

# Media Content in Research Data Management Plans

Eva Czaran and Malcolm Wolski

Griffith University

With all the information and literature available to us about the value and impact of visual media, it is surprising how many researchers consider visual materials as an afterthought in reporting on their research. Media professionals would argue that there is visual potential in every research; however, the potential in some cases might not be as obvious as in others. This paper discusses the implications for researchers, especially the requirement to collect digital content as part of research data management process. This also has implications for institutional service providers such as libraries, infrastructure providers, and training services.

## Introduction

Increasingly governments are seeking more visible economic and social returns from their investments in research (New Zealand, 2015; United Kingdom, 2015; United States, 2015; Australia, 2016). An important corollary is that researchers and academic research institutions should be able to demonstrate the quality and impact of their research. Demonstrating research impact implies the ability to encapsulate “the research story” in a way that non-academics, as well as academics, can fully appreciate the significance. The inherent difficulty is epitomised by Krueger’s (2015) comment that “Canada’s social scientists and humanists have traditionally struggled to communicate their world-class research beyond academic circles”. They do not know how to tell the story of their research.

The assumption is that the primary vehicle for communication will be a “narrative”, i.e. text / words; it is implied that any visual representation, for example, will function as a complementary tool. Does this paradigm, however, match the evolution of the ways in which we currently can and/or expect to access digital content? Nowadays YouTube is the largest online video destination in the world and the second most visited website overall (Alexa, 2016).

What, then, if the primary medium for conveying technical / research information was visual rather than textual, depending on the target audience? What if researchers took another step and moved away from the “talking head” concept, i.e. someone presenting information in a long/ short, dry and visually boring manner, to something more dynamic and engaging? And possibly even produced an output without sound?

With all the information and literature available about the value and impact of visual media, it is surprising how many researchers consider visual materials as an afterthought. Recognising and acknowledging early on the visual potential of the research that is being undertaken is the first step in ensuring a meaningful, engaging, and authentic visual output.

This paper will discuss this changing landscape and the need to collect and catalogue digital content during the research lifecycle, including the creation of research data management plans. This has implications for institutional service providers such as libraries, infrastructure providers, and training services.

## Literature review

The concern that text alone does not necessarily tell the complete story about a research project / research outputs has been discussed in the literature for a number of years. Morris (2005), for example, has emphasised the need to be able to describe the process by which a potential topic for investigation evolves into a full-blown research project, with defined outcomes: “... when this painstaking work results in technical and social advances, we must rise to the challenge of telling the story of how this came to be. Like following a string back through the labyrinth of grants, programs, and partners, we must make the link between initial taxpayer investments and final successes.”

More recently, Davison (2016, p. 191) highlights “the importance of storytelling in our research and to encourage all authors to write their papers in such a way that they tell compelling stories”. He goes on to make the point that:

Normally, I would expect stories to be qualitative, and so it may be easier to tell stories when the research data itself is qualitative, for instance, in a case study, ethnography, hermeneutic investigation or action research. But a good storyteller ought to be able to write a story about almost any kind of research because the underlying research motivation and the way it is justified and later transformed into a research design are fundamentally a creative process. This should be as true for a case study as for design science, surveys or experiments (pp. 191-192).

It is not surprising that “data storytelling” is now considered to be an essential skill in some disciplines. Perhaps because as Dykes (2016) suggests, “many of the heavily-recruited individuals with advanced degrees in economics, mathematics, or statistics struggle with communicating their insights to others effectively—essentially, telling the story of their numbers”. Storytelling helps the reader gain insights from the data (Stikeleather, 2013). This is not to suggest, however, that telling the research story is only about explaining one’s data, if appropriate. For example, a good story will explain the context for the research problem and the impact of the research outcomes. Excellent current examples of the role of visual media as a component of a leading research communication practice include the Science Communication prizes from the Australian Museum (<http://australianmuseum.net.au/2016-eureka-prizes-winners>) and the equivalent New Zealand Prime Minister’s Science Media Communications Prize (<http://www.pmscienceprizes.org.nz/previous-winners/>).

In the research domain, one can find useful examples of efforts to use visual impact to engage the audience, without relying on either text or sound to convey meaning. Schuttler (2015) has created what she calls a “story arc for scientists”, in which she describes the various steps by which a scientist (researcher) can create hooks that help tell the “story” of their research endeavours –not the “facts”. Other efforts are centred on how to tell a meaningful story with data. Walsberg (2014) makes the important point that good data visualisation “stands on its own; if taken out of context, the reader should still be able to understand what a chart is saying because the visualization tells the story”.

A separate, but related, aspect of research is the importance of the responsible management of research projects. Typically, large and reasonably complex grant proposals require the submission of a management plan. More recently the focus has shifted specifically to *research data management* (Ray, 2014; Kennan and Markauskaite, 2015). Similar to the United Kingdom and the United States, the Australian Research Council (2014), for example, considers data management planning an important part of the responsible conduct of research.

At the risk of generalising, the primary focus of both research management plans and research data management plans tends to be on “compliance”, that is, the degree to which the researcher has met the various mandates from funders as well as national and institutional policies. “Communication” is generally addressed when the research is to be linked specifically to a publishing output, e.g. a journal article. The burgeoning concerns in the literature about over-reliance on traditional publication-level metrics are beyond the scope of this paper. However, the authors would postulate that just as the validity of complementary approaches such as altmetrics are being explored, there is a case to be made to expand the communication of research beyond traditional text formats to encompass visual and auditory media.

Having established the importance of non-text-based formats in communicating research, the authors will discuss some of the major implications from having been involved in implementing a university-wide service designed to assist researchers in learning to “tell the story” of their research.

## A review of a media production service at Griffith University

Key research project outputs no longer need to be confined to written reports. They can include videos, motion graphics, infographics, data visualisation, digi-posters, and other types of visual media. With all the information and literature available to us about the value and impact of visual media, it is surprising how many researchers consider visual materials as an afterthought. Recognising and acknowledging, early on,

the visual potential of the research that is being undertaken is the first step in ensuring a meaningful, engaging, and authentic visual output.

Griffith University is a comprehensive, research-intensive university, ranking 37th in the 2015/16 QS University Rankings Top 50 Under 50 (Quacquarelli Symonds, 2016). Located in the rapidly growing corridor between Brisbane and the Gold Coast in Southeast Queensland, the University offers more than 200 degrees across five campuses to more than 43,000 students from 130 countries studying at undergraduate through to doctoral level in one of four broad academic groups: arts, education and law; business; science; and health. Griffith's strategic research investment strategy has positioned it to be a world leader in the fields of Asian politics, trade and development, climate change adaptation, criminology, drug discovery and infectious disease, health, sustainable tourism, water science, music and the creative arts.

The Division of Information Services (INS), with which the authors are affiliated, has a long and proud tradition of providing quality service to Griffith students and staff. It also has an international reputation for being innovative and cutting-edge in the deployment of emerging technologies (Stanford University Libraries, 2013; Brown et al., 2015; Searle et al., 2015; Hickson et al., 2016). In 2015 a new service, Media Production, was offered to researchers through the eResearch Services unit to co-develop media products with researchers so as to help them tell the story of their research projects. The primary objective was not intended to produce marketing material but rather for specific purposes, such as explaining a research activity/concept for a conference/project website or more broadly raising awareness of the research with the general public.

The Media Production team consists of two full-time staff: a team leader/educational media producer, who also fills the roles of director, video editor, and contributor to script writing and editing; and a motion graphics designer, with skills in colour grading and animation. They are supported by a small number of casual employees with specialised skills in camera operation/lighting and audio post-production. Because of limited capacity, a rolling twelve-month work plan has been established, with input from the Office of Research and the respective Deans (Research), to identify key researchers to approach to offer this service.

The work undertaken has followed four phases: scoping, content development, production, and review. The activities undertaken in each of these four phases are discussed in the following sections.

### *Scoping*

Scoping potential projects starts with a face-to-face initial meeting between the media producer and the researcher. This is more of a brainstorming session to help the researcher find the most beneficial story for their media product and to raise awareness of the investment of time and contribution required by the project from both the researcher and the production team. By the end of this meeting the researcher is armed with a bucketful of ideas and information, which they then can take time to consider and discuss with fellow colleagues. This period of reflection and exploration gives the researcher the opportunity to consider the information from the meeting and to clarify their need. Using this period well can save a lot of time and resources once the project is in production. The second meeting, which is still best held face-to-face, is about clarifying the need and the target audience, finalising the story idea, making a decision about the production type, and identifying the "to-do" items. Following this meeting, most projects are moved into the content development stage. However, for the small number of projects in which the decision is not to proceed, this meeting is used to discuss future opportunities and to arm the researcher with information to support their future media production plans. Pending the outcomes from the second meeting, much of the interaction from here on, in many cases, can take place online or via tele or videoconferencing.

### *Content development*

Content development is about content writing and preliminary visual content gathering. Depending on the production type, the content writing activity may deliver an outline for an interview-driven product, a narrative style script for an animation, or a list of visuals for a product without any audio. The critical point about this activity is that the researcher, or other content experts, must write the spoken content. The role of the media producer is to assist the researcher to shape that content into the appropriate format and to highlight the content's visual potential. This approach best ensures that the media product remains authentic to the researcher's work and voice. Preliminary visual content can consist of relevant existing photographs,

video footage or graphs, etc., captured and/or collected by the researcher and/or a list of visual content the researcher is planning to capture to include in the media product. Typically these are visual materials, which are easiest and most economical to be captured by the researcher, for example, photographs or video footage from an overseas event, a sensitive interview, or a behavioural study activity.

### *Production*

Having gone through a series of meetings and having been involved in the content development, the media producer is in a good position to drive and deliver the logistical, technical, and creative aspects of the project, with support from the production team. During this stage, the researcher may take the role of on-camera talent and provide sign-off at critical production milestones, e.g. first cut, final cut and screener approval. Each media product or a series including several media products is treated as a project, and it is common to run several projects in parallel, progressing them through the relevant activities. The production stage ends with a handover of the media product, which is the best quality video file, as well as its supplementary components, such as additional encoded video files, audio file, transcript, etc. These items make up the handover media package. A media package can be a standard package, featuring common and up-to-date media formats, or it can be tailored to suit the researcher's release needs.

### *Review*

Eight months post-handover the media producer re-visits the researchers to obtain feedback on a number of factors such as: a) how have they used the product, b) their views on the impact of the product and example measures, and c) what would they change or do differently if they had the opportunity to make the media product again.

A review of the past twelve months of developing media products with researchers has highlighted a number of issues, which are discussed below.

## **Findings from a twelve month review**

At a recent planning session, which reviewed activities for the previous twelve months, the authors identified several issues impacting the service offered.

### *Researchers not in the habit of collecting visual content*

Researchers need to get into the habit of considering possible visual outputs in the early stages of their research to enable them to start collecting relevant and potent visual materials as their research progresses. Collecting material on an on-going basis, i.e. capturing them, saving, and storing them in the highest possible resolution, creates a wealth of irreplaceable visual content to use in future media products. A photograph captures a moment in time. If that moment reveals something relevant about the research, then there is no better time to capture it than then and there. Once that time has passed, in most cases, so has the opportunity to capture it.

### *Lack of basic technical skills among researchers*

There are numerous affordable and easy-to-use devices that can capture and output raw content which is suitable to use in most research-focused media outputs. Digital cameras, camcorders, smartphones, tablets, dash cams, and drones are all possible options to record audio-visual content. The quality of the capture depends not only on the device but also on the experience of the operator. Knowing a few simple techniques can greatly improve the result of even the most inexperienced operator. For example, avoid recording in front of windows with strong daylight because it makes the object that is being recorded appear dark.

### *Legal clearance rarely obtained*

A photograph, a video interview or even an original graphic is not useful or usable without permission from the on-camera talent or the creator of the work. So obtaining releases and collecting metadata that summarises basic information about the material goes hand-in-hand with the capturing process. This type of information can be difficult to obtain at a later stage.

### *Storytelling is a foreign concept in research*

Researchers have spent years writing and talking about complex matters with multi-layers and at length, using academic language and tone; so it is unsurprising that they find telling the story of their research challenging. From the authors' experience, one of researchers' biggest hurdles is to move from explaining aspects of their research to demonstrating change or a solution as a result of the research, and to find accessible, succinct and creative ways to demonstrate rather than talk about these outcomes. Some of these challenges could possibly be the result of researchers having had some experience in producing media for learning and teaching purposes. Such products are mostly about presenting content and demonstrating skills and techniques to students in the context of a lesson. The primary objective for such products is to contribute to learning outcomes. In the case of research outcomes, the primary objective of media products is to demonstrate the impact of the research and to provoke a positive reaction, and in some cases a call to action from the targeted audience.

#### *Lack of plan to collect digital content*

Digital data--whether video or audio files, photographs, scans, graphics, or the like--need a robust environment for storage. Keeping all the visual materials together with the releases and the metadata, in a well-structured folder hierarchy, is critical for keeping the data safe and to ensure quick and easy retrieval, and, in the case of long-term projects, to enable a format refresh if a file format is no longer supported. To protect the data, regular backups onto not only one but possibly also onto two devices or cloud storage is a must. It is also important to keep the data on media that will be readable in the future. For example, writable CDs and DVDs are no longer an acceptable long-term storage solution as more sustainable solutions are becoming available.

#### *Lack of media product release plan*

No matter how engaging, how informative and well made a media product is, it is unable to deliver impact without an audience. Uploading a video to a project website does not guarantee an audience. Nowadays there are many opportunities for showing and sharing media content, such as public screenings, organisational websites, video sharing websites (e.g. YouTube), and social media platforms (e.g. Facebook). A carefully developed release plan is a must to maximise the reach and impact of the product.

#### *The important role of media professionals*

Obtaining advice from media professionals about possible visual outputs and production approaches in the early stages of the research can set the researcher up for a good start. This is the best time to discuss what they should capture, what devices to use, how to store the data, and when to expect to spring into production. And then later on during the content development stage, a media professional can once again play a significant role by offering ideas to researchers about possible digital visual interpretations and approaches. In the authors' experience, an emerging role is to use this engagement opportunity to challenge researchers to make images their primary source of content and words their secondary source. Researchers need to be encouraged to say less and show more, and to keep the content concise by removing layers of complexity to meet the increasing need for to-the-point and easily digestible information. Finally, when it comes to production, there are a lot of digital media tools and apps available. Many of them are online, free, and designed for users with little or no technical background, for example, iMovie, Toontastic, and Capzle. These tools help record, edit and animate content. However, researchers who are time poor or have more complex ideas should outsource the production to media professionals.

#### *The need for a media archive*

Central to all of the above is a media archive. Its function is not only to store but also to make available and preserve important data for future generations to use. It is critical that organisations offer a robust environment to enable the media collection to grow and to remain usable despite rapid and continual technical changes. Some of the raw materials collected in relation to a research activity have a (re-)use factor far beyond the original research, whether for future research or for contributing to the story of telling the impact of the research many years after the event. Raw materials should be regarded as potential institutional assets and are to be retained alongside other archived materials.

#### *The need for a new approach to developing media products for research stories*

From the previous 12 months' activities, the media production team has identified seven steps that can significantly increase the ability for a media product to deliver a desired impact. Experience has shown that working through the steps requires considerable time and effort on behalf of the researcher because of their inexperience in this area and because of the lack of time available to invest in this activity. This may be

compounded further if there is a group of researchers involved, especially if consensus on approach is required. The seven steps are: 1. Identify the need; 2. Identify the intended audience; 3. Identify the visual potential; 4. Identify the change resulting from the research; 5. Craft the story; 6. Plan the release; and finally 7. Do a review. This model has been discussed by the authors in a recent publication (Czaran et al., 2017).

## Implications for institutions

The above discussion raises several issues for institutions to consider. An institution-wide, planned approach is needed to scale up services and build self-sufficiency among researchers, with clarity about which units will provide what services or elements of a service. Developing feedback mechanisms to measure impact of products at the group or institutional level is also a worthy objective, so as to continuously improve the service and capability of all concerned and ultimately the impact and benefit of the media products. This implies the institution has a policy or guidelines about where products are published, e.g. an approved university YouTube channel, and additionally that there is an agreed and documented method of collecting feedback information.

There are requirements for institutions to provide systems and repositories for created content, especially an archive for media project outputs, to either enable researchers to preserve media content with their research data for future reference or provide the information infrastructure that allows researchers and administrators to link media products and raw footage with research outputs. The library can play a role in not only providing a media archive for materials produced at the end of the project, but also addressing the issue of collecting digital content in the initial discussions with researchers concerning research data management planning. There is an opportunity for outreach librarians to provide advice about obtaining and retaining legal clearance to use images and video for later re-use.

In the authors' view, libraries have an important role to play in developing an institutional solution. At the institutional level, the mindset for researchers and administrative units needs to be changed so that they inherently know to collect visual products during the whole research cycle. To achieve this objective, the skills and competency of both researchers and support staff need to be uplifted from basic skills, e.g. how to take a good photo, through to more complex digital storytelling skills. This could be incorporated into any digital literacy training program.

Technical skills may be easier to find, either within or external to the institution, than those key roles that require people with the relevant visualisation and storytelling skills to work with researchers, i.e. the producer/director roles. Developing media products for researchers requires that the producer/director fully understands the research activity, the researcher's and stakeholder's goals, and the benefits of the activity, not only to the researcher but to the institution as well. For example, some of the raw footage from research activities can be an institutional resource for other activities and purposes over time, especially when explaining the impact of research years later. To tell the research story effectively, the researchers need to trust the recommendations of the media production team to create the right product.

This trust is critical in order for the researcher to be able to take advice and accept the creative skills of media professionals as to how the story should be told. Telling the story of research is a partnership between the researchers and the media production team developing the product. While some tasks, such as filming, can be outsourced, some skills, such as producing and directing, need to be retained in-house. It is common for schools, faculties and other business units to focus on hiring technical staff to produce video products, whereas the findings indicate that producing and directing are the more important skills required, along with some creativity, to tell a good research story.

Another challenge is to develop a service which provides general advice and guidance to assist researchers in developing products that are fit for purpose. Different types of products are needed for different projects, with consideration given to factors such as the cost/benefit, the purpose of the video, and the level of quality needed. These services could range from self-help to providing more specialist advisory services to developing more complex products. For example, the technology and skills required to tell the story about physical research outputs can be quite different from telling the story about knowledge products, such as those in the social sciences. Even without providing producing/directing skills, it begs the question of whether the library may have an opportunity to fill some of these needs and to provide value-added skills

to their faculty teams by leveraging both their close relationship with their researchers and the deep understanding of their research goals.

## Conclusion

Given the limitations of traditional text-based outputs in conveying the value and impact of research, there is an increasing shift to more current-generation methods of communication. This paper has examined the implementation of a media production service designed to assist university researchers in learning to use visual media to tell the story of their projects.

The authors' experience has shown that approaching the production of stories in a research environment requires a focused effort because of a lack of awareness on the part of both the research community and the institutions at large. Several issues have been raised in this paper that have little to do with either technical production capacity or capability. As this paper shows, most of the steps are not related to the technical aspects of developing a media product, but rather the pre-production steps required to move a project into production. The key roles underpinning this approach are those of the producer/director and the researcher. A successful approach relies heavily on the trust and relationship between the researcher and the person doing the producing and directing, and the quality of the resulting media product relies on the successful partnership between the researcher and producer/director to tell the story well.

Finally, an institutional response is required to raise the awareness among researchers and relevant support services of the importance of building into their research (data) management plans a well-developed communication plan to leverage non-text-based media. In addition, the institution needs to develop a capability to collect, retain, and preserve the digital record of research activity within that institution.

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