Improving Usability Outcomes for each of the Usability Practitioner Roles

Vince Bruno and Martin Dick
School of Business Information Technology and Logistics, RMIT University, Melbourne, Australia
vince.bruno@rmit.edu.au
martin.dick@rmit.edu.au

Abstract: This paper examines two sets of usability roles: the consultant vs the organisation based practitioner and the usability manager vs. the usability practitioner. This paper will review the current literature discussion of the usability practitioner's role and present findings from interviews with industry practitioners. This research interviewed twenty one usability practitioners with five or more year's industry experience. The interview transcripts were then analysed using the grounded theory methodology. The analysis provided various findings which highlighted concepts that impacted on the usability outcome of an IS project. The analysis produced twenty seven concepts which were formed into four themes, which included usability mindset, collaborative approach, usability practice and project constraints. The findings present and describe eleven of these concepts in some detail. The concepts presented are directly related conclusions discussed. This paper will focus on the noticeable differences between the various usability roles in relation to the resulting twenty seven concepts. The key findings show that usability managers look to strategic usability issues, by improving stakeholder collaboration and need to focusing on the skillsets of the usability practitioners. Consultants had a higher tendency to focus on usability activities compliance within a process, selecting and performing activities based on constraints (which include technological constraints, time and budget constraints), needed to have a degree of flexibility in their usability practice and often were used to validate usability practices in an organisation. Organisational practitioners were more focused on nurturing and educating usability understanding within the organisation and stakeholders involved in an IS project. A usability practitioner needs to be flexible enough to adapt to the situation they find themselves in when engaged in an IS project in order to maximise usability outcomes.

Keywords: usability, practitioner, role, industry, usability outcome

1. Introduction

The concept of usability (Bruno and Al-Qaimari 2004) and the range of usability activities (Ivory 2001) available to be performed have been in use for many years. The ICT industry, organisations, and the users have not matured enough in many instances to embrace usability as an important part of the development process. The credibility and benefits of usability can often suffer with the lack of usability maturity (Jokela, Siponen et al. 2006) within project teams and organisations. The usability literature has a strong focus on performing individual usability activities. The effective performance of these usability activities is clearly important in achieving a successful usability outcome. However, it is necessary to ask, is it sufficient to ensure a successful usability outcome for a project just by performing these activities correctly.

The gap in usability knowledge between research and industry practice is well documented in the literature (Parush 2006). It is important to understand what the critical issues in industry that impact the success of usability outcomes. It is also important for the usability research literature to reflect practice and add value to practice. The industry practice can inform the literature and help give it focus. This paper provides insight into the practice of usability practitioners, highlighting key concepts that can impact on a usability outcome. The focus of this paper is to examine the role played by usability practitioners and how this can impact the usability outcome of a project. The data used is from usability practitioner interviews that focused on what enables a good usability outcome to be attained in a project. This paper highlights the higher level roles of a usability practitioner, i.e. Managing or Practice, and organisational vs consultant based practitioners. Section 3 will examine some of the current literature relating to usability practitioner research on usability outcomes. Section 4 will describe the methodology being used to gather and analyse the data. Section 5 will describe some of the findings of this research, while Section 6 will look at the analysis done.

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2. Literature review

The research literature does describe various aspects to the role of a usability practitioner in practice of usability activities in an ICT project. Usability practitioners have been given many titles in industry practice, like usability practitioner, human factors specialist, user experience expert… etc. The title could include the management role. Iivari (2006) discusses various usability practitioner roles within an engagement in a project. This looks at the predominant activities performed by usability practitioners when engaged to perform usability. These include: Informative role, Consultative role, Participative role, and Configurer role.

The literature covers a lot of the skill and practice orientated aspects of usability practitioner's role. The role of improving usability understanding to promote usability adoption (Robertson and Hewlett 2004; Seffah, Desmarais et al. 2005). The need to evangelise usability (Dayton 1993; Levi, Melo et al. 2007) to sell and convince project stakeholders of its importance, these include organisational stakeholders (Bloomer and Croft 1997). Promoting of the value of usability during usability activities (Bernhaupt and Weiss 2007), as something done to introduce usability (Levi, Melo et al. 2007) where usability maturity is low (Nielsen 2005). The need for a usability champion during early stages of introducing usability in a low usability maturity organisation (Nielsen 2005) to help evangelise usability.

The role performed by usability practitioners is often not valued and lacks credibility with the IS project team (Rosenbaum, Bloomer et al. 1999; Sherman 2006; Wilson 2007). Often when integrating usability into an organisation credibility needs to be attained (Fellenz 1997; Mayhew 1999). Various surveys (Gulliksen, Boivie et al. 2004; Ji and Yun 2006) have also produced some key findings that improving usability's credibility and that the usability maturity of organisations needs to be increased. The role of a usability practitioner is continuously changing (Wilson 2005). As the usability practitioner becomes more involved in projects and with organisations, and the usability maturity improves across the industry, it is inevitable that the role will change. As discussed at the start of this section, there are various communities of practice (Iivari 2005) for usability practitioners, which highlight the changing role of usability practitioners.

The need for a usability practitioner role has been identified as important, i.e. Boiver et al. (2006) believes 'that usability issues require a "specialist" role'. Having usability practitioners whose role and responsibility lies with usability can ensure the performance of usability activities throughout a development process. Ferrara (2005) highlight that often a usability practitioners practical role is given to other ICT project team members on top of their other role in the project. This paper looks beyond these practice orientated roles that can improve the usability outcomes of ICT projects. This paper looks to the established usability practitioner roles within ICT projects. It examines the differences between organisational vs consultant roles and managing usability vs performing usability.

3. Research methodology

This research paper will attempt to answer the following research question:

> *"How do the organisation roles played by usability practitioners impact on their perceptions of how to improve usability outcomes in IS projects?"*

This question arose while examining data that was elicited from current industry usability practitioners, where the questioning was focused on the usability outcome attained in projects. The usability practitioners interviewed had a minimum 5 years' experience in the usability industry. During each interview four open questions were asked:

- Describe academic background, and work experience of practitioner
- Describe a typical day's work as a usability practitioner.
- Describe a project, that you were involved in, where usability had a good impact on the outcome.
- Describe a project, that you were involved in, where usability did not have a significant impact on the outcome.

Participants were recruited using various means. This research started with an email on the CHISIG (2011) mailing list (an Australian mailing list for usability practitioners), which provided many volunteers. Various locally based usability consultancies companies were also contacted. The practitioners interviewed also

provided other contacts of usability practitioners. This research will continue to perform interviews until saturation of data is attained, i.e. when no significantly new concepts are appearing in the analysis.

Ethics approval was obtained for the audio recording of each interview session. Each interview was then transcribed into text and loaded into a qualitative analysis tool, i.e. Nvivo7 (QSRInternational 2011). The tool facilitated the "coding" of interesting concepts in each transcript, things that may be significant for the general area of this research question and warrant more analysis.
The research process employed was Eisenhardt (1989), which specifies eight stages, see Figure 1. The research methodology being used to analyse this rich source of data is grounded theory (Strauss and Corbin 1990). This methodology provides a mechanism to iteratively gather and analyse data and build a set of concepts. This grounded theory analysis stages have been superimposed onto the Eisenhardt research process that allows for an iterative interpretivist analysis of the primary data to derive a theory.

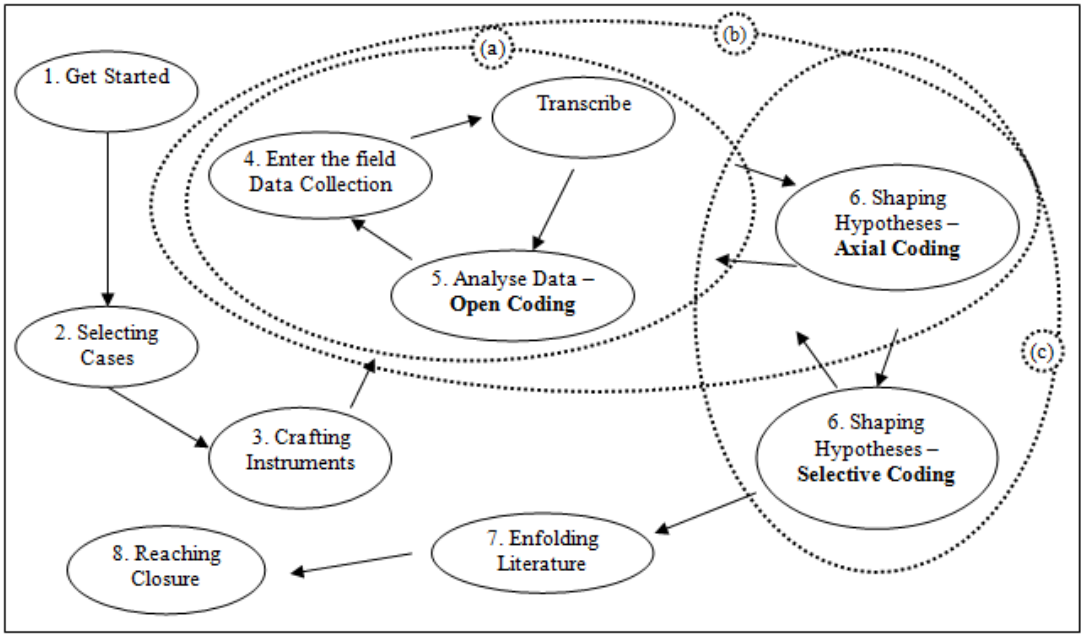

Figure 1: Eisenhardt (1989) theory building process combined with the grounded theory analytical process (Strauss and Corbin 1990)

The dotted ellipses (i.e. (a), (b) and (c)) indicate the iterative loops performed during the analysis phases of the research process. This paper takes up the research process, for an additional set of analysis iterations to shape a different hypothesis (Axial Coding) and then generate theory (selective coding) which is enfolded with related existing literature.

Initial results were published (Bruno and Dick 2007) and the final results will be published shortly. This paper is looking to describe a separate phenomenon that fell outside the scope of the primary research. This paper looks to answer a different question, as specified earlier, to the initial project research question.

4. Findings

This section will provide a summary of the concepts that have emerged from the initial research (Bruno 2011). These findings provide the basis for the additional analysis done in relation to these separate phenomena that this paper is presenting.

4.1 Demographics

The interviewed usability practitioners, as can be seen from the demographic data presented in this section, are a very diverse group of professionals. This is indicative of the usability profession, based on two survey studies conducted (Gulliksen et al. 2004; Vredenburg et al. 2002).

Table 1: Practitioner Gender

Sex	*Number of practitioners*
Male	*13*
Female	*8*

Gender is shown in Table 1, showing slightly more male practitioners were interviewed. There was no significant difference in the concepts discussed by the male and female practitioners.

The context in which usability practitioners performed usability activities was an important characteristic to examine. Understanding the different issues impacting on organisational based practitioners and consultancies have produced some interesting results. Table 2 provides a summary of the practitioners interviewed from the context of practice. The 'Mixed' practitioners had worked in both an organisational environment and in a consultancy environment.

Table 2: Practitioner context of practice

Context of Practice	Number of practitioners
Usability Consultant	8
Organisation based usability practitioner	7
Mixed	6

The usability practitioners interviewed had two different roles within the usability area. This was either a usability management role over a usability team (which also involved performing usability activities) or a usability practitioner role (which involved predominantly performing usability activities). Table 3 provides an overview of this distinction in the participants.

Table 3: Practitioner role

Role	Number of practitioners
Usability Manager	12
Usability Practitioner	9

The diversity of the various academic backgrounds, in Table 4 and Table 5, not only indicates the multi-disciplinary nature of usability practitioners, but also agrees with the idea that the discipline of usability within educational institutions is in its infancy. Many practitioners commented on wanting to do an academic program that focused on usability, human factors, ergonomics and HCI. One practitioner described it as 'An amazing diversity of people'. Working with this diversity provides an opportunity for practitioners to enhance their skills. One of the interviewed usability practitioner expressed this, 'The skillsets that they [usability team] brought along, I was able to work with many different people from PHD backgrounds through people who have been [company workers]'. The literature agrees with these statements of diversity in usability practitioner backgrounds (Gobert et al. 2002).

Table 4: Academic Undergraduate degree

Undergraduate Program	Number of practitioners
Computer Science	3
Psychology	4
Commerce/Arts	3
Multimedia/Graphic Design	4
Industrial/Mechanical Engineering	1
Information Technology and Information Systems	2
Economics	1
Accounting	1
Others unknown	2

Table 5: Graduate Diplomas, Masters and PhDs

Graduate Program	Number of practitioners
Graduate Diploma Applied Information Systems	1
Master of Science (Human Factors within HCI)	2
Graduate Diploma Ergonomics	1
Graduate Certificate in Human Factors	1

Not all interviewed practitioners had done academic study. Some had started their working careers within an organisation, having been subject matter experts (users), and moved into a usability role through opportunities within the organisation. Some of the practitioners expressed an interest in doing graduate diploma studies within this area, but there was nothing on offer that focuses on this area. The broad age range of the usability practitioners interviewed can be seen in Table 6.

Table 6: Broad Age brackets of practitioners

Age Brackets	Number of practitioners
Under 30	6
Between 30 and 50	12
Over 50	3

All the usability practitioners have worked for more than five years in the usability area and all are currently working in Australia. Usability practitioners interviewed were located in Sydney (three), Canberra (two) and mainly Melbourne. The experience of a practitioner, shown in Table 7, has been broken up into those with ten or more years of experience and the other with less than ten years experience.

Table 7: Usability Experience of practitioners

Band	Year of Experience bracket	Number of practitioners
Low	Between 5 and 9 years	8
High	10 years and over	13

4.2 Key themes

Four major themes were highlighted in this research, which include “Collaborative Approach” (C), “Usability Mindset” (M), “Usability Practice” (U) and “Project Constraints” (P). These high level themes were derived from grouping emergent concepts (discussed in section 4.3).

Analysis of these themes has highlighted various relationships between them. Figure 2 shows the major themes and relationships on which this papers analysis is based. The relationship emerged between one more or more concepts between themes or within themes. All relationships shown were significantly strong in this theory, both between themes and within themes. The key finding of this framework is the importance of the relationships between the collaborative approach and usability mindset themes.

The relationships “project shared vision” and “prevailing usability mindset” highlighted a very strong correlation between the concepts in the two themes involved in these relationships. This strong relationship is the key outcomes for the research.

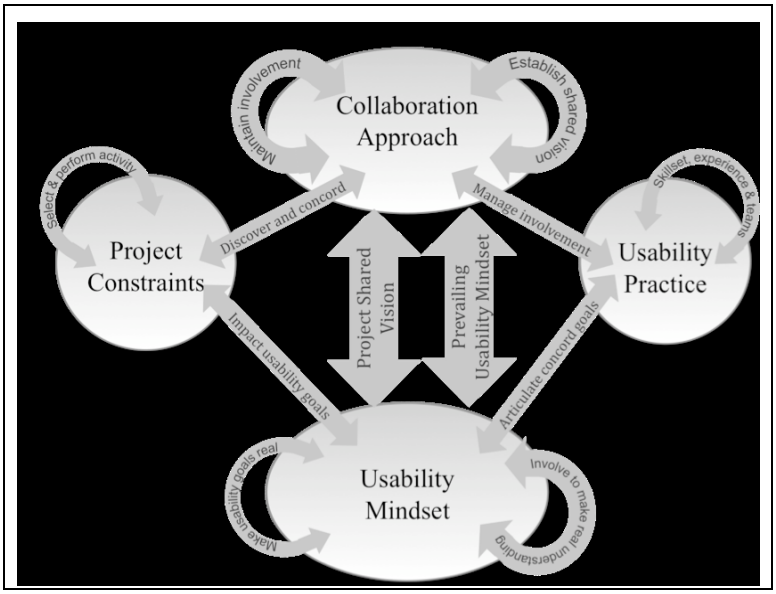

Figure 2: Major themes and relationships that influence the usability outcome for projects

4.3 Emergent concepts

There are twenty-seven emergent concepts that makeup the four themes described in the previous section. These concepts highlight various issues or considerations that were highlighted by usability practitioners when describing their involvement in performing usability in a development process.

Table 8: List of twenty seven concept that impact on the usability outcome of an IS project

Code	Concept Name	Related and discussed in this paper
C1	Establish a shared usability vision using collaboration	
C2	Involvement by all project stakeholders enhances the collaborative approach	Yes
C3	Crucial involvement by IS project team members	Yes
C4	Senior organisational stakeholder involvement	
C5	Project stakeholder relationships must be fostered	Yes
M1	Create and follow the usability requirements	
M2	Nurture usability understanding	Yes
M3	Making usability real to create a shared vision for project stakeholders	Yes
M4	Project decisions embrace a usability mindset	
M5	Usability goals promotes a usability mindset	Yes
M6	Usability maturity requires transformation of the organisational culture	Yes
M7	Usability activities involvement enhances usability mindset	
P1	Usability activities compliance within a project lifecycle	
P2	Constraints dictate usability activity selection & performance	
P3	Technological constraints	
P4	Allocating resources to usability activities	
P5	Organisational constraints external to project	Yes
P6	When usability is initiated	
U1	Demonstrate value in engaging usability practitioners	
U2	Measuring usability goals	Yes
U3	Maintain flexibility with usability practice	
U4	Managing stakeholder involvement	
U5	Evangelising usability to project stakeholders	
U6	Skillset and experience of usability practitioner	Yes
U7	Validation of usability practice	
U8	Usability team practices	Yes
U9	Usability education of project stakeholders	

This analysis that follows is based on these findings, information on these concepts and themes please refer to the thesis (Bruno 2011) on which it is based. The following sections will provide a description of the emerging concepts that are part of the analysis in Section 5 of this paper.

4.3.1 Crucial involvement by IS project team members

The essence of this concept is that involvement of IS project team members is a crucial activity in relation to improving the usability outcome for a project. It's by making the usability issues real to them that improves usability credibility and their own understanding of usability for the project. This involvement is preferred to user advocacy by usability practitioners. This involvement also allows usability practitioners to understand the technological constraints. Lack of understanding of these limitations can create pushback or disregard of usability findings by developers. This involvement must be throughout a project lifecycle.

> *'The positive of working within an organisation and being a usability person for that organisation, is that you have more access to subject matter experts within the organisation. You have more access to the technologists and the developers, so you have a clear understanding of the limitations.' #15*

4.3.2 Skillset and experience of usability practitioner

The essence of this concept is that gaining an appropriate level of skills and experience improves the usability practitioner's performance. Experiencing a variety of domains, a mix of technological environment and a range of stakeholders provide usability practitioners a good base to enhance their social skills and know how. This experience also provides a comfort with ambiguity and flexible with performance and understand iteration required when performing usability activities, with due consideration for project constraints. Skills are obtained through education, practice or mentoring by a more experienced usability practitioner. Consultants may be used to satisfy skill or resource shortages in organisational usability team or to provide education.

> *'It really also depends on the skill set of the staff involved in the process. We have varying levels of people, the outcomes usually do change, depending on who's involved in the project.' #12*

> *'I think the activities are important, but its knowing and having the right skills set to determine when to use the right activity at the right time.' #20*

4.3.3 Nurture usability understanding

The essence of this concept is that the promotion and improving of usability understanding throughout a project lifecycle is an important role. It's about understanding the various usability elements that add value to usability for the project and promoting them. These elements may include: what usability is for a project; articulating the usability goals and requirements; choosing the most appropriate usability activities and being flexible in their performance, examination and reflection on the usability findings and their implication for the usability goals. Incorporating various perspectives into the usability requirements may have an impact on the usability understanding, these perspectives may include the project stakeholders, organisational issues and/or project constraints. It is important to nurture this usability understanding to gain usability credibility by project stakeholders and reduce resistance to it.

> *'…what we have found is that we have worked with those stakeholders in different ways on different projects so they are all probably at different levels of their understanding and appreciation. So, for some we are still, like, evangelising and for some, they wouldn't consider doing a project without involving us.' #05*

4.3.4 Involvement by all project stakeholders enhances the collaborative approach

The essence of this concept is that involvement by all project stakeholders provides many benefits to a project that will enhance the usability outcome. Involvement is not one way and not restricted to the primary users. It is for all project stakeholders to be continuously engaged in usability activities, throughout a project lifecycle, in various collaborative approaches. Involvement can be through participation, observation or presentation of usability findings. Involvement is preferred over the usability practitioner being a user advocate. Involvement can provide usability data but can also provide project stakeholder feedback that can enhance the usability mindset for project. Involvement provides an opportunity to improve the acceptance of the value of usability

and develop this beyond simple acceptance. Maximising the opportunity of project stakeholder involvement is important for usability credibility.

> *'We designed it, the concepts and took it to users and went through a collaborative process and refined the concepts and so on and then took it back to the business and again the business analyst in that project was very involved in every activity with me but we took it back to the business to talk about here is the design and so on but as we done this stuff and in fact you know the good enlightened client.' #08*

4.3.5 Project stakeholder relationships must be fostered

The essence of this concept is that the development and fostering of good relationships between the various project stakeholders is the basis for improving involvement in usability activities. The fostering of good relationships promotes feedback, communication, usability value and acceptance of usability. This is done through presentation of usability findings, establishing a living usability document containing the usability mindset and evidence of the usability issues. Senior project sponsors help lubricate the relationships with project stakeholders and enables continuous involvement through a project lifecycle.

> *'We had a good engagement on the client side, we worked with them very closely, because we had worked into bigger and bigger bits of work until we had got this. We just, really really, set up that relationship well that time, they were in a different space, they were very willing to learn.' #17*

4.3.6 Making usability real to create a shared vision for project stakeholders

The essence of this concept is that making usability issues real to project stakeholders can have a significant impact on the creation of a shared usability vision for the project. Usability practitioners can use this real evidence and present it in discussion to aid in usability decisions. Project stakeholders can participate or observe usability activities in order to allow a project-shared vision to be established. A usability document should be used to maintain the evidence obtained during the project as a usability memory for project stakeholders not involved, or engaged later in the project lifecycle, to attain the shared usability vision. Establishing and fostering project stakeholder relationships is a key way of gaining involvement that can aid in making usability real to them. A usability champion is needed to help make usability real to the other project stakeholders, especially when a usability practitioner is not present throughout the project lifecycle.

> *'I think that form of usability testing and allowing people to observe it really sells itself. Because people, they can see when people – it's one thing to just say "look I'm a professional and this is something I think people are going to have trouble with" and people might go "oh yeah, whatever". But when they actually see people really, really struggling or really frustrated, where you can see it in their face and their vocal mannerisms coming out – it's just that kind of, "oh my goodness".' #14*

4.3.7 Usability goals promote a usability mindset

The essence of this concept is the articulation of usability goals as a part of the usability requirements provides the heart of the usability mindset for project. These usability goals need to be done early in a project lifecycle. The usability goals need to consider the various project elements, such as the various stakeholders groups, project constraints and project lifecycle. The usability goals will often be found to conflict and require balancing or prioritising. Involvement by project stakeholders will aid in the elicitation and understanding of the usability goals and their concordance. A defined set of usability goals provides the basis for a project's usability mindset.

> *'Well, and see that's the thing I am quite strong on here now in my role, is this stuff all the goals, principles and relationship stuff. And it is important for two reasons: one is because it guides your practice and what your focus is and that kind of stuff, good stuff; and the second is that if you have got this kind of stuff going on and you act on it and say and you articulate it to your stakeholders, then you are more likely to be perceived as rational and therefore credible.' #08*

4.3.8 Usability maturity requires transformation of the organisational culture

The essence of this concept is that organisational usability maturity requires transformation of the culture within an organisation. It requires the usability mindset to go beyond the value of usability, the selection of appropriate usability activity and beyond the shared project usability vision. An organisation with an internal usability team has a better opportunity to attain an organisational usability mindset. Usability consultants have the opportunity to improve the usability maturity in relation to acceptance of usability value to a project and the selection and performance of usability activities. They find it much harder to change the organisational culture to take on a usability mindset. Because an organisation does not embrace change quickly, a cultural shift needs to be done bit by bit.

> *'We have educated clients who will come to us and say we need a Heuristic evaluation done on a design. That's great and those clients are great. And sometimes other clients have not got a clue, and are very new to the concept of usability and we need to do a lot of hand holding and coaching along the way.' #10*

4.3.9 Organisational constraints external to project

The essence of this concept is that various organisational goals and constraints may have significant impact on the primary usability goals of a project. Organisational constraints that contribute or impact on usability goals may include political issues, rigid organisational processes, upselling requirements, outsourcing usability activities, ambitious usability requirements, loss of key stakeholders, and vendor resistance to requested changes. Usability practitioners need to be sensitive to these organisational aspects, incorporating them into the usability mindset. It's through involvement that these organisational aspects can be elicited and that any conflicts can be highlighted to project stakeholders for resolution or usability practitioner for concordance. A usability champion is needed from each of the project stakeholder groups to champion their perspective (e.g. organisational, primary user, technological constraints). This conflict between usability goals can occur anytime during a project lifecycle, but mainly at the start if most goals and constraints are elicited at that time, therefore a usability mindset is needed to concord them.

> *'Awful lot of legislation around what you should and shouldn't, can and can't, and must do, that you need to know.' #01*

4.3.10 Measuring usability goals

The essence of this concept is that measurement of usability goals improves usability credibility and usability understanding for project stakeholders. The measuring of usability goals is done to gauge how well the project has stacked up against them. Measuring often produces qualitative data that, for organisations and project stakeholders with low maturity, can be seen as discretionary. In these cases, quantitative measures provide hard facts that enable gaining usability credibility and support of usability findings that leads to ratification of requested changes. The usability goals provide the core elements to the usability mindset for a project usually represent four to six usability goals, measured throughout a project lifecycle.

> *'If you check our website about the results we have achieved, our case studies, results, there about thirty items which are 500% numbers. I want numbers, if I don't get the numbers, if I don't do it like this I won't get the numbers. To prove it, you gotta prove it, because people think this stuff is discretionary.' #16*

4.3.11 Usability team practices

The essence of this concept is that performance of usability in a team improves the productivity of usability outcomes. The best group size being two usability practitioners or a usability practitioner and another IS project team member. Usability teams of two allows for mentoring of novice usability practitioners. A usability team can bounce ideas around and discuss usability findings, while an individual practitioner must rely on reflection and self-evaluation, time permitting. Usability teams may need to establish credibility within an organisation with low usability maturity or rigid project lifecycles. Allocation of usability team resources needs to be done carefully by usability managers.

> *'From my experience, it works much better when two of you are working. You work much faster and you also, you are much more creative when you work with somebody.' #13*

5. Analysis

This analysis looked at comparing what was said by practitioners in various roles across the 27 usability concepts outlined in findings. The findings also describe in more details the concepts that form the basis of the analysis presented in this section. This will help understand, based on the role, what is more important or possible for a usability practitioner to focus on during their engagement in IS projects

The practitioner roles highlighted by this research include:

- Organisational based usability practitioners
- Usability Consultants
- Usability Managers
- Usability Practitioners

This research examines a number of comparisons to highlight key differences among the concepts based on the usability practitioners role, which will be discussed in the following sections.

5.1 Usability manager vs usability practitioner

When examining the interview data, each usability practitioner was coded as either a usability manager or a usability practitioner. The usability managers (twelve practitioners) were those who headed a team of usability practitioners, and whose role included managing and allocating usability resources to projects. The managers also, if in a consultancy company, may be looking for the next usability engagement, which requires usability selling. The usability practitioners (nine practitioners) were those who did not have usability manager responsibilities, and were focused on the performance of usability activities in projects, either as a usability consultant or an organisationally based usability practitioner.

Table 9: Usability manager vs usability practitioner, percentage of interviewees that discussed concept

Concepts	*Manager*	*Practitioner*
Crucial involvement by IS project team members	*100%*	*55.6%*
Skillset and experience of usability practitioner	*75%*	*44.4%*

There are two concepts that had significant (more than 30%) difference in the number of usability managers and usability practitioners that refers to it, as shown in Table 9. Both usability managers and usability practitioner discussed the importance of involving the IS project team members in the concept “Crucial involvement by IS project team members”. All twelve usability managers discussed the importance having the IS project team involved and understanding the usability value. It was predominantly discussed in the typical day (4 usability managers), good story (6 usability managers and 3 usability practitioner) and bad story (5 usability managers and 1 usability practitioner) during the interviews.

In the bad stories, the IS members involvement was low, usability ownership was questioned, vendors were part of the project and resisted involvement, understanding of the usability value was low and technological constraints were not understood. This was identified and discussed predominantly by the usability managers. In the good stories, IS project team members were involved, through observation of usability activities, or sharing the usability journey with usability practitioners, or being skilled up as usability practitioners by mentoring to be groomed as usability champions for project. Both usability managers and practitioners discussed this.

The concept “Skillset and experience of usability practitioner” describes the skills and experience required to achieve good usability activity outcomes. The usability managers, with their role as allocating usability resource, saw this as a crucial consideration when resourcing usability for a project. Being able to provide usability practitioners with appropriate skills and experience to provide usability value to a project given the project constraints. This concept was part of an internal relationship in the usability practice theme, which related to the concept about working in usability teams. The usability manager’s focus on these two concepts is clearly important, skills, experience and working in teams are key determinants used to help allocate usability resources to projects.

In summary, the usability managers see the importance of usability practitioners having a good skillset and experience base when engaged to perform usability in a project. Where needed, usability mentoring is a great way to improve usability practitioner skills. Usability managers are also more aware of problems with involvement, especially the need to get involvement from the IS project team members, to bring the technological issues (constraints) into consideration. The examination of the other concepts found little different between number of managers and practitioners that discussed them.

5.2 Usability consultant vs. organisational based practitioners

The comparison of usability consultants (eight practitioners) and organisational-based practitioners (seven practitioners), presents an interesting set of differences that may impact the usability outcome. There are six usability practitioners that had been in both roles, which for purposes of highlighting the concepts that have a significant difference (more than 30% of practitioners) have been ignored in this initial analysis, see Table 10.

Table 10: Usability consultants and organisational usability practitioners, percentage of interviewees that discussed a concept

Concepts	Consultant	Organisational
Usability activities compliance within a project lifecycle	75%	42.9%
Constraints dictate usability activity selection & performance	100%	57%
Technological constraints	50%	14.3%
Allocating resources to usability activities	100%	57.1%
Nurture usability understanding	62.5%	100%
Usability education of project stakeholders	37.5%	85.7%
Maintain flexibility with usability practice	75%	42.9%
Validation of Usability practice	50%	0%

Organisational-based usability practitioners did not discuss working within the organisation process as being problematic, because they are working within the same organisation structure and have a clear understanding of what is possible. The selection and performance of usability activities, and being flexible with performance of usability was not a highly discussed concept. The technological constraints are less of an issue, because working within the organisation they can have conversations and discussion to gain an understanding of what is possible with the appropriate IS project team stakeholders. The time and budget for a project can be discussed at the inception of a project when involved from the start where within an organisation is more likely. The nurturing of usability understanding and performing usability education can be done, when involved in the organisation because the usability practitioner is available from day-to-day to have conversations with the various project stakeholders. Working within the organisations provides an opportunity to take the usability mindset beyond the project to the organisations culture, to improve the usability maturity. Validation of usability findings by external usability consultants and limitations encountered by usability consultants were not discussed.

The usability consultants find themselves engaged into the project lifecycle at the specific points where their expertise is needed, which assumes a high level of usability maturity in the organisation and the project stakeholders. Project constraints have a huge bearing on what can be selected and performed as usability activities for project. Technological constraints have a larger impact due to the time and access needed to foster relationships with IS project team members. The time given and budget allocated also provide limitations on what can be done because often they are not engaged at the start of a project to have an impact on the project plan. The usability education of stakeholders is limited by their short-term engagements. The generation of usability documents is the main deliverable for their engagements, they are not judged on the overall usability outcome for a project. Due to the project constraints they find it difficult to be flexible with the performance of usability activities so they can maximise the usability findings generated. Often usability consultants will be asked to validate usability findings generated by internal organisation usability practitioners. They are more likely to encounter limitations that are out of their realm of control, in relation to the access to stakeholders (involvement), organisations usability maturity and organisational constraints (like legal issues or politics).

This discussion shows that these concepts can vary significantly in relation to the performance of usability activities by a usability consultant or an organisationally based practitioner. The main differences include the following topics:

- Level of access to project stakeholders
- Time when usability is initiated in a project
- Involvement in project plan at start of project
- Opportunity to change the usability mindset for project or organisation (beyond usability activities and beyond project)
- Traction with mitigating project constraints
- Selection and performance of usability activities

There are other differences between these two types of usability practitioners. For example, 100% of the usability consultants found the time and cost constraint concept along with the constraints dictating the selection and performance of usability as important concepts for consideration when engaged in a project to perform usability, where just over 50% of organisationally based usability practitioner said this. On the other hand, 100% of organisational-based usability practitioners discussed the opportunities to help nurture usability understanding to project stakeholders, where just 60% of usability consultants discussed this as important. The type of engagement a usability practitioner has with the project, as a consultant or an organisational-based practitioner, does present various constraints and relationship limitations in the performance of usability activities. The examination of the other concepts found little different between number of organisational-based and consultants that discussed them.

This section would suggest, based on the discussions, that organisational-based usability practitioners have a better opportunity to have a beneficial impact the project's usability outcome. Usability consultants are reliant on the usability maturity of the organisation, without it they're impact on the project's usability outcome can be significantly stifled by the various concepts discussed in this section.

The usability practitioners (mixed) that had been both organisational-based and consultant practitioners discussed most of the concepts discussed by both organisational-based and usability consultants. There was no value in looking at differences between mixed and organisation-based or mixed and usability consultants. It does not provide any significant differences.

5.3 Success and failure concepts

This section will examine the success and failure orientated concepts in relation to the usability practitioner roles. Table 11 shows the six top concepts which were discussed during a good story provided by usability practitioners interviewed.
Table 12 provides the top six concepts that had an impact on the usability income during the bad story discussed. This section will compare these against the roles of the practitioner.

Table 11: Success factors drawn from key concepts emergent from good story discussion

Success Factors
Involvement by all project stakeholders enhances the collaborative approach
Project stakeholder relationships must be fostered
Making usability real to create a shared vision for project stakeholders
Usability goals promote a usability mindset
Crucial involvement by IS project team members
Nurture usability understanding

Table 12: Failure factors drawn from key concepts emergent from bad story discussion

Failure Factors
Involvement by all project stakeholders enhances the collaborative approach
Organisational constraints external to project
Usability goals promote a usability mindset
Technological constraints
Create and follow the usability requirements
Project stakeholder relationships must be fostered

When examining the top concepts for organisational-based usability practitioners in comparison to the usability consultants, there are some interesting differences. Table 13 shows the four concepts that were common to both types of usability practitioners. These concepts are the major concepts that also appeared in the success and failure concepts (tables above, i.e. Table 11 and Table 12), except "Organisational constraints external to project" which only appeared in detrimental key concept list. Both organisational-based and consultants agree on the importance of fostering good relationships with project stakeholders, to enable good collaboration and involvement in project activities. This enables usability goals to be promoted and a usability mindset to be created. Collaboration also enables the elicitation and understanding of organisational constraints external to the project.

Table 13: Success and failure common key concepts for organisational-based vs usability consultants

Concept	*Organi-sational*	*Consult-ant*	*Success*	*Failure*
Usability goals promotes a usability mindset	*Y*	*Y*	*Y*	*Y*
Involvement by all project stakeholders enhances the collaborative approach	*Y*	*Y*	*Y*	*Y*
Organisational constraints external to project	*Y*	*Y*		*Y*
Project stakeholder relationships must be fostered	*Y*	*Y*	*Y*	*Y*

The interesting concepts are those that are different between organisational-based usability practitioners and usability consultants (see Table 14). These differences seem to suggest that usability consultants look to make usability issues real to project stakeholders. In order to gain credibility with project stakeholders they look to eliciting and measure usability goals and provide more quantitative measures with their deliverables. Their skillset has been applied to multi-domains and experience across a broader range of domains and stakeholders that enable a more flexible approach to performing usability in a project lifecycle that can maximise usability findings potential.

Table 14: Differences in top concepts for organisational-base vs usability consultants

Usability Consultants	Organisational-based usability practitioner
Making usability real to create a shared vision for project stakeholders	Usability team practices
Measuring usability goals	Nurture usability understanding
Skillset and experience of usability practitioner	Usability maturity requires transformation of the organisational culture

Organisational-based usability practitioners look to nurture usability understanding of project stakeholders. They look to create a usability mindset by improving the usability maturity of project stakeholder and the organisation. They also look to work in usability teams, of at least two people, to improve usability findings, and to allow for enough resources to perform usability activities and maximise their outcomes. The usability team approach allows for improved mentoring and education of project stakeholders to aide in the transformation of organisational usability culture and maturity.

The reasons for the different concepts would be based on the following: the length of an engagement, when engaged in project lifecycle, time given and monies allocated to usability. Usability consultants would be engaged for a specific set of activities, more often than not, at a particular point in the project lifecycle, which highlights the need for making usability issues real to project stakeholder and eliciting quantitative usability measures for deliverables. Organisational-based practitioners can potentially be involved from start of the project (till the end). This allows them from within the organisation to have the conversations that can nurture

usability understanding and develop a usability mindset for the project. The six usability practitioners interviewed that had been both an organisationally based practitioners and usability consultant also discussed the same four concepts in common with success and failure concept lists (shown in Table 13). In addition, they all described the importance of trying to transform the organisations usability culture and maturity that was discussed by organisationally based practitioners. They also discussed the important of involving IS project team members in usability activities like it was mentioned in the success concept list (Table 11).

Table 15: Key concepts discussed by interviewees that were both organisational-based and consultants (mixed)

Mixed usability consultant key concepts	Mixed	Organ-isational	Con-sultant	Success	Failure
Usability goals promotes a usability mindset	Y	Y	Y	Y	Y
Project stakeholder relationships must be fostered	Y	Y	Y	Y	Y
Organisational constraints external to project	Y	Y	Y		Y
Usability maturity requires transformation of the organisational culture	Y	Y			
Crucial involvement by IT project team members	Y			Y	
Involvement by all project stakeholders enhances the collaborative approach	Y	Y	Y	Y	Y

These mixed usability practitioners, corroborated core concepts that are of importance to the success and failure list of key concepts lists (i.e. Table 11 and Table 12). These also provided the key elements of the organisational-based versus consultant key concept list. This in essence reinforces the importance of involvement with usability by all project stakeholders, especially IS project-team members. It promotes the importance of developing and fostering project stakeholder relationships for a project to enabled the promotion of usability goals and an overall usability mindset for a project, where conflicting goals have been concorded in consultation with project stakeholders. The mixed usability practitioner's list of concepts was associated more closely with the organisational-based practitioners and the success outcome list of concepts.

6. Conclusion

This analysis presents the impact on usability outcomes through the lens of a usability practitioner's role within a project, i.e. organisational based or consultant engagement, usability manager or usability practitioner. This highlights the potential difference of practice in these roles, but also highlights what concepts become more prominent and/or important. This ultimately can be used, based on the type of engagement with a project a usability practitioner has, as a list of concepts that can guide practice and lead to an improved usability outcome. The various tables presented (in Section 5) provide this guide to help understand the impact on the usability outcome based on the perspective/role played by usability practitioners in an IS project. In summary, I propose the adherence to the following table, based on role performed in the IS project.

Table 16: Summary of Concepts as they relate to the usability practitioner roles

Key Concept for usability practitioners (All usability practitioners)		
Involvement by all project stakeholders enhances the collaborative approach	Project stakeholder relationships must be fostered	
Usability goals promotes a usability mindset	Organisational constraints external to project	
Usability Consultants	**Organisational-based usability practitioner**	**Mixed Usability Practitioner**
Making usability real to create a shared vision for project stakeholders	Usability team practices	Crucial involvement by IT project team members***
Measuring usability goals	Nurture usability understanding	
Skillset and experience of usability Practitioner***	Usability maturity requires transformation of the organisational culture	
***Usability Manager		

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