boundary object in use. Initially envisaged as a simple archive to house material produced by students, ROAR evolved over time to integrate both a back-end collaborative production space and a publicly accessible distribution site. Study findings indicate that the CMS is particularly appreciated for its flexibility of use. There are few prescribed tools, and those that are prescribed (e.g. MAT) are recognised for their ability to

add real value to the production process. ROAR is also appreciated for its ability to serve as a 'memory' – not only of the programs that teams have produced, which are all archived on the system, but also of the collaborative process engaged in getting there, making explicit the reflections and exchanges which resulted in particular creative decisions being made.

An action research methodology (AR) was employed in this project, motivated by two of its key characteristics – its flexible, spiral process and its collaborative, participatory approach. Implicit within AR's spiral model of planning, acting, observing and reflecting is the notion that with each action cycle there is an opportunity to integrate new learning. An AR approach therefore enables action (change and improvement) and research (understanding and knowledge) to be achieved at the same time. This methodology facilitated a process whereby productions teams and other key stakeholders (facilitator/researcher, IT designers, developers and support team) have actively engaged with the CMS over time, shaping its identity and keeping its 'plasticity' alive through an iterative process of reflective practice and informed action.

However, boundary object status is not eternal. Artifacts become (and remain) boundary objects by being used as such over time (Lee 2007: 307). This is illustrated in the case of both ROAR and MAT; boundary negotiating artifacts that were transformed significantly in response to the needs of its users. After six years of use, the interface of ROAR was somewhat 'clunky', looking tired and very 'last decade' from the users' perspective. As one participant put it, "it's like a Swiss army knife, it has a screwdriver but is it the screwdriver you want to use for the job?" Last year ROAR was archived and replaced by a simpler and cleaner looking CMS. Similarly with annotation, MAT was de-commissioned in favour of using SoundCloud. Although SoundCloud doesn't provide all of the features built into MAT the simplicity, ease of access, upload, annotation and publication enables it to be an effective boundary object within local and transnational collaborative radio production, alas to the price of dependence on a private company's future decisions.

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