

Preliminary Results from a Survey of Multimedia Development Practices in Australia

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Abstract. In this paper we present our preliminary findings from a survey conducted during 2005 of Australian Multimedia Application Developers. Our objective was to understand what development processes and techniques are used and how these relate to practices cited in the literature. We were also interested in what impact the presence of multimedia content has on the process, as well as the differing skill sets it requires in relation to “traditional” software development. In our findings we report on the process models used and the process tasks most often performed, as a first step to determining what is considered best practice in the industry. We found that developers appear to have a much keener sense of their processes than previous studies have suggested.

1 Introduction

The Australian Multimedia Industry is a major developer of “software-like” products, ranging from multimedia CDs and DVDs, to online applications. A fundamental characteristic that differentiates product creation from conventional software development is the inclusion of various combinations of visual media and audio, often providing an interactive experience for users. While these may include significant amounts of “traditional” software the presence of media content requires additional tasks and differing skills to those in conventional software development [1, 2]. To gather information on multimedia development a survey of industrial multimedia practice was undertaken. Our objective was to gain an understanding of the current state of practice and its relationship to multimedia and “traditional” software development practices cited in the literature.

Earlier surveys into multimedia application development have described the approach to design, and as a result the development processes undertaken, as inconsistent [3]. They have also commented on the apparent use of design techniques based in software development being used to capture multimedia design, particularly by those who are crossing over into the industry from “non-multimedia” software development [4]. Further, they show that techniques from film and video production, such as the use of storyboards, scripts and mock-ups are also being used, even when these too can be ineffective in capturing critical aspects, such as interaction [4].

These observations have been attributed to factors such as the diversity of developer backgrounds, the newness of the discipline, and the limited industrial

take-up of specifically designed techniques from academia [3, 4]. However, the impact of these factors on actual development processes and outcomes has yet to be established.

The survey questionnaire was targeted at tying together the factors impacting multimedia processes, to allow us to establish which parameters influenced developers' decisions to follow certain processes, employ particular techniques, and use particular tools. By doing this we hope to identify "best practice", and guide our research in the direction of industry needs. Due to space limitations, we focus here on respondents' profiles, team skills, process models/methods and process tasks.

The following section describes our survey method and the profile of our resulting sample. In Section 3 we discuss the preliminary results of our data analysis, in Section 4 we discuss implications for our work on a multimedia process framework, and in Section 5 we discuss our findings and areas for further work.

2 Survey Instrument and Method

Based on our review of previous studies and processes described in the literature [5-7], we constructed a list of survey goals and questions. We applied a GQM [8] style approach to assess the fitness of our questions to the realisation of our goals. Once we had mapped questions to goals, we assessed a question's capability of providing us with the data we required by looking at the statements we wished to make using the data collected, i.e. technique x is being used to model y . The resulting survey instrument was organised into the following sections: Company Profile, Team Profile, Development Process, Treatment of Content, Design Techniques, Authoring Tools, and Project Management. The pilot survey had a further section that asked for feedback on the survey instrument, to try and identify likely problems before the survey was distributed to a larger sample.

To facilitate responses and assist in keeping consistent terminology amongst respondents, closed questions were used where possible. However, where applicable the opportunity to give an alternate response by use of an "other" option was also provided. In addition, open-ended questions were used to help elicit reasons for particular responses.

2.1 Pilot Survey

During 2004 we conducted a pilot study to assess the suitability of our survey instrument. The study involved three companies obtained using convenience sampling [9]. To determine the applicability of our response options and terminology each company represented one of our target domains: educational systems, business communication systems, and games.

2.2 Survey Sample

Prospective participants for the survey were initially selected from company listings publicly available via the VicIT Web Directory [10], and the Australian Interactive Media Industry Association (AIMIA) member listing [11].