Royal Docks Business School

# MKM227 Postgraduate Dissertation

**Student Number: 0305857**

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| **Introduction**<br><br>*Identification of a valid topic, research question and objectives framed to Masters Level standard with academic rationale developed, clear industry contextualisation of the research topic* | **Supervisor Comments:** | **10%** | |
| | **2nd marker Comments:** | | |
| **Critical Literature Review**<br><br>*Depth and breadth of literature search, engagement with seminal authors and papers, evidence of a critical approach toward the scholarly literature* | **Supervisor Comments:** | **25%** | |
| | **2nd marker Comments:** | | |

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<tr><td rowspan="2">Research Methodology<br><br>Evaluation of research philosophies and perspectives. Justification of methodological approach, sampling strategy, data analysis and reliability and validity measures as applicable</td><td>Supervisor Comments:</td><td rowspan="2">15%</td><td></td></tr>
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<tr><td rowspan="2">Conclusions and Recommendations<br><br>Research question and objectives addressed with implications to theoretical and managerial concepts considered. Recommendations provided for theory, practice and future research</td><td>Supervisor Comments:</td><td rowspan="2">10%</td><td></td></tr>
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**Supervisor's Name: ……..** **Signature: ……**

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# Investigation of the uses of Social Media in a Project Environment and the Quantification of the benefits of applying Social Media Paradigms to a Project Environment

A dissertation submitted in partial fulfilment of the requirements of the Royal Docks Business School, University of East London for the degree of **MSc Project Management**

**September 2013**

**Word Count: 14003**

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## Abstract

This research project has been designed to compile a snapshot of how social media tools are currently used within project environments and to investigate how social media tools impact the key indicators of project success (Time, Cost and Quality). As social media cements its rise in main stream society, businesses have started to take account of the power these tools can bring. This project aims to fill a current gap in the literature by harvesting and analysing data on the benefits and issues that project teams have encountered while using social media tools in their day to day business.

The data in this project has been collected via an online survey and consist of both quantitative datasets on eth demographics of users, and qualitative datasets on the human experience of using the tools. By the end of this dissertation you will discover that the data does highlight expected positive impacts to Time, Cost and Quality linked to 4 social media tool groups drawn from the current literature. The data also paints a picture of how each tool is being engaged across Lock's (2007) four project types, "Type 1 Projects: civil engineering, construction, petrochemical, mining and quarrying; Type 2 Projects: manufacturing; Type 3 Projects: IT projects and projects associated with management change and Type 4 Projects: projects for pure scientific research". The final insight produced by this research details the considerations and systems that need to be in place before any organisation engages with social media within their day to day business.

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## Table List

# Introduction

Social media has become a buzz phrase across industries, with organisations now developing and deploying Social Software packages in a bid to streamline and improve business processes and the flow of communications throughout the organisation (Miller, Marks and DeCoulode, 2011 and Maciejewski, 2011). While Organisations have started to dip a toe into the business applications of social media, the concept has been met with resistance from many, due to a general miss understanding of social media, or the view that the tools will act as a distraction or undermine the traditional communication and authority structures (Miller, Marks and DeCoulode, 2011, Kietzmann, Hermkens, McCarthy and Silvestre, 2011 and Kaplan and Haenlein, 2010).

## A Definition of Social Media

Before moving forward I will take this chance to detail some of the theories that have lead to the development and rise of social media before highlighting the most apt definitions of social media in the literature that will be utilised for the purpose of this research project.

When considering the growth of social media and the new trend of applying these tools and techniques to business operations, it is useful to take a look at two theories which are a key aspect to the development (and rise) of social media and its adaption for business purposes. These are Short's et al. Social Presence theory (1976), and Daft and Lengel's Media Richness theory (1984).

Social Presence theory states, "Communication is effective if the communication medium has the appropriate social presence required for the level of interpersonal involvement required for a task" (Short et al. 1976). Considering this with Media Richness theory that notes, "The more learning that can be pumped through a medium, the richer the medium" in that a media medium is richer if it can allow rapid feedback, utilise natural language, handle multiple information cues and establish a personal focus, all with the goal of reducing a messages uncertainty and equivocality (daft and Lengel, 1989). Given the ever growing complexities involved in achieving critical project success while quite often working with geographically dispersed teams, it seems a logical step for technological platforms to

be developed to harbour a higher level of social presence in long distance communications, while simultaneously utilising the functions needed to define the medium as rich.

With this in mind and the growing improvements and availability of mass communication technologies, a new breed of internet platform has been developed that can be viewed as empowering the individual while starting to render geographic location obsolete, the term that has been collectively coined for these platforms is social media.

Kaplan and Haenlein (2010) define social media as,

> "a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0[1], and that allow the creation and exchange of User Generated Content."

A more detailed definition is offered by Kietzmann et al. (2011) which is, "mobile and web-based technologies used to create highly interactive platforms via which individuals and communities share, co-create, discuss, and modify user-generated content."

For the purpose of this project both definitions noted above will be utilised to highlight social media tools and paradigms that are deployed in project (and business) settings in a bid to benefit the business.

## Social Media and Project Management

While social media usage is becoming wide spread across sectors such as marketing and advertising as a daily used tool, for the project manager these new technologies offer a opportunity to alter working practice to ease the pressure of the role caused by the difficulties of geographically dispersed teams and ever growing stakeholder commitments (Trilog Group, 2012).

As a tool for communication within the project team and across the organisation social media platforms can look to engage organisation wide resources to solve encountered problems, as well as allowing a level of collaborative working and knowledge exchange that

[1] "Defined as the "second generation" of web development. Initial, passive-display Internet (the "first generation" function) has now evolved interactive, read/write functionality that encourages web users to share ideas and creative products." (Wallings, 2009)

was previously only obtainable through great effort and long meetings (Trilog Group, 2012, Maciejewski, 2011 and Remidez and Jones, 2012).

## Objectives

Despite the growing adoption of social software business applications, and because the practice is still relatively new and emerging, authors such as Remidez & Jones (2012) note that, "No research is available to guide practitioners in understanding what combination of social media support and practices contribute to successful projects". Further to this there is still a lack of studies that actually take a full inventory of how social media paradigms are applied to a project environment.

As the literature review later in this project will highlight many research projects linked to the subject of social media in Project Management focus on one specific tool or aspect of social media, be it a mirco-blogging service (Maciejewski, 2011), or marketing based usage of popular social media platforms such as Facebook. The other heavily researched and written about area of this subject relates to how best to adapt an organisations infrastructure, processes and procedures to make use of social media paradigms.

This project shall look to provide a foundation for researching and promoting this new practice of 'Social Project Management' (Trilog Group, 2012) by seeking to answer two questions, firstly how is social media deployed in a project environment?, and secondly what impact do social media tools have on the key indicators of project success (Time, Cost and Quality)?

To answer these two questions my research objectives are as follows:

1. To determine a list of current social media uses in a project environment from a review of current literature.

2. To critically analyse the functionality of the current social media tools being engaged to draft a set of possible impacts that social media tools have on the key indicators of project success.

3. To compile a snap shot of how social media is used within project environments.

4. To canvass past and present project team members that have used social media to identify the key benefits encountered when using social media tools within a project.

This research project is designed to first collate in one place a list of exactly how project teams and organisations are engaging with social media in their day to day business. With the list of how social media tools are used this project will seek to canvass project team members to critically evaluate if the highlighted uses have a positive or negative impact on the three key indicators of Project success: Time, Cost and Quality.

My hope is that this research will not only build a reliable snap shot of how social media is currently used within projects, but that this project will also highlight where implementing a social media tool can positively impact a project and aid with achieving critical project success, and where social media can cause harm to a project's objectives. This will lay the groundwork for a framework to be developed to inform developing business practice as it adapts and adopts this new technology to meet business needs.

## Dissertation Structure

I shall now give a brief outline of how this dissertation will be structured with a brief overview of each subsequent chapter.

Following this introduction I shall conduct a critical literature review. In this chapter I shall take a wide sample and account of the current academic literature concerned with social media applications to project management, and to a lesser degree (to ensure I capture as much information as possible) social media applications to business. Using this information I shall highlight the current trends and arguments in relation to the proposed benefits and disadvantages of using social media paradigms to support project management. The chapter will also aim to detail the current pitfalls encountered by practitioners when deploying social media in the field and proposed solutions. Finally all of this information will be used to justify and refine my research questions ensuring they a both sound theoretically and practically.

Following the critical literature review I shall detail this project's research methodology. This chapter shall re-clarify the focus of this dissertation before detailing the research paradigms

and philosophy that will be engaged during the data collection and analysis processes. The chapter will detail and justify the research design for this project detailing how reliability and accuracy of the results have been ensured, and noting the sampling strategy. Finally this chapter will highlight any limitations and issues that could be encountered during the research process.

The next chapter shall detail the analysis of data collected via the research process. This chapter shall take an in depth look at the results of each of my research objectives to identify key themes and findings in relation to my 2 research questions, How is social media deployed in a project environment?, and what are the quantifiable benefits of applying social media paradigms to a project environment? Once key findings have been identified via research results this chapter shall analyse these findings in relation to other studies within the field.

The final chapter of this project shall detail my conclusions and recommendations. This chapter shall detail the findings of this project in relation to the research questions in a bid to evaluate if the results have answered the questions set out. This chapter shall then also highlight the theoretical and practical implications of the research findings before finally developing a set of recommendations linked to social media use in supporting project management that are informed by the research outcomes.

# Critical Literature review

## Introduction

This chapter shall provide a critical review of the theories and literature linked to the development, rise and engagement of Social Media in project and business environments. This chapter in particular shall look to first explore theories and factors that have led to the development of social media platforms and tools such as Social Presence theory and Media Richness theory which were touched on briefly in the introduction, before looking to review theories that seek to explain the rise of social media and ever growing usage of social media by the general population. Next this review will move onto the operationally focused texts on social media that look to instruct businesses on what tools can be used within a project/business setting and the common pitfalls and issues that can arise. Finally the review will detail how social media has impacted group dynamics and development, and highlight the biggest consideration organisations should take before engaging with social media tools.

Within the literature several key areas have been identified that shall be grouped into key themes to structure this literature review. The first shall be, 'The development of Social Media'. This section shall look to explore the key theories that have led to the development of communication tools and platforms which negate the obstacle of geographic location and seek to ease the flow of communication with minimal effort. The next section will be titled, 'The Rise of Social Media' and this section will explore and review theories and articles that seek to explain the growing usage of social media and the reasons why social media tools and techniques are or are not useful for projects and businesses.

The next section will be titled, 'Social Media in Operation' and will review the host of growing literature focused on analysing how social media tools could be, should be or are currently engaged in project and business environments. This chapter will critically evaluate what the key authors are saying about what social media can do for a business in a bid to realistically cut through the hype and get to the core of what these tools can offer. This section will also look to gather and present what are commonly highlighted as the possible disadvantages and pitfalls to deploying social media in a business.

The final section of this chapter will be titled, 'Group Dynamics & Organisational suitability'. This section will look to review how social media has impacted work group dynamics and the group development process, before highlighting what organisations should consider before deciding how they will engage social media tools. Finally in this section I will finish off with a few predictions about the data I aim to gather during this research project and what I hypothesis as the benefits and disadvantages social media tools have on the key indicators of project success.

## The Development of Social Media

As discussed in the introduction the two key theories that have led to the development and adoption of social media platforms in business environments are Short's et al. Social Presence theory (1976), and Daft and Lengel's Media Richness theory (1984). As we move towards a more globally focused society where often project team members are located in geographically dispersed locations, and quite often in different time zones, organisations have looked to technology to develop the tools needed to operate on this global level. This technology takes the form of communication tools that provide the ability to harbour a high level of social presence while simultaneously providing the means for users to reduce the levels of 'uncertainty and equivocality' inherent within a message(Daft and Lengel, 1989).

The literature (Kaplan & Haenlein, 2010) points to Web 2.0 technologies as the first solid step towards developing a means of long distance communication for businesses that ticked the boxes set out by Short et al. (1976) and Daft and Lengel (1989). These tools allowed for collaboration and sharing within a project team but as highlighted by the Trilog Group (2012):

> "web 2.0 technologies came at a price. First, the technologies were islands. Users had to maintain accounts with a variety of providers, project team members might have to use multiple technologies for the same interactions across different projects. Second, many companies could not make use of the "free" web 2.0 applications due to regulatory, privacy or other security & administrative reasons. Companies in this situation would need to provide internally hosted web 2.0 technologies, reducing the cost benefit of utilization."

So as the steps were taken to develop in house tools, organisations looked to integrate these tools into one social business platform allowing ease of use for the platform's users (there-by combating motivational issues), but organisations also aimed to integrate these tools with the social fabric of the whole organisation. This integration with the whole organisation is the step that has been taken to development web 2.0 business tools into social media business tools. The integration into the wider organisation's social networks provides a level of transparency that previously could only have been achieved through a high level of meetings to explain the progress and developments of a project at an unsustainable frequency, while also extending project teams to include every member of the organisation. This in turn allows the right person with the right skill set to step forward as issues and developments arise over the life cycle of a project, leading in the end to a more efficient project process for the whole organisation (Trilog Group, 2012).

## The Rise of Social Media

When seeking to identify the key factors that have contributed to the rise of social media in modern day society it would be a good idea to step away from the world of organisational communications and look at the rise of the internet and the impact it has had on consumer - supplier relations. Powell (2013, pp. 1) notes, "the rise of the internet changed not only the accessibility to consume by containing the time and space between promotion and consumption, but it also potentially empowered the consumer by making markets more transparent and businesses more answerable". Research results from Nardo at al. (2011, pp. 13) back up this statement by detailing how, "Internet use seems to be related to empowerment: consumers with some experience in using internet have higher scores in skills, awareness and engagement". The consumer's access to a global market via the internet has given many consumers the opportunity and ability to seek information on the quality of the goods they purchase against the comparison of cost, and in some cases even the ethical background and history of the supplier before committing to a purchase.

It is this increased consumer demand for information and the ability to 'vet' their purchases before committing to buy that has led to the rapid adoption of social media to everyday life. Social media allows for a level of communication between social peers that has empowered

the populace: no longer can a corporation control what the public learns and hears about it via strategically placed and well timed marketing campaigns as now via social media tools any user can record and publish their experiences or what questionable and unethical practices they may uncover a corporation using. Kaplan and Haenlein (2010) note that, "Such an evolution may not be surprising. After all, the Internet started out as nothing more than a giant Bulletin Board System (BBS) that allowed users to exchange software, data, messages, and news with each other" so the rise of social media can be viewed as a step back towards the original intended use the World Wide Web.

As usage of social media has grown so to have technological developments been pursued to capitalise on the fascination and addiction of the populace to social media platforms. Deuze (2007, pp.13) highlights the new developments in mobile computing technology, and now as of 2013 in most economically developed countries you will find an overwhelming number of the population carrying and using smart phones. Pocket sized Mobile devices that quite often come preloaded with social media platforms such as Twitter and Facebook and provide an internet connection on the move that is faster than the old 56kps dial up connections of the 1990s. This ease of access has also greatly added to the rise of social media, people use Facebook or Twitter to publish their thoughts and views on such a regular basis simply because they conveniently can (Turow, 2011, pp 1).

As social media has become almost a defacto pastime for much of the population, for businesses it has been a different story. The adoption of social media to business settings started for marketing purposes and not out of a desire to engage with this new technology, but out of a need to still maintain some aspect of reputational control. Nicholls (2011, pp.2) states:

> "An organisation's customers, competitors and suppliers are to varying degrees angling to gain an advantage through social media. From finding a partner on a dating site, to getting advice on a hotel from TripAdvisor, to solving complex problems (as NASA has done using competitions), social media has become an increasingly dominant force. Engaging with social media as a business is no longer a choice anymore; it is a strategic resource and new dimension to corporate strategy".

Social media tools have become such a dominant force in the modern day world that we have seen the use of them lead to oppressive regimes being toppled through the ability the tools offer to mass organise and publicise from a grass roots level (Tufekci, 2011). The power these tools offer is why businesses are now seeking to harvest the benefits they have seen them bring to the general population, by deploying them for their business needs.

## Social Media in Operation

This section of the chapter shall review the texts focused on how social media can be operationally deployed in a project and business setting. Throughout this section I shall highlight the current focus of the majority of social media for business texts on how social media can be used within a project/business, instead of a focus on how social media can improve project/business management processes. This topic is still relatively new, with social media first making its rise in roughly 2003-2004 (Kaplen & Haenlein, 2010) and starting to be adapted for business purposes in the last few years, it is understandable why a study such as mine that looks to catalogue how social media is actually used, and quantify the benefits and disadvantages has not yet taken place.

As noted previously a quick search on the internet will display a high amount of social media for business texts are focused on how social media can be used for advertising, marketing and PR purposes. Social media has changed the game for these organisational functions. As Powell (2013, pp.64) notes, “social media allows conversations to take place over which the company has no control; indeed, the company can be left out in the cold.” This empowering of the people has altered the practices of advertising, marketing and PR making them more fast paced and responsive to the consumers’ views so that organisations can remain in control of their own reputations.

It is this sense of empowerment, and the ability social media offers to harbour a high level of dialogue between users that makes it so powerful a tool for project management. One study carried out by Maciejewski (2011) displays the power a popular social media tool can bring to an organisation in terms of streamlining communications, and helping to harbour and develop a strong social cohesion between colleagues . In the case of Maciejewski’s study he looked at how Microblogging (A social media technique made popular by Twitter

that allows users to publish short 140 word status updates, promoting users to engage in creative ways to provide concise updates and responses) could be used within a geographically dispersed organisation.

Maciejewski's (2011) study notes, "The Microblogging service is considered as an additional communication channel within the organization, that enables horizontal communication across a geographically dispersed organization." His survey results paint a different picture however. A review of Maciejewski's data analysis clearly displays that while all employees registered for the microblogging service as instructed, only a very few actively engaged in using the service and of these few the majority of users were of management or executive level. This displays a misunderstanding within the organisation, one that could be viewed as a common pit fall when deploying a social media tool in a business setting. Clearly Maciejewski's data displays that the way microblogging had been adopted at his organisation of study adhered to a traditional top down method of communication. In this case the organisation has failed to capitalise on social media's greatest strength, they have not engaged it to empower their employees, giving them a voice that can feed into the top level and governance of the organisation, there by investing each employee further in the organisation in a bid to harbour a higher level of commitment to success.

Literature (Qualman, 2013) displays this as a common misunderstanding: organisational heads in their fear of losing control will only use these tools to further alienate and harm management - employee relations, and social media tools will become viewed as just another task to be completed. Instead of deploying social media as another means of control it should be developed as an effective open internal communication tool, as, "effective internal communication can inspire shared vision, loyalty, satisfaction, commitment, empowerment and service focus" (Nicholls, 2011).

In relation to how useful social media in operation can be for project management it is important to remember, "Project management requires communication practices that go beyond transaction confirmation to include managing relationships, building trust, and managing stakeholder expectations" (Remidez & Jones, 2012). As a means for quickly developing and building trusting relationships social media is a powerful tool to engage in to enable this due to the high level of contact and information exchange the platforms harbour

and allow. Social media starts to build a sense of embodied social presence (Mennecke et al., 2011) in users where a user engages so much with their and others' digital personas or avatars, that they start to feel contacted and part of a larger social group. In the context of project management this can lead to a project team that works and socialises together, that discusses the day to day problems and engages the whole team in their approaches to addressing them a point of best practice found in Project Management frameworks such as AGILE that social media can greatly enable and build upon.

Apart from the positives for project management noted above, social media tools highlighted by the operationally focused literature (Kaplen & Haenlein, 2010, Trilog Group, 2012, Nicholls, 2011 and Harrin, 2010) that can greatly aid a project are as follows:

- **Collaborative Projects**- Kaplen and Haenlein state, "enable the joint and simultaneous creation of content by many end-users" (2010). A good example of a collaborative project is Wikipedia an online encyclopaedia project maintained and updated by users from over 230 different countries. In a project context this tool provides a virtual space to hold and maintain all project documents that can be easily accessed updated and edited by a project team and the wider organisation for review.
- **Blogs**- Blogs can be viewed as a digital journal in a project context they are valuable as a log of activities that have been carried out. Harrin (2010) notes that a blog kept by the project manager can be used as an ongoing reporting tool in place of weekly reports to a project board. If a microblogging service is used by team members the project manager could go further and take each team member's update and edit them together to create a narrative of events that have gone on that day, week or month within the project.
- **Content Communities**- Content communities are sites that allow the sharing of media content by users. Content is not just limited to audio, or video, but can be text based documents, PowerPoint presentations and so on. These sites can be useful for projects in two ways: firstly they can be deployed to allow project related media to be shared among team members and secondly they can be deployed as a means of stakeholder engagement, for example a well-placed Youtube video explaining the

purpose and drive for a project can greatly invest stakeholders in the success of the project.

- **Social Networking Sites**- Social networking sites such as Facebook can allow a project team to engage with the end users or stakeholders for their project to build an open a transparent dialogue. This can work to invest stakeholders in the success of the project much like content communities, but it can also act as a low cost effective means to soundboard public opinion and ensure your project maintains relevant to the intended user group.

## Group Dynamics and Organisational Suitability

Bratton et al (2010) defines a work group (or team) as, "two or more people who are in interaction, each aware of their membership in the group, and striving to accomplish assigned work tasks". This definition fits well in the context of a project team and shall be used as the definition for a project team in this final section of the literature review. In this section I shall look to analyse social media's impact on work group dynamics, and highlight the greatest consideration organisations should make before deciding how to engage with social media within its day to day business.

When considering the impact social media can have on group dynamics it is useful to refer to Simmel's (1908) work on group structure and size in relation to group interactions and communications. Simmel's work highlights how interactions between group members become more complex and less meaningful the larger a group grows, for example a group of 7 members are expected to build and maintain 21 different relationships, a time consuming task if each of these relationships is to harbour a good level of trust to allow for seamless interaction and working practice within a project. Social media can however negate this time demand in building and maintaining relationships due to the high level of social interaction is offers for minimal effort.

Another important factor in group dynamics that social media can have a great affect on is the group development process. Projects by their nature are time limited, and often in the modern project environment teams are constructed from members pulled from across the

organisation. Tuckman and Jenson (1977) note that for a team to develop to work effectively it must work through 5 developmental phases;

1. Forming- Learning about each other.
2. Storming- Dealing with tension and defining group tasks.
3. Norming- Building relationships and working together.
4. Performing- Establishing relationships, roles and task performance.
5. Adjourning- Disbanding and bringing to closure.

Social media's ability to harbour a high level of social interaction at minimal effort can greatly speed up Tuckman and Jenson's group development process. In the case of forming, norming and performing social media is proven (and indeed designed to) allow users to learn about each other quickly and continuously, leading to the development of deep relationships that could only normally be achieved via continuous dialogues and conversations about each users past experiences. The digital persona users build via social media services such as Facebook are focused on making all this information digitally available for users to review and comment on. Defining roles and responsibilities is an important aspect of project management (OCG, 2009, pp. 12). Social media tools such as wikis, however, again take this process online providing a shared virtual space where documents and information outlining clear roles and responsibilities of team members can be kept.

In terms of organisational culture when deciding on what social media can do for an organisation it is important to note that social media platforms are only tools and at the baseline will only have a positive benefit for an organisation if they are used by organisational members. Further to this if used but in a inappropriate manner social media could instead exacerbate any issues found at an organisation related to communication by highlighting and making public said issues, in turn having a negative impact on moral. I hypothesise as I gather my data I shall find that project teams and organisations that engage in a work environment that harbours a culture of open communication will find deploying a vast range of social media tools displays a high level of benefits to the project success indicators (Time, Cost and Quality), whereas those teams and organisations that have

engaged with social media as a means to address communication and morale issues shall display a negative impact to the project success indicators.

## Summary and Hypothesis

In summary the social media tools that this literature review has highlighted as currently being engaged within project environments are:

1. Collaborative Projects;
2. Blogs;
3. Content Communities;
4. Social Networking Sites.

This project shall put what the literature has highlighted to the test however to find out if these tools are currently being deployed within project environments.

Given social media's capacity for allowing a high frequency of communications that harbour a high level of social presence, while simultaneously providing the means for users to reduce the levels of 'uncertainty and equivocality' inherent within a message (Daft and Lengel, 1989), I hypothesise that the greatest impact social media tools will have will be on Time. The ability offered by collaborative projects to allow teams to jointly create, develop and access project documentation I predict will be displayed by research participants as one of the most frequent benefits social media brings to project management. It is this benefit that will impact on time the most by cutting back the need for meetings, while maintaining clear accessible logs for project team members to ensure they each know what has to be completed by when and to what specifications.

I hypothesise that a positive impact will also be displayed via the benefits highlighted by research participants on cost, simple for that fact that the increased level of fast paced communication offered by these tools will have an active effect on overhead reduction by reducing the amount of time spent in meetings and increasing the amount of time spent on work package completion, therefore allowing for a reduction in scheduled time for project completion, which in turn reduces a projects indirect overheads such as staffing costs, space hire etc…

My final prediction is that usage of social media tools will display benefits linked to improving overall quality of project outputs, but in actual fact these benefits will arise from a higher level of stakeholder engagement. This increased level of engagement will work to align stakeholder expectations and project outputs more intrinsically, therefore building in a quality improvement mechanism via the input and feedback from end users.

# Research Methodology

## Introduction

This chapter will outline the research methods used in this project which has the aim of compiling a snap shot at how social media tools are currently deployed in a project setting, and exploring and quantifying how social media tools have impacted on the key indicators of project success (Time, Cost and Quality). This chapter will flow in the narrative of how the project is being undertaken by first outlining the paradigm and philosophy that informs this research project, before moving on to detail and justify the specific research methods engaged in this project as a means to explore and quantify how Social Media is actually used within the work place, and what benefits and disadvantages the application of social media techniques have brought to different project environments.

Next shall follow a section detailing the data collection methods and sampling strategy that will be used as a means of harvesting a rounded sample of data across employment sectors and the four different project types detailed by Lock (2007) which are, “Type 1 Projects: civil engineering, construction, petrochemical, mining and quarrying; Type 2 Projects: manufacturing; Type 3 Projects: IT projects and projects associated with management change and Type 4 Projects: projects for pure scientific research”.

The next section shall detail the data analysis and interpretation methods used highlighting how the data has been focused to help first define how social media is used across different project types in different industries, before detailing how benefits and disadvantages have been explored and linked back to Time, Cost and Quality as the key indicator of project success. The last section of this chapter will highlight any issues and challenges encountered over the course of this research project, detailing any limitations on the data collected.

## Research Paradigm & Philosophy

The research objectives of this project (to determine a list of current social media uses in a project environment from a review of current literature, to critically analyse the functionality of the current social media tools being engaged to draft a set of possible impacts that social media tools have on the key indicators of project success and to compile a snap shot of how social media is used within project environments) when considering the most suitable research paradigm one is drawn towards the Objective Positivist approach

(Holden and Lynch, 2004) to research. This is because this project seeks to statistically analyse how social media is used, testing what has been highlighted in the current literature, before exploring how specific social media tools have impacted on the key indicators for project success. Ideally this would be completed initially with a survey of project team members to harvest data on what social media techniques and tools are being engaged in the field, before delving deeper in to project evaluation documents and key datasets detailing final project completion schedules, budgetary spends, and end user satisfaction ratings against the set project baselines as to compare records of projects completed using social media tools and projects completed without the use of social media tools, then triangulating what differences the data displays in terms of impact on Time, Cost and Quality.

However given the need in the business world to maintain a competitive edge, access to detailed project evaluation documentation for the most part is not possible as it is deemed confidential. Further to this the straight quantitative approach to research outlined above would provide a good overview of how social media is used, but not the context and data of the human experience of how the teams engaging with the tools have felt each tool has impacted (positively or negatively) on their projects. This human experience can provide subjective data on what benefits or issues project members feel they have encountered when working with social media tools in a project. This subjective data is important as it gives people that actually use the tools the ability to highlight their impact on issues such as morale, communication flow, team cohesion and stakeholder engagement and management.

It is for this reason a convergent methodology shall be engaged when collecting data for this project. A fixed mixed method design shall be used, namely a Mixed Method Monostrand Conversion Design (Teddlie & Tashakkori, 2006, pp. 18). This mixed method approach to research will allow for the strand of research (a survey) to engage both quantitative fields for data collection and qualitative fields for data collection. The conversion will take place in terms of the qualitative data where the data captured will be analysed and quantitised (Driscoll et al., 2007, pp.22) to identify emergent themes of benefit and issue detailed by participants. This approach will work to negate the issues around confidentiality, while also capturing the human experience of using social media tools.

## Research Methods

This mixed method design shall take the form of a survey that will engage both quantitative and qualitative fields for data collection. Quantitative methods will be used to statistically evaluate what social media tools are actually being used in field, and collect key demographics around who is using the tools (Gender, Age Group, Project Type) and what has had an impact in terms of benefit and disadvantage in project environments via a Likert Scale (1932). The Likert Scale (1932) will differ slightly in the ratings it uses, instead of having ratings move from strongly disagree to strongly agree for each statement the scale shall hold each social media tool type and ask participants to rate how useful the tool was to the project. The ratings will be:

1. The tool caused problems;
2. The tools was not helpful;
3. I have not used this tool;
4. The tool added some benefit;
5. The tool was a major benefit.

This rating scale has been selected firstly to provide no neutral rating field, and secondly to link each rating directly to how beneficial the social media tool was rather than a set of statements for each tool. The data captured form the Likert Scale (1932) will be complimented by the qualitative fields that will then be used to capture participants' subjective views on what benefits or issues they have encountered while using the social media tools.

This survey will be administered via the online survey site Survey Monkey, and circulated by key contacts within five pre-determined organisations, two Higher Education providers that engage in Type 1, Type 3 and Type 4 projects, one telecommunications company that engages in Type 2 and Type 3 projects, one charity that engages in Type 3 projects and one company linked to the entertainment industry that engages in Type 2 and Type 3 projects. The survey shall also be circulated via the social media platform Facebook, and online project management forums such as the Association for Project Management forum to widen the participant pool and gain a wider spray of industries and hopefully a better view of what social media tools are engaged.

To gain a suitable snap shot of how social media tools are currently used within project environments the target number of participants in this survey will be sixty, this figure should provide a good overview of the demographics of project team members, while still being achievable given the timeframe of completion for this dissertation. To increase the amount of qualitative data generated each participant will be asked to note up to three benefits they have encountered while working with social media tools, and up to three issues they have encountered giving a total maximum of 180 qualitative responses in regards to benefit and issue analysis.

## Data Analysis and Interpretation Methods

The quantitative data that will be collected during this project will then be analysed and used to display the key demographics of social media tool users and which social media tools are actually used across Lock's (2007) 4 project types. The qualitative data collected will be analysed and grouped to develop broad themes of how social media tools are benefiting projects, and what issues have and can arise. These benefit themes will then be linked back to each tool type and this data will be indexed against the quantitative datasets to highlight what benefits each project type can expect to be encountering due to the usage of the tools. The qualitative linked to issues that have been encountered will be analysed to identify any common causes so that a set of recommendations as to how to mitigate the risks of the issues arising can be drafted.

As a further means of taking the pulse of how social media tools are currently viewed within the business world for any participant that identifies as never engaging with social media tools, I will canvass them to see what (if any) social media tools they feel would of benefited the projects they have been engaged with, this will be achieved by engaging a field for qualitative data capture to see how these participants feel social media tools could of benefited their work. This will allow me to analyse actual benefits encountered against what benefits project professionals expect from using social media tools within a project.

Finally the themes identified via this survey will be linked back to the key indicators for project success using suitable literature to display the linkages between a given benefit or issue to the impact it has on Time, Cost or Quality and therefore the overall success of a project.

## Challenges and Limitations

The first and perhaps largest issue encountered during the data collection phase of this project relates to how survey participants self identify the types of project they are engaged with. While a well known definition of the four project types has been engaged and outlined with examples, subjective perception will always play quite a large role in how participants identify to each project type. For example the entertainment company I have engaged that participant in Type 2 (manufacturing) and Type 3 (IT and Change Management) projects (Lock, 2007) do so with the same products (video games). So where one organisational member maybe engaged in mass producing the actual finished article which is clearly a manufacturing task, as it is an IT related product they may still identify as a Type 3 project participant.

The next challenge to data collection in relation to gaining an even spread of types of project participant relates to the actual tasks involved in the day to day completion of a project. Participants engaged in type 3 projects will have a greater chance of completing the survey as their day to day tasks will involve heavy computer usage, whereas a participant engaging in a type 1 project (civil engineering) is bound to spend most of their time completing tasks on a site with limited computer access.

Time has been the final challenge in relation o the completion of this project; this also has thrown up the only limitation to this research. Due to the timeframe of completion for this dissertation (three months) the target of participants has been set at sixty. To take a true and full account of how social media is engaged ideally this project would take place on a larger scale with a participant target set much higher. Generating sixty hits in such a short space of time will be a challenge however that will require a heavy amount of interest generation and time to keep requests for participants listed in key online forums.

# Data Analysis

## Introduction

This chapter will present and analyse the quantitative and qualitative data collected via the survey outlined in the Research Methodology of this project, in an attempt to highlight how social media tools are being used, and what impacts tools have having on Time, Cost and Quality, and to also prove the hypotheses laid out in the literature review, namely:

- That the greatest impact social media tools will have will be on the success indicator of Time. The ability offered by collaborative projects to allow teams to jointly create, develop and access project documentation I predict will be displayed by research participants as one of the most frequent benefits social media brings to projects. It is this benefit that will impact on time by cutting back the need for meetings, while maintaining clear accessible logs for project team members to ensure they each know what has to be completed by when and to what specifications.
- That a positive impact will also be displayed via the benefits highlighted by research participants on Cost, simple for that fact that the increased level of fast paced communication offered by these tools will have an active effect on overhead reduction by reducing the amount of time spent in meetings and increasing the amount of time spent on work package completion, therefore allowing for a reduction in scheduled time for project completion, which in turn reduces a projects indirect overheads such as staffing costs, space hire etc…
- That usage of social media tools will display benefits linked to improving overall quality of project outputs, but in actual fact these benefits will arise from a higher level of stakeholder engagement. This increased level of engagement will work to align stakeholder expectations and project outputs more intrinsically, therefore building in a quality improvement mechanism via the input and feedback from end users.

This will be achieved by first analysing the quantitative data that has been collected to compile a snapshot of how social media tools are currently used across different project types including the key demographics around what types of user are mostly engaging with

the tools. Next this chapter will analyse the qualitative data captured in relation to: actual benefits participants have encountered when using social media tools, and finally any issues or disadvantages users have encountered when using social media tools to develop a number of themes for how social media tools benefit or disadvantage a project. These themes will be linked back to each social media tool so they can be mapped against the responses linked to each of Lock's (2007) project types to identify what benefits are being experienced within each project type. Lastly each major benefit theme will be analysed against key project management theories and frameworks to theorise how each major theme will impact on Time, Cost and Quality, thereby allowing each tool type to indicate what impact it will bring.

Given the objectives laid above this chapter will be structured in the following way. The first section of this chapter will be titled, 'Data Parameters' and will detail the specific parameters of the data collected via the survey highlighting any issues or shortcomings that have been encountered during the data collection phase.

The next section will be titled, 'The Overall Picture' and will detail the analysis of the quantitative data on: the demographics of participants (gender, age group), the types of projects participants belong to, the types of social media tools that have been or are being used by participants and finally how participants would rate their experience of using each social media tool in terms of benefit or disadvantage.

The next section will be titled, 'Benefit and Issue Analyse' and will first analyse the data collected from participants on the actual benefits they have encountered when using these tools to group together responses thereby identifying broader themes of benefit area. This section will then analyse the data collected in regards to issues and problems that have been encountered and caused by the use of social media tools to identify themes of possible risks to project success.

The final section of this chapter will be titled, 'Impacts of Social Media Usage' and will index the data analysis from sections two and three to develop a view of how social media is currently used to impact positively and negatively on the key project success indicators.

## Data Parameters

The original target set for number of responses for this survey was sixty; the number of response received was sixty-one in total. Of those sixty-one respondents only four identified as having never been involved in a project leaving a total of fifty-seven viable respondents from project settings. When asked, "Were or are social media tools used during the projects you have been involved with?" five participants choose not to answer, and eighteen selected no meaning thirty-four respondents in total had experience of using social media tools in project settings. This means that the conclusions drawn from this data are based on a sample of thirty four project participants primarily, while this is not as extensive as hoped it is still a solid sample to draw initial indicators and conclusions from.

Further to this, those that selected 'no' to having used social media tools were probed further to harvest their opinion on what (if any) social media tools they believed could benefit the projects they are or have been involved with and in what ways, this was achieved by asking each of the eighteen participants to detail three reasons as to why they believe social media tools could of benefited their projects via an open-ended qualitative field. Of a possible of fifty-four qualitative response twenty one were collected. This data will allow the actual benefits to be analysed against expected benefits to see what expectations are linked to social media tools before they are actually used, and if these expectations are realistic.

Finally to harvest a decent amount of qualitative data each of the thirty-four participants with experience of engaging with social media tools within a project were asked to detail three encountered benefits each and three encountered issues each. Of a possible total of 102 highlighted benefits and issues a total of 80 benefits were detailed and a total of 70 issues.

The last limiter on the data that became apparent during the data collection phase of this project relates to the balance of the project types participants were engaged in. As will be detailed in the next section the vast majority of respondents (39) had been mostly engaged in type 3 projects: IT and Change management (Lock, 2007), with only one participant identifying as being involved in type 2 projects: Manufacturing (Lock, 2007), 8 identifying as being involved in type 1 projects: Civil engineering, construction, petrochemical, mining and

quarrying and only (Lock, 2007), and 11 identifying as being involved with type 4 projects: projects for pure scientific research (Lock, 2007). On reflection however given social media's status as a technological IT based tool and the strategy of data collection that was employed (online survey for ease of collection) the imbalance was to be expected. Given this limiter while results shall still be displayed in the tables for Type 1 and Type 2 projects, commentary and analysis will mainly be on Type 3 and Type 4 projects.

## The Overall Picture

To begin to paint the overall picture of how social media tools are currently used within project environments this section will first analyse the types of social media currently being engaged across different project types. Table 1 below has been drawn from the responses given by participants that registered a response as currently or previously using social media tools within a project, this data has then been indexed against the types of project each user has highlighted as being a part of. It should be noted that project participants were able to select multiple project types for having worked on; this is due to the trend of Organisations opting for a Matrix Management (Robert, Ford & Randolph, 1992) style of project team construction where staff members with needed skills will be engaged in different project types.

**Social Media Tools used by Project Type**

| | *Type 1* | *Type 2* | *Type 3* | *Type 4* |
|---|---|---|---|---|
| ***Collaborative Projects*** | 2 | 1 | 21 | 2 |
| ***Blogs*** | 1 | 0 | 11 | 4 |
| ***Content Communities*** | 1 | 1 | 16 | 7 |
| ***Social Networking Sites*** | 1 | 0 | 8 | 4 |

**Table 1: Social Media Tools used by Project Type**

The data held in table one already starts to paint a picture of what tools are actually being engaged in the field across multiple project types. To drill into this deeper if we look at the usage of tools in Type 3 and Type 4 projects (as those with the two highest proportions of participants) broken down by percentage of use as displayed in Figure 1 and Figure 2

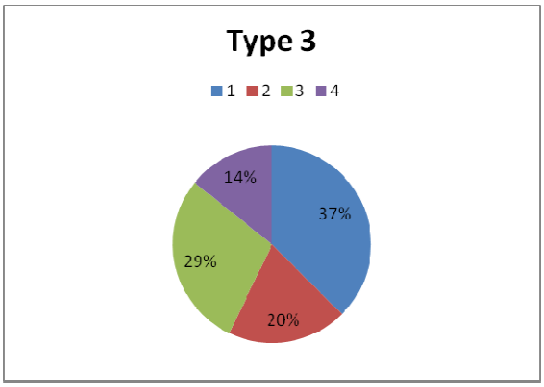


Figure 1: Type 3 Project tool usage

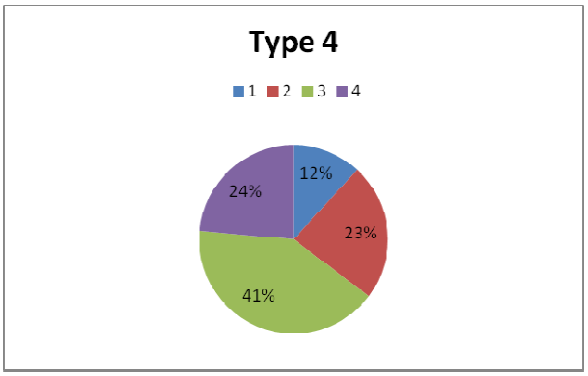


Figure 2: Type 4 Project tool usage

You can see that Type 3 project members display Collaborative Project tools (coded as 1) as the most used tool in IT and Change Management projects, while Type 4 project members display Content Communities (coded as 3) as the most used tools in scientific research projects.

This can be attributed to the nature of each of the project types, while both display a healthy use of blogs for example these will be for different purposes. Blogs engaged in type 3 projects is what has become known as the project blog (Harrin, 2010), this is the type of blog maintained by team members to keep track of progress made against project objectives, a tool used as a means of monitoring and controlling a project. Whereas blog usage in type 4 projects relate to research blogs used to publish findings to the wider scientific community (Secker, 2013).

All survey participants that had registered as having used social media tools were asked to rate their experience of each tool using a Likert scale (1932) style question. Participants were given the following options moving from left to right: "Tool caused problems, Tool wasn't helpful, I have not used this tool, The tool added some benefit, The tool was a major benefit". The data displayed in table 2 displays the cleaned data where responses listed under; "I have not used this tool" have been removed.

| Rate how beneficial each tool was | | | | |
|---|---|---|---|---|
| | *Caused Problems* | *Wasn't Helpful* | *Added some Benefit* | *Was a Major Benefit* |
| ***Collaborative Projects*** | 0 | 1 | 12 | 12 |
| ***Blogs*** | 0 | 1 | 8 | 8 |
| ***Content Communities*** | 0 | 0 | 11 | 11 |
| ***Social Networking Sites*** | 0 | 1 | 5 | 9 |

Table 2: How Beneficial was each Tool

When the data in table 2 is indexed against table 1 the data displays unequivocality that the majority of participants that have used social media tools within projects feel that the majority of tools have benefited the project they have been used on. For most tools participant responses display a rough 50-50 split between the two positive ratings. The three negative blips against collaborative projects, blogs and social networking sites are linked to Type 3, Type 3 and Type 4 projects respectively, this goes against the grain and could be attributed to a bad experience by the users, or a misunderstanding of how the tools should be engaged.

Tables 3 and 4 below detail the breakdown of active social media tool users by gender. Of the 61 survey participants 3 choose not to disclose their gender while 31 registered as female and 27 registered as male. This is quite an even divide when considering the sample, however when looking at responses from those participants who registered as using or having previously used social media tools in a project setting as displayed in Table 4 you will see that female participants outnumber active male users. When holding this against the full data set in Appendix A; the data displays that a high

| Gender of SM tool users | |
|---|---|
| *Female* | 20 |
| *Male* | 13 |

Table 3: User Gender Breakdown

| Gender of users by project type | | | | |
|---|---|---|---|---|
| | *Type 1* | *Type 2* | *Type 3* | *Type 4* |
| *Female* | 1 | 0 | 14 | 5 |
| *Male* | 2 | 1 | 12 | 3 |

Table 4: User Gender by Project Type

proportion of the male respondents that have never engaged with social media tools are linked to Type 1 projects, this could be an indicator that Type 1 projects are not suited for social media tools, this point will be explored in section 4 of this chapter.

The last part of the picture left to fill out relates to the age groups using these tools, Table 5 displays the age group breakdown of all those that participated in the survey whereas Table 6 displays the breakdown of only those participants that have experience of using social media tools. In comparison this data displays a surprising find in that it seems those of the older age groups (40-49 & 50-59) appear to be using these new tools over those in the younger age groups (18-20 & 21-29). Given the popularity of social media platforms among the youth (Lenheart et al. 2010, pp. 5), and the resistance to new technology often displayed by an older generation (Hill et al. 2008) I would of predicted these stats to be inverted with a higher number of active users in the 21-29 bracket and a lower number in the 40-49 bracket.

| Age Group of participants | |
|---|---|
| *17 or younger* | 0 |
| *18-20* | 1 |
| *21-29* | 14 |
| *30-39* | 23 |
| *40-49* | 16 |
| *50-59* | 2 |
| *60 or older* | 2 |

Table 5: Participant Ages

| Age Group of social media users | |
|---|---|
| *17 or younger* | 0 |
| *18-20* | 0 |
| *21-29* | 7 |
| *30-39* | 15 |
| *40-49* | 11 |
| *50-59* | 1 |
| *60 or older* | 0 |

Table 6: User Age Groups

To summarise, the overall picture so far painted by the quantitative data captured during this project displays that there is a healthy spread of the social media tools being used across different project types. While it is true that the data displays slight differences in use, participants have noted across the board that these tools do benefit the projects they are used within at least to some degree. The data also displays that a higher amount of female users are using or have used social media tools, and that the majority of active users are in the 30-39 or 40-49 age bracket indicating that the older age brackets are either more actively engaging with this technology, or are possibly within positions to more affect active engage with this new technology throughout their projects and organisations.

## Benefit and Issue Analyse

When analysing the qualitative data captured from participants in the survey, 9 theme headings were developed from the actual benefits participants listed and 12 theme headings were developed from the issues listed. These theme headings have been designed to indicate broadly the areas in which social media tools have displayed benefits and disadvantages, and in the final section of this chapter will be analysed to build links to how each theme could impact the key indicators of project success (Time, Cost and Quality). After each theme was identified responses were added to each relevant category as to indicate the major themes and the minor themes, it should be noted that a very few responses fell within multiple categories; for example, “Helps collect team input and make people feel included” can be counted both under ‘Knowledge and Information Exchange’ and ‘Team Cohesion and Enhancement’. In these very few cases the response has been included in both theme categories. For a complete look at all responses relating to benefits and issues please see Table 9 in Appendix A.

## Benefit Themes

The 9 beneficial themes that have been identified during analysis and interpretation of the qualitative data collected are displayed in Table 7. Many of these beneficial themes stem from the various opportunities social media tools offer to ease and improve communication; this is not surprising given the drivers detailed in chapter 2 in, 'The Development of Social Media'. Below is a brief explanation of the response groupings that have led to the identification of these themes.

| Actual benefit Themes | |
|---|---|
| *Organisational Engagement and learning* | 7 |
| *Stakeholder reach and engagement* | 16 |
| *Knowledge and Information exchange* | 18 |
| *Ease of Collaboration* | 11 |
| *Information Clarity, Transparency and Access* | 15 |
| *Coordinating & Monitoring progress* | 9 |
| *Increased Collaborative Reach* | 4 |
| *Time Management and savings* | 5 |
| *Team Cohesion and Enhancement* | 5 |

Table 7: Actual Benefit Themes

The theme, 'Organisational Engagement and Learning' grouped responses that related to embedding lessons learned from a project throughout the whole organisation to impact future project planning processes, and improving project visibility within an organisation to engage the whole organisational network as project contributors. This theme was developed to reflect project management best practice principles relating to lessons learned (OCG, 2009, pp. 12 & 124) and communication (APM, 2012, pp. 12).

The theme, 'Stakeholder Reach and Engagement' grouped responses relating to generating interest and investment in projects via social media tools and the ability social media tools give project teams to engage with stakeholders from the offset to refine product specifications. This theme was developed to reflect project management best practice principles relating to stakeholder engagement (OCG, 2009, pp. 41-42).

The theme, 'Knowledge and Information Exchange' grouped responses relating to the ease of communication and detailed information exchange among project team members using social media tools.

The theme, 'Ease of Collaboration' grouped responses relating to the ability social media tools give project teams to collaboratively develop and maintain documentation, and those responses that detailed the benefit of enhanced collaboration.

The theme, 'Information Clarity, Transparency and Access' grouped responses relating to the increased accessibility of project information, or responses that detailed an increased understanding of project goals via shared documentation held in tools such as Wikis.

The theme, 'Coordinating and Monitoring Progress' grouped responses relating the benefits social media tools brought to a team's ability to self organise and prioritise tasks due to the increased visibility of project progress. This theme fulfils the purpose of the AGILE practice of SCRUM (Schwaber and Sutherland, 2013, pp. 10) but in a more informal manner.

The theme, 'Increased Collaborative Reach' grouped responses relating to the ability social media tools offer to allow for contribution from anywhere. This included responses detailing geographically dispersed teams, as well as those noting the increased ability to partake in remote working.

The theme, 'Time Management and Savings' grouped responses relating to the reduction in time lost progressing the project due to meetings, and the responses noting the ability social media tools offer for team members to quickly gain answers to questions.

The theme, 'Team Cohesion an Enhancement' grouped responses relating to improving team relations, team member empowerment or the enhancement of a team's working relationships.

Table 7 displays the groupings of responses across the 9 actual benefit themes. The data displays that the major benefits social media tools bring to projects are: ease of knowledge and information exchange, improved stakeholder reach and engagement, an increase in information clarity, transparency and access for project teams and the ability to ease collaboration between project team members. Although all themes had a decent amount of responses the final section of this chapter will focus specifically on these 4 major beneficial themes when theorising each social media tool's impact on Time, Cost and Quality.

When the benefit themes are analysed against the expected benefits highlighted in Table 9 in Appendix A, the data shows that each expected benefit listed by participants with no experience of using social media tools map quite comfortably into the grouped themes.

## Issue themes

10 issue themes were identified from the data provided by respondents as displayed in Table 8. Whereas the benefits registered by respondents had a clear unifying focus in the form of communication, the data displays a wider spread of issues that have been identified by participants. These issues range from digital security and technical issues, to a lack of engagement with the tools or a loss of focus on the task. Below is a brief explanation of the response groupings that have led to the identification of these themes.

| Issue Themes | |
|---|---|
| *Motivation* | 7 |
| *Digital Security* | 3 |
| *Miscommunication* | 2 |
| *Stakeholder Alienation* | 7 |
| *Leadership and Guidance* | 10 |
| *Loss of focus* | 13 |
| *Documentation Contamination* | 5 |
| *Team Cohesion Issues* | 7 |
| *Technical Reliability* | 2 |
| *Varity of Tools* | 4 |

Table 8: Issue Themes

The theme, 'Motivation' grouped together responses relating to a lack of engagement with the social media tools an organisation deploys. The heading motivation was selected as (Harrin, 2010) notes that this lack of engagement stems from a lack of motivation to engage with these new tools.

The theme, 'Digital Security' grouped together responses relating to project sites or social media accounts being hacked.

The theme, 'Miscommunication' grouped together responses that detailed social media communications being misinterpreted by meaning or emotional tone. This displays that in the case of some social media tools (such as an instant messaging service) the amount of social presence (Short et al., 1976) harboured within the medium is still not totally suitable for all communications.

The theme, 'Stakeholder Alienation' grouped together responses that detailed overloads of information that ended up distancing, confusing, or diminishing the interest of project stakeholders.

The theme, 'Leadership and Guidance' grouped together responses that detailed a lack of directive ownership over project sites, confusion and delays caused by an overwhelming amount of responses from team members, and issues that have arisen due to a lack of a clear set of guidelines for the use of the tool (for example confidential information being published publically via a social networking site). The theme heading was identified as all of

the problems detailed in this category indicate a lack of leadership in and clear guidance on how to operationalise these tools.

The theme, 'Loss of Focus' grouped together an array of responses detailing several different issues all relating to losing the focus of the projects objectives. These responses were concerned with an over abundance of discussion that lead to projects going off spec, to project team members focusing on using the social media tools to update task statuses and documentation and losing focus on the actual work packages that needed to be completed.

The theme, 'Documentation Contamination' grouped together responses concerned with delayed or incorrect information updates quickly being disseminated and leading to project teams operating on the wrong information. This theme displays the importance of maintaining a version control strategy (OCG, 2009, pp. 93) and that without one person monitoring and controlling the version control log these tools can greatly exacerbate the issue due to their rapid dissemination of information.

The theme, 'Team Cohesion Issues' grouped together responses that detailed inappropriate uses of the tools to air grievances, or situations where the increased visibility of communications has exacerbated personality conflicts within project teams. This theme displays that while the tools can greatly enhance team cohesion, they will only do so if that is what the team dynamic is, if issue already exist within a project team between members these tools may magnify them.

The theme, 'Technical Reliability' grouped together responses detailing technical issues that have arisen to cause a loss of service from the social media tool being used. This theme highlights the importance of maintaining an 'offline' local back up of documentation and plans in digital of hard copy format.

The theme, 'Varity of Tools' grouped responses that noted the need to prioritise and carefully select what tools will be sued due to the amount of platforms currently available. This theme enforces the point made by Nicholls (2011) that organisations must carefully consider how each social media tool will impact its day to day operations before deciding what to deploy.

The data displayed three responses that did not fit into any of the theme categories above. These responses where:

- Technophobia,
- Unwanted Attention at Times,
- And blurring of professional and personal life.

The data in Table 8 displays that the major issue themes are: loss of focus and lack of leadership and guidance. It should be noted however that there were less responses to this survey question, that may be an indicator that the majority of participants have not actually encountered any issues in using social media tools to date, as these new tools become standard practice this may change.

To summarise the data displays that the major benefits social media tools bring to projects are: ease of knowledge and information exchange, improved stakeholder reach and engagement, an increase in information clarity, transparency and access for project teams and the ability to ease collaboration between project team members and the major issues that have been encountered relate to: loss of focus on the scope and tasks of the project and lack of leadership and guidance in using these tools.

## Impacts of Social Media Usage

Now that the overall picture of usage has been painted within Section 2 of this chapter, and Section 3 has highlighted the areas where social media tools have benefited projects, and the major themes of the issues that have been encountered, this final section of the chapter will cross analyse the datasets to identify how social media tools are benefiting Type 3 and Type 4 projects in terms of positive impacts against Time, Cost and Quality.

To begin each of the 4 benefit themes are will be linked back to each social media tool highlighted during the Literature Review with reasoning as to why the tool displays that theme and what indicator each theme will impact.

- *Ease of Knowledge and Information Exchange*- This theme can be linked to 2 social media tools intrinsically; these are Blogs and Content Communities. As Kaplan and Haenlein (2010) note Blogs since their very inception have always been focused on allowing the exchange of information by harbouring the tools for author and reader to open a dialogue on the content put forth. One of the main purposes of Content Communities within a business setting is to harbour mass knowledge exchange between content producer and project stakeholder. As recent studies into social media's impact on crisis communications displays (Wenberg, 2013) this beneficial theme will have the largest impacts on the project success indicator of Time which will also translate to a positive impact on Cost. This is because increased methods of how project members can quickly exchange knowledge and information will have an active reduction on the time spent in progress, planning and update meetings, this in turn allows more time to be spent on work package completion there by reducing overheads linked to production as schedules can be reduced.
- *Improved Stakeholder Reach and Engagement*- This theme can be linked back to 3 social media tools, namely; Social Networking Sites, Blogs and Content Communities. Research (Brunswick Group, 2013) displays the improved reach and engagement with stakeholders that appropriate usage of Social Networking Sites can bring. Whereas Kaplan and Haenlein (2010) detail the ever growing pastime of blogging, a well developed externally facing project blog can tap directly into a target audience. Lastly Powell (2013, pp. 57) details how inventive usages of Content Communities such as YouTube can invest stakeholders deeply in an organisations brand and products. This theme will have the greatest impact on the project success indicator of quality, as project management framework PRINCE2 (OCG, 2009, pp. 56) highlights an increased level of stakeholder engagement throughout a project will work to ensure project outputs are truly aligned with stakeholder needs achieving stakeholder buy-in; this can also work positively on cost by reducing the number of off specification project changes.
- *Increase in Information Clarity, Transparency and Access*- This theme can be intrinsically linked to Collaborative Projects. One of the main purposes of Collaborative Projects is to offer project members the tools needed to maintain a shared document base (Kaplan and Haenlein, 2010), therefore building towards

information clarity, transparency and ease of access. This theme will have the greatest impact upon the project success indicators of time and cost. As Frese and Sauter (2003) highlight one of the factors contributing to project failure is a misunderstanding of the projects purpose between project team members, leading to breaches in budget and projects running over schedule as they need to be fixed (for example see the OIA review of the BBC's Digital Media Initiative). By increasing the clarity, transparency and access to key project documentation throughout the project these risks to cost and time can be mitigated.

- *Ease of Collaboration*- This theme again can be intrinsically linked to Collaborative Projects, given that by their very nature the social media tools defined as collaborative projects (E.G Microsoft Project 2013) are developed to enable mass collaboration on tasks and documentation (Harrin, 2010). This theme will have the largest impact upon the project success indicator of time. Harrin (2010) notes that this streamlining of collaboration processes has displayed solid improvements in task completion times.

Indexing this information against the data contained in Table 1 we can see that current social media usage in Type 3 projects should display positive benefits against Time and Cost followed closely by Quality. This is due to the high usage of Collaborative Projects, coupled with a decent usage of Content Communities. Given the nature of Type 3 projects this matches as the outputs of IT and Change Management projects are often intrinsically linked with stakeholder views and needs, and up against set timeframes to take advantage of an opportunity and against set budgets.

Whereas the usage of social media in Type 4 projects indicates that project managers should find positive impacts on Time and Quality due to the high usage of Content Communities. Given the nature of Type 4 projects this makes sense as research outputs are refined, tested and peer reviewed to prove their worth, and the faster this process can take place via quick knowledge dissemination the faster a project will come to a close, whereas the more peers that review the work the higher quality the final outcomes of the project will be, due to the refinement of conclusions and results from peer assessment.

The final point this data has displayed via the major issue themes that have been identified is the essential need for Project Managers to maintain their leadership role and to set out clear guidelines and procedures when engaging with social media tools.

## Conclusion

This chapter will analyse the results of this project's research phase against the original research questions and objectives detailed in the introduction. Namely this chapter will look to use the results to display how social media is being deployed in a project environment, and detail what impact social media tools are having on the key indicators of project success (Time, Cost and Quality). This project set out to complete these two tasks by achieving 4 research objectives, this chapter will now detail each objective and how it has been achieved.

The first research objective was to determine a list of current social media uses in a project environment from a review of the current literature. This was achieved within the critical literature review, where 4 social media tool types were highlighted as the tool groups currently being engaged within project and business environments.

The literature detailed the following tools:

- Collaborative Projects- Tools that provide a project team with a virtual space where all documentation can be stored, accessed and collectively edited by multiple workers.
- Blogs- Tools that range from comprehensive online journals to micro-blogging services such as Twitter. These tools allow team members to maintain a reviewable log of their activities and project task progress.
- Content Communities- Sites such as YouTube that allow for the uploading and dissemination of user-generated content. This content can be in multiple formats from video to text and PowerPoint presentations.
- Social Networking Sites- Sites such as Facebook and LinkedIn, these sites allow project teams to engage with project stakeholders and end users in a way that was previously unachievable.

The next objective was to critically analyse the functionality of the highlighted tools to draft a set of predictions of how the social media tools would impact on the key indicators of project success. The literature review again achieved this objective by noting a set of predictions on the types of benefit that would be detailed by participants in the qualitative

fields of the survey engaged during data collections. The first prediction was that the ability offered by social media tools to collaboratively edit and access documents would be displayed as the most frequent benefit, and that this benefit would map directly as a positive impact on the success indicator of Time. An Analyse of the data in Table 7 and Appendix A displays that while this was not the most frequent benefit detailed it was among the major benefits.

The next prediction related to benefits that would indicate positive impacts on Cost. Project Management Frameworks such as PRINCE2 (2009) and the APM Body of Knowledge (2012) allude to how effective project team communication and outstanding stakeholder engagement can lead to solid budgetary savings. The data displayed in Table 7 shows that the most frequently detailed benefits related to ease and speed of knowledge and information exchange, which as detailed in my data analysis has an active effect on overhead reduction by reducing the amount of time spent in meetings and increasing the amount of time spent on work package completion, therefore allowing for a reduction in scheduled time for project completion, which in turn reduces a projects indirect overheads such as staffing costs, space hire etc…

The final prediction related to benefits that would impact on Quality arising from improved stakeholder engagement throughout a project's life cycle. Benefits linked to improved stakeholder reach and engagement ranked as the second most frequently listed benefit type. PRINCE2 (2009, pp.56) indicates how high levels of stakeholder engagement throughout a projects life cycle work to better align project outputs to end user needs. Further to this increased level of engagement can facilitate stakeholder investment and excitement in project outputs thereby intrinsically linking the outputs to end user wants and desires. Both of these factors work to ensure the final outputs of a project meet user needs thereby ensuring the indicator of Quality is met.

The final research objectives where: to compile a snap shot of how social media is used within project environments, and to canvass past and present project team members that have used social media to identify the key benefits encountered when using social media tools within a project. The data displayed in Table 1 highlights a good snapshot of what current social media tools are being used within the field of project management. From the

data collected it is clear for the most part that Type 3 and 4 projects engage more highly with social media tools, Table 10 in Appendix A shows that while responses were collected from Type 1 project workers most indicated that they do not currently use social media tools within their projects, I believe this may be linked to the work environment of most Type 1 projects that sees the majority of team members without daily computer access.

Finally as detailed within data analyse all survey participants that indicated they were or had used project tools were asked to list three major benefits they had encountered and three problems. This data is what was used to draft the benefit themes detailed in my data analysis.

## Practical Implications

The results of this research project have thrown up several implications for Project Professionals. The first is that it is clear that usage of social media tools within projects can bring positive impacts on Time, Cost and Quality by improving the flow and exchange of information, offering the opportunity and ability to engage with a wide cross section of a projects stakeholders and providing teams with the tools to collaboratively create and maintain clear and transparent project documentation.

However the issue themes developed from the data participants provided on problems they had encountered shows that all of these benefits can easily be negated if any of the highlighted tool groups are operationally engaged without first developing a set of clear guidelines, roles and responsibilities. The PRINCE2 Project management framework (2009, pp 12) highlights the need for defined roles and responsibilities within a projects to ensure they are successful, this also applies to the usage of social media tools, without this clearly set out steer these tools can quickly become cumbersome and the discussion they allow can lose focus. Nicholls (2011) also clearly sets out the essential need for clear policies that list acceptable and unacceptable behaviours to be drafted before any of these tools are engaged.

In conclusion this study has found that social media tools currently appear to be used within IT and Change Management projects and projects for pure Scientific Research. Each of the tools highlighted within this project have displayed clear benefits to the projects they have been used within with almost all participants with experience using each tool type listing

each as bring some benefit to the project, or being a major benefit to the project. The themes that emerged as major benefits can be mapped against each of the project success indicators to display how they will positively impact them. However before any team considers using any of these tools, the data displays that it is vital that clear polices, roles and responsibilities be defined to ensure all members know the parameters of operation for the tools that are engaged.

# Recommendations

This final section will briefly detail my recommendations for further research in this area and recommendations for practicing project professionals in how this research should inform their usage of social media tools.

## Areas for Further Research

Given the limitations on this research arising from organisational needs to maintain confidential records, as to safe guard competitive edge, my first recommendation for further research into this area would be for my results to be cross analysed against a wide array of project evaluation documents and the data organisations keep on past project completion schedules, final budgetary spends, and end user satisfaction surveys. This would allow for my theorised impacts of how each social media tool type effects Time, Cost and Quality to be held up against hard data and proved true or false. This would work to cement the positive benefits different social media tools types bring to projects.

To further refine how social media tools should be engaged in the field of project management I believe that my results could be used to formulate a set of qualitative studies designed to delve deeper into how each tool type is actually engaged in the day to day business of Type 3 and Type 4 projects. This study could build narratives of how the tools can be adapted and engaged depending on desired effect and project needs, ultimately leading to a set of good practice guidelines for social media tool usage within different project environments.

Finally the data harvested on issues encountered while using social media tools could be further explored via qualitative studies and used to develop a set of guidelines for social media policy writers within different organisations.

## Recommendations for Practitioners

This data has displayed that all 4 of the social media tools types do bring benefits to projects. Due to this the largest recommendation for practitioners arising from this research is for those currently not deploying social media tools to consider how they could start using these tools to streamline processes, increase the ease of collaboration and speed up knowledge and information exchange within their different projects.

The second recommendation for practitioners arising from this research is to ensure that all organisations currently using, or considering using social media tools within any aspect of their business make sure they have in place a well defined, developed and considered social media policy. A policy that sets out clear parameters on how the tools can be used, behavioural standards expected, expected penalties for breaches of codes of conduct, and finally clear role and responsibility structures within the teams to transparently layout who is responsible for leading usage and moderating discussions and documentation within each tool.

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# Appendix A Data

Benefit and Issue responses

| Expected Benefits | Actual Benefits | Issues encountered |
|---|---|---|
| share information | networking | Social media 'overload' of information, leading to loss of interest |
| helpful | Wider audience (potential to reach outside friends circle) | The site or content can be hacked and information misrepresented. |
| gives a broader context regarding end user | Exposure to a wider audience not otherwise a accessible. | Not everyone engaged |
| good source of Information | Visibility | it's very easy to set up many pages for projects which quickly become disorganized/out-dated |
| Increase communication | Information sharing | miss-interpretation from short communications |
| Project management requires communication in an agreed format | centralized content that's easy for anyone to edit | People don't check the wiki for updates first. |
| share resources | sharing "village knowledge" | overwhelm for the product owner |
| Work less likely to be duplicated | Coordination without actively engaging other people. People now default to checking the wikis first. | it can be based on communication with people one has never met face to face so trust issues could arise |
| Almost real time info | Daily feedback | lack of engagement |
| casts the research net wider than project components | international communication | A jumbled mass of ideas are presented to tackle each problem |
| Reliability | accessibility to information | Focus on the tool rather than the process |
| Avoid email or other communication lines with more noise | Being Collaborative in real time | Strategic discussion could loose importance |
| Project teams need shared info about the project in order to work effectively | Clarity of thought - we use Trello to clearly show tasks, progress and to communicate next steps | Distraction |
| design better training for users | Large scientific database | getting the tone wrong |
| Easily accessible reference | One common draft | Getting full team buy in |
| project is related to large public events and legacy | Communication with non-members | Blurring of professional and personal life |
| Accessibility | Easier remote working | due to tools being many and broad it decentralized many aspects of the project. meaning that a team member had many locations to go to get information instead of only needing to visit one location. There are tools that specialize in this, but are expensive for independent projects. |
| faster responses from members | Sharing of thoughts, knowledge and information | Too much influence from prospective customers' feedback (see Henry Ford's "faster horse" quip) |
| Facilitates communication when it's difficult set a meeting time | maintained continuity across assets | Excessive planning |
| Wide reach towards stakeholders | Gauging market response up front (e.g. Kickstarter) | Waste time being off topic |
| | captive audience | No owner |
| | Collaborative editing | Too many cooks |
| | Rapid access to information | Tools need to be chosen wisely. |

| | | |
|---|---|---|
| | Enhanced collaboration | Not all team members like using social media - if one doesn't it won't work |
| | Knowledge | If users do not remember to constantly update online documentation, otherwise incorrect information can be easily spread through the group |
| | Cut down on meetings where everyone has to say something | unhelpful/abusive comments to posts made |
| | Regular communication | Technophobia |
| | Visibility of documentation to the whole team | Inactive participants, leading to inaccurate data |
| | promotion of events | Your contact list can be hacked. |
| | Instant collaboration over distance | so much variety - need to prioritise optimum tools |
| | informative | randomization |
| | Ease of distributing information | lack of participation |
| | Ability to update and edit easily. | sometimes it is hard to manage too many sites/tools at once |
| | Everyone up to speed with latest development | unfamiliarity to the systems and processes used |
| | easy to comment/provide feedback | A lack of focus |
| | single place for information | Takes away from face-to-face communication and discussion |
| | Documenting shared understanding. | Cautious with the IP involved |
| | Consensus building conversations | using the media in a naive manner |
| | being able to access varied demographics quickly | Time suckage |
| | ongoing communication that is less formal -less assumptions and incorrect information as people can check and query and feel more comfortable to do so | Can incite aggressive or malicious |
| | Focussed Discussion and Debate | If a project is scrapped before completion, that could generate negative publicity |
| | Easily transportable - everyone can access from wherever they work | Bickering over details |
| | Similar projects and their business models, helped in costing and planning | Reveal confidential information unintentionally |
| | Status of project | Management perceive it as a waste of time |
| | Broadcasting | Disruptive communication |
| | Shared knowledge | People may be shy to contribute publically |
| | Limitless collaboration | Some workplaces limit access to social media |
| | set deadlines that are visible to every member of the team | Wikipedia-esque tools can sometimes use mark-up languages that take time to learn and can lead to unpredictable results |
| | Refining details during development, based on feedback from prospective customers | easy to post incorrect information |
| | Single source of documents | Being seen as unprofessional |
| | Persistence of data - notes not easily lost | who updates |

| | | |
|---|---|---|
| | Better communication | documentation overload |
| | Empowerment | disagreeable personalities can't be shut down |
| | Keeps everyone up to date on developments | when reliant on technology one can experience issues that can stall a project |
| | Easy access to the information (not on servers) | Abuse of social media- using it to air grievances or for impractical or inappropriate uses |
| | Tracking history of changes/decisions | Sometimes its easier to communicate in person |
| | raising awareness of activities | Reliance on an online tool that could go down |
| | Instant messaging comms are awesome for quick questions | Unwanted attention at times |
| | clarity | Unstructured document storage can lead to document visibility issues. |
| | Ease of updating information | Time spent fine-tuning public relations is not spent actually doing a great project |
| | speed of dissemination of information | Abstraction from the actual work |
| | revision history/project history is maintained | Cause users to spend more time updating documentation |
| | diverse and quick communication channels | Not adopted by team |
| | specific interest groups are easier to contact | Some people may be unfamiliar with the tools |
| | spreading the word | If best practices for social media tool use aren't established early in the project, different team members end up creating documentation in different places and in different formats that becomes difficult to track |
| | promotion and collaboration is easier and reaches a wider audience | someone can hack into your account |
| | Ease of editing and constructing a representative document | |
| | different researchers communicate, unbiased interactions with experts | |
| | Building excitement for project | |
| | Real time input | |
| | allowed for transparency regarding tasking. When a task is done. We all knew it. | |
| | Building hype via viral dissemination of marketing material | |
| | Team building | |
| | Bring new members up to speed more quickly | |
| | Record of ad hoc knowledge and better organisational learning | |
| | Information | |
| | Helps collect team input and make people feel included | |
| | Multiple users collaborating on a single task | |
| | bringing project work to a new audience | |

| | |
|---|---|
| | reduce meeting overhead, more time working |

Table 9: Benefit & Issue Responses

| Non SM Users By Project Type | |
|---|---|
| ***Type 1*** | 5 |
| ***Type 2*** | 0 |
| ***Type 3*** | 13 |
| ***Type 4*** | 2 |

Table 10: Non SM user Project Type Breakdown

| Gender Breakdown of Non SM Tool users | |
|---|---|
| **Female** | 8 |
| **Male** | 10 |

Table 11: Gender Breakdown of Non SM Tool Users

# Appendix B Questionnaire

# Social Media for Project Management

### 1. What is your gender?

- ◯ Female
- ◯ Male

### 2. Which category below includes your age?

- ◯ 17 or younger
- ◯ 18-20
- ◯ 21-29
- ◯ 30-39
- ◯ 40-49
- ◯ 50-59
- ◯ 60 or older

### *3. Are you currently involved in a project?

- ◯ Yes
- ◯ No

### 4. have you ever been involved in a project?

- ◯ Yes
- ◯ No

### 5. What type of projects have you been involved with?

- ☐ Type 1 Projects: civil engineering, construction, petrochemical, mining and quarrying
- ☐ Type 2 Projects: manufacturing
- ☐ Type 3 Projects: IT projects and projects associated with management change
- ☐ Type 4 Projects: projects for pure scientific research

### 6. Were or are social media tools used during the projects you have been involved with?

- ◯ Yes
- ◯ No

# Social Media for Project Management

## 7. Do you think social media tools (such as Collaborative Project software, or team blogs) could of aided in your project/s?

- ◯ Yes
- ◯ No

## 8. What types of tools would you of liked to use?

- ☐ Collaborative Projects (Wikipedia style tools that allow for collaborative document sharing and editing)
- ☐ Blogs (Project blogs, and team blogs)
- ☐ Content Communities (site that allow the sharing of media content by users, be it audio, video or text)
- ☐ Social Networking Sites (such as Facebook)

## 9. Could you briefly give three reasons why you think Social Media tools would of been beneficial?

reason 1 _____

reason 2 _____

reason 3 _____

## 10. Could you highlight below what tools you have used?

- ☐ Collaborative Projects (Wikipedia style tools that allow for collaborative document sharing and editing)
- ☐ Blogs (Project blogs, and team blogs)
- ☐ Content Communities (site that allow the sharing of media content by users, be it audio, video or text)
- ☐ Social Networking Sites (such as Facebook)

## 11. Could you rate how beneficial each tool you have used was?

| | Tool caused problems | Tool wasn't helpful | I have not used this tool | The tool added some benefit | The tool was a major benefit |
|---|---|---|---|---|---|
| Collaborative Projects | ◯ | ◯ | ◯ | ◯ | ◯ |
| Blogs | ◯ | ◯ | ◯ | ◯ | ◯ |
| Content Communities | ◯ | ◯ | ◯ | ◯ | ◯ |
| Social Networking Sites | ◯ | ◯ | ◯ | ◯ | ◯ |

# Social Media for Project Management

**12. What do you think are the three greatest benefits social media tools have brought to projects you have worked on?**

Benefit 1

Benefit 2

Benefit 3

**13. What are the three biggest problems you have encountered caused by Social Media tools used in a project?**

Problem 1

Problem 2

Problem 3

**14. Would you be willing to be interviewed by Skype to explore your answers further?**

- ◯ Yes
- ◯ No

**15. What email address can I contact you on?**