Technical Writing in Energy and Resources: Risks and Opportunities

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Abstract

Working as a technical writer on some engineering mega-projects within the Energy and Resources sectors, it is apparent that there is a potentially vast "undiscovered country" of opportunity for writers with the appropriate skill and mind sets. To this end, an exploratory study, under the banner of a two-way risks and opportunities assessment, was carried out with the help of stakeholders at all levels in the industry. Such an assessment is often used at the early stage of a venture to identify those issues of interest that are instrumental in driving the venture forward.

The central question in this study was concerned with identifying and exploring the risks and opportunities associated with using a dedicated technical communication resource on engineering projects in the Energy and Resources sectors. One recurrent theme emerged – that of promoting technical communication as a profit centre. Furthermore, many of the risks identified are largely culturally predisposed within the industry and are perceived as being (i) easily mitigated and/or (ii) massively outweighed by the benefits and opportunities of using a dedicated technical communication resource on a project.

In terms of "driving the venture forward", it is hoped that this study opens a path to the gathering of further research on writing in engineering sectors at the practice level. As such, it is hoped that writers and stakeholders will promote the message that good technical writing can substantially increase the asset base of engineering practices, much as this message has been successfully adopted in software sectors.

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1   Introduction

So, what can I say about being a technical writer in the Energy and Resources sectors? Or more aptly, what might be of value to this conference and to other technical writers? And what might leverage the status of technical communication in my industry: a world class engineering consultancy in the Energy and Resources sectors?

These were the somewhat nebulous questions in mind at the outset of this second gauntlet running experience – that is, a decision to present at the TCUK 2013 conference. Should I compose some reflective musings about my experience as a technical writer in engineering? No doubt this would be rich and insightful, but perhaps a little self-centred and of questionable immediate relevance outside. Should I interview some of the other technical writers in my company? Current figures reveal that of the 40,000 or so personnel engaged in my company worldwide, there are 17 technical writers – and most of them are in USA and Canada.

My final decision was rather creative, but with hindsight it has turned out to be highly strategic and with resonant implications in other writing fields. I would conduct a two-way risks and opportunities assessment about technical writing on major engineering projects. Implicitly, I would place myself as one of the major parties under investigation.

It is fair to say that most people know what a risk assessment entails, at least at an instinctive level. It is about eliciting and discussing "uncertainties" (or "hazards") and then assigning a value or likelihood of the subsequent "risk". Less up front is the "opportunities" aspect of risk management. Actually, it is not just about mitigation and risk-mongering, but it is also about identifying and exploring genuine benefits (Hillson, 2002). As an extension, risk and opportunity assessments are often used as inputs to economic and macroeconomic analyses, where hitherto non-technical aspects may be monetised and elevated to the important strategic status of being tangible assets.

2   The "Undiscovered Country"

A moment should be spent talking about engineering consultancies and the Energy and Resources sectors. On one hand, the metaphor of James T Kirk calming a kingdom of marauding Klingons in the movie Star Trek VI: The Undiscovered Country is relevant and is my first gauntlet running experience – that is, I have made a conscious decision to pursue writing work in this field. This is, however, a substantially "risk-oriented" perspective. Engineering consultancies comprise many knowledgeable and talented people whose main focus is to generate project deliverables. Anyone below par does not last, especially under budget constrained (risky) lump sum contracts. Therefore, what place do non-specialist, budget eating troublemakers (i.e. technical writers) have in this field? What possible useful contribution can they make?

On the other hand, the most important project deliverables are, not surprisingly, written reports[1]. Thinking about it, this presents a potentially vast "undiscovered country" of opportunity for technical writers, and this thought is one of the major implicit drivers for this study.

My experience is that the quality and integrity of writing in engineering is variable – and this is an understatement. There are some excellent writers who know how to use templates and styles, and can apply language with skill and precision. It is likely that these people have had some training in technical writing as part of their engineering education[2]. At the least, they may have had very good editors – the process of having one's work redlined substantially is a very useful exercise in itself. I would surmise further that these engineers tend to do well and climb the management ladder if they desire it. Conversely, there are some engineers who frankly cannot write for toffee. They can visualise and design beautifully elegant processes, systems and plants, but, well you know how it is… It all falls to pieces when they put pen to paper and try to get it down in narrative form. I have even had one who wrote an entire procedure in capital letters.

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[1] On a typical mega-project generating 5200 deliverables, around 2200 are written reports; the rest are drawings, specifications, calculations and so on.

[2] Davis, 1975 and Narayanan, 2010 for example point to a wealth of literature highlighting the importance of technical writing education for engineering students.

On entering this field, technical writers may be utilised in tasks such as generating and maintaining templates, some marketing/presentation work and general secretarial duties. If you are really unlucky, you end up stuck in document control. If you are luckier, you may contribute to and police the house style guides. So far, this kind of work is tolerated by the "marauding Klingons" because it does not step on their toes.

Crossing the line into specialists' territory, if you are luckier still, you will get the opportunity to sub-edit current work. If you are really lucky, you will take ownership of study reports, or you will manage the preparation of large reports authored by multiple specialists (this was the role I was taken on for originally). Table 1 lists some of the more "juicy" report opportunities one may be involved in, the types of reports with plenty of narrative, data, cross-references – all the kind of stuff we writers like.

Table 1 "Juicy" Reports: Opportunities at the Outset

Strategies	Philosophies	Decision Papers
Design Basis	Guidelines	Method Statements
Plans	Procedures	Standards
Scopes of Work	Specifications	Technical Studies

Consider then that a typical project in the Energy and Resources sectors (mining, power, oil, gas, macroeconomic analyses) will be divided into many topics or disciplines. Table 2 gives a snapshot of the breath of subject specialists engaged on a project.

Table 2 Typical Engineering Mega-Project Topics/Disciplines

Assurance and Governance	Infrastructure	Product Laboratory Testing
Business Organisation	Insurances	Procurement and Supply Chain Management
Capital Cost Estimating	Investment Opportunities	Quality and Integrity Management
Commissioning	Legal	Regional / Local Content
Communications (ICT)	Manufacturing	Risk Management
Construction	Market Analyses	Schedule and Planning
Detailed Engineering Design	Operations Management / Mobilisation	Stakeholder Analyses
Geology	Operating Cost Estimating	Strategy
Health, Safety and Security	Permitting	Sustainable Development / Environment
Human Resources	Process Engineering	Testing and Inspection

Consider also that each topic/discipline in Table 2 may be broken down further. The Sustainable Development / Environment discipline may be divided into 22 sub-topics including air quality, greenhouse gas emissions, noise and cultural heritage. Then, transcending the disciplines are the project execution plans[3], executive summaries, policies, white papers and a need for a good dose of interface management[4].

Thus the message at the outset is that projects in the Energy and Resources sectors present a large range of discipline opportunities. They also present opportunities for good writers.

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[3] Writers of project execution plans probably occupy one of the most challenging and satisfying roles in that they need to know something about all the disciplines and will engage with specialists from all the disciplines.

[4] Technical writers are implicitly interface managers as they will have high level knowledge of all aspects of the project and can ensure the "left arm talks to the right".

3   Study Aims and Objectives

The aim of this study was to identify and explore the risks and opportunities associated with using a dedicated technical communication resource on engineering projects in the Energy and Resources sectors. The first "party" in the study was the "technical writer" or a "dedicated technical communication resource" comprising one or more specialists in technical writing. The second "party" was the "engineering project" which may be a joint venture, a company department or a body of work. In any case, "the project" embodies your client and any relevant stakeholders. As such, Figure 1 visualises the flows investigated in this study. Namely:

1.   What are the risks that a technical writer poses to an engineering project?

2.   What are the opportunities that a technical writer presents to an engineering project?

3.   What are the risks that an engineering project poses to a technical writer?

4.   What are the opportunities that an engineering project presents to a technical writer?

**Figure 1 Representation of a Two-Way Risks and Opportunities Assessment**
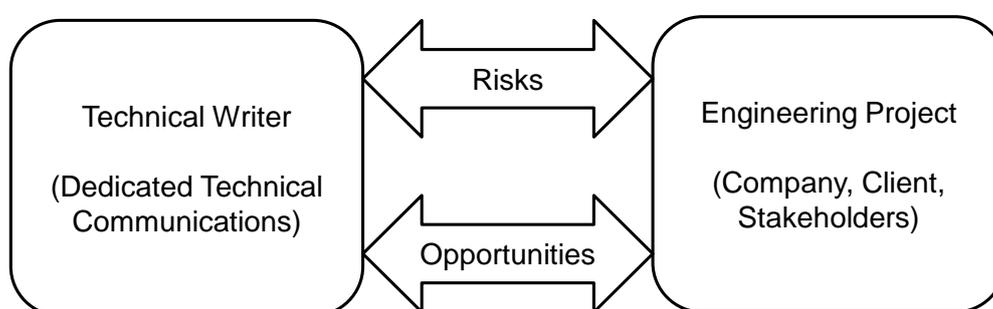
The limit of the study was to identify a wide range of "uncertainties", let some categorisation emerge, tabulate according to 1-4 above and then carry out some discussion of the elements elicited. This was done with the involvement of stakeholders from all levels in my company and beyond, from graduate, to director to client.

4   Software Writing as a Profit Centre

Outside of my working field, additional inspiration for this study comes from the growing body of work concerned with demonstrating that technical writing in the field of software development needs to be and can be demonstrated to be a profit centre. This is another one of the implicit drivers for this study (I come clean and admit this is a conscious bias). From the literature:

Redish (1995) is seminal in flying the "added value" flag and highlighting those non-commercial elements of value a writer may bring. Blackwell (1995) presents quantified case study evidence demonstrating an increase in customer satisfaction and decrease in help desk calls as a consequence of good writing. Houlihan (2009) arguably presents one of the strongest quantified studies to date in highlighting improvements across 165 surveyed companies. The study also makes compelling recommendations to anyone wishing to succeed in making technical communications a profit centre.

Arguing that technical writers cost too much is tempered with the help of the "see-saw" concept by Jacquie Samuels of Writing Assistance (Figure 2), in that a small amount of initial expense can save a massive amount in the long term.

Figure 2 Writing Assistance's See-Saw Cost Argument
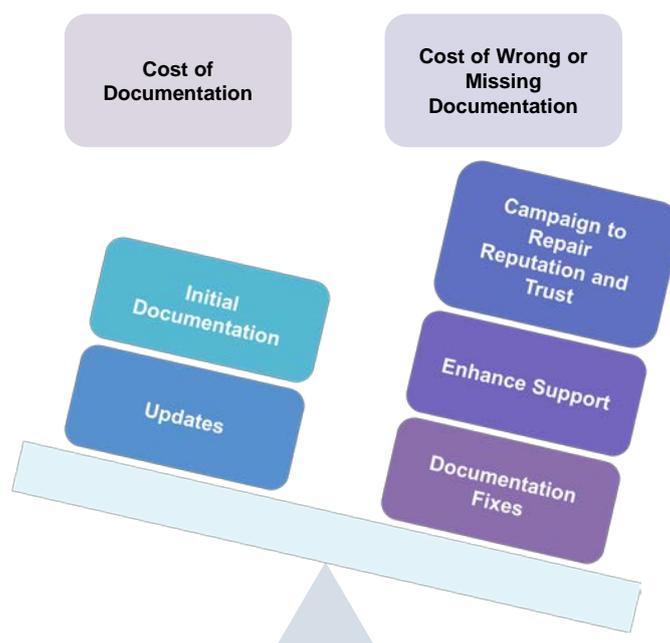
5   Risks, Opportunities, Monetisation, Why?

Risk and opportunity studies are often the first things undertaken on a project, engineering or otherwise. Typically, technical and non-technical risks are identified and measures to mitigate risks and maximise opportunities are developed over the project life-cycle.

Such studies are also important first steps in financial analyses where it is not only the obvious measurable factors that are highlighted. Special emphasis is often made on defining those non-technical risks which, according to a 2008 Goldman Sachs study, represent the most prevalent cause of project delay. Risks and opportunities are often treated in sufficient detail to allow the scale of the study to be quantified in the next step of the monetisation process in these cases. Conceptually, such an assessment is intended to produce preliminary results that identify the key risk and opportunity drivers for project value (e.g. asset definition), in order to inform decisions about how, or whether the project proceeds (WorleyParsons, 2012a, 2012b).

To illustrate the case, Hardisty (2009) presents an economic model for assessing the benefits of environmental and social protection. He describes and measures sustainability in economic terms, by, explicitly monetising the external costs and benefits as is possible and appropriate and adding these to the conventional internal or private costs and benefits of a proposed project or action. The Environment and Security Initiative (ENVSEC, 2002) are seeking to link environmental issues with national security in Central Asia. In these water-sensitive areas, the thesis is that "strengthening key institutions, developing policies favouring cooperation and a sustainable and more equal economic development" will not only mitigate the water problem, but enhance security.

As such, this current study seeks to be a first step in an on-going process that could be of substantial value to engineering writers and potentially to other writing fields.

6   Study Method

Risk and opportunity studies usually employ an initial framing workshop whereby all stakeholders attend and are giving the opportunity to contribute to the process. The workshop usually comprises a "brainstorm" of all the risks and opportunities participants can think of, with varying degrees of pre-determined structure used as prompts to set the creative juices off. The workshop may proceed to discuss and refine the uncertainties elicited. Uncertainties may be categorised – else this is done afterwards by the facilitator. The workshop process is thus an inherently qualitative method.

For various reasons, mainly logistic, in this study, a single workshop was replaced by a series of one-to-one exploratory conversations between myself and the participants. Upon securing agreement to

take part, the study participants were given a prompt sheet as shown in Appendix A, usually one day prior to the one-to-one conversation. During the conversation, the prompt sheet was used as a stimulus to elicit risks, opportunities, discussion, mitigation and anything else that might emerge and be of value to the study. The process of data gathering was thus:

1. Participant told about the research, its background and intentions

2. Participant agreed to take part

3. Participant given the prompt sheet one day in advance

4. One-to-one conversation held where participant was encouraged to speak freely and elicit anything they can about risks, opportunities, discussion and mitigation

5. Participant or myself wrote down the emerging uncertainties for subsequent analysis.

Data analysis was carried out by myself, outside of the one-to-one conversations. This involved studying the "raw" data and looking to see if any common themes or superordinate categories emerged. Then, linking further instances into the categories until saturation occurred (i.e. subsequent participants elicited things you have already heard). Also, subsequent looking over all the data to see if any new categories emerged. Occasionally, a real gem or oddity would emerge… Again, the data analysis was an inherently qualitative process.

7 Study Participants

I am up front in admitting that the study participants were a "home crowd". In this, I mean they were people I have worked with and get on with. The participants comprised nine discipline specialists from across the spectrum, from graduate to director level (Table 3). Participants were from my own company and from two clients – whose workforce will typically occupy the same office space during a project.

Table 3 Study Participants

Name	Role
Dionne	Risk and Economics Manager
Matthew	Senior Climate Change Consultant
Kate	Graduate Engineer
Ceren	Graduate PSCM Specialist
Frank	Mega-projects Director
David	Engineering Manager
Sanjay	Process Engineer
Jose	Construction Manager
Scott	Regional Economics Director
Dr Robert Illes	Senior Technical Writer

Note: participants' names and adjusted to hide identities; gender and ethnicity preserved

8 Methodological Underpinning

Starting from the ground, the ISO 31000 definition of risk management contains the identification, assessment and prioritisation of risks. The standard is also up front in stating that any risk management process should be tailored to the relevant particular circumstances (echoed in del Caño and de la Cruz, 2002). Covello's and Allen's (1988) seven cardinal rules of risk communication place the stakeholders in a central position with respect to communicating risk activities. It is argued here

that this philosophy should extend to the whole risk assessment process, much as technical writers continually abide by the maxim "write for your reader".

A traditional but wholly useful process of risk assessment may encompass identification of causes, events and consequences. Risk level probability may be computed as categoric "low", "medium", "high" and "extreme" and/or provided as a list of priority. The distinction between a hazard and the potential risk it may pose is ubiquitous. However, the aspect of "opportunity" is often only an implicit part of the process. Hillson (2002) is considered seminal in promoting the "upside" of risk. The term "hazard" is replaced with a more generic "uncertainty". Hillson thus speaks about analysis of "uncertainties that are of benefit", or "opportunities" in simpler language. Furthermore:

> "[The] paper argues that an integrated approach to management of both threats and opportunities can ensure that unwelcome negative effects are minimised while at the same time maximising the chances of exploiting unexpected positive effects". *Ibid.*

The academic debate continues to consider whether risks and opportunities should be managed together or separately.

The stance taken here on these methodological issues is captured below. This study:

1. Utilises a very specific method that has had prior use in many proprietary and some third party studies: elicitation, categorisation and discussion of uncertainties under the banner of a two-way risks and opportunities assessment.

2. Uses the term "uncertainty" to embrace an issue under investigation (which may turn out to be a risk and/or an opportunity).

3. Manages risk and opportunity as essentially integrated at the outset. The only distinction at the method level is that some additional discussion is presented on how any identified risks may be mitigated.

4. Treats causes, events and consequences in the "flow" of the narrative discussion i.e. they are not separated under the scope of this study.

Elicitation of "uncertainties" is, at the outset, an inherently qualitative exercise. Using a limited number of participants[5] and coming into the study with a clear set of intentions and biases places the study firmly under the umbrella of a qualitative methodology. Techniques such as coding, the constant comparative method and saturation are useful and well underpinned as rigorous elements of the emergence of theory in a qualitative study (after e.g. Glaser and Strauss, 1967; Lincoln and Guba, 1985). Note the focus is that knowledge and theories emerge from the data – it is not about testing data against a prior theory. This is an important characteristic.

However, the implicit aim of risk and opportunity assessment is never elicitation *per se*. The aim is always a change in behaviour from strategic level to ground level or vice versa. In this case, the activity has much in common with action research (after e.g. Lewin, 1952; Carr and Kemmis, 1986). A problem is observed (e.g. variable quality of writing on engineering projects); the elicitation and definition of more facets to the problem is done in an attempt to solve the problem with and for stakeholders.

And so on. To prevent banging one's head on the metaphorical shale bed between the disused oil well of constructivism and the saline aquifer of critical research, the discussion on methodology will end here. In the "coming clean" spirit of qualitative methodology, a summary of the particular circumstances specific to this study follows:

Context and "battery limits"

- A number of engineering projects in mining, oil & gas and strategic analysis conducted by a world class engineering consultancy in London, UK.

- Participants (stakeholders) ranging from graduate to director level both within the engineering consultancy and its clients. "Home crowd" comprising professionals I have successfully developed a good working relationship with.

- Risks and opportunities elicited and discussed are at "project" level i.e. they are of direct practical relevance to a project, rather than being at a strategic or operational level.

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[5] A "home crowd" and generally pro- technical communication.

- This study ends with the elicitation, categorisation and discussion of risks and opportunities i.e. no further likelihood classification (e.g. low, medium, high, extreme) or quantification is carried out here.

Implicit drivers

- Writing within the Energy and Resources sectors occurs over a vast set of disciplines (and a lot of it is done).

- The promotion of a dedicated technical communication resource on engineering projects.

- Successful technical writing in software can be proven to be a profit centre.

What's in it for stakeholders?

- The method is inherently about defining consequences for the project.

- Debriefing comprising this report and presentation.

- New and enhanced knowledge about how technical communication can benefit the project.

- New and enhanced knowledge: awareness of and how to mitigate risks concerning technical communication.

What's in it for me?

- Kudos that comes with another piece of published research.

- Creation of a little piece of new knowledge in a new field.

- Enhancing my practice.

9   Summary Findings

From the discussions with the study participants, the uncertainties elicited found themselves naturally categorised into the following:

- **Financial:** aspects such as cash flow and budget.

- **Expertise:** is it appropriate, how it will affect the work generated.

- **Project Efficiency:** schedule, need for training, communication.

- **Reputation:** how it can be damaged or enhanced.

Table 4 captures the essence of the potential risks and opportunities to the project. Table 5 does likewise for the writer or writing team. A full exposition of the risks, opportunities and mitigations categorised as above is contained in Appendix B.

Table 4 Summary Areas of Risk and Opportunity to the Project

	Risks	Opportunities
From the Technical Writer to the Engineering Project		
Financial	Cost, perception of a cost centre	Increased profits in the long run
Expertise Level	Lack of relevant knowledge and view point Unknown skillset at outset	Training New concepts in writing Reader focus Scope a writer can be used for
Project Efficiency	Training (writer & SMEs) Technical writer ownership	Good standardised reporting Drive schedules, on time, on budget Natural interface management
Reputation	Company perceived as expensive Conflicts of interest,	Leverage an expertise centre Quality Mitigate communication breakdowns due to poor reporting

Table 5 Summary Areas of Risk and Opportunity to the Writer

	Risks	Opportunities
From the Engineering Project to the Technical Writer		
Financial	Sporadic income	Contractor income Stable income in a proven profit centre running concurrent projects
Expertise Level	Out of depth specialist knowledge Being given an unclear scope	Learning new knowledge Chance to micro-niche
Project Efficiency	Induction Timing of work Developing working relationships	Developing working relationships
Reputation	Damaged in produced unfit work Having too much work	Be an expertise centre

10   Discussion

Financial

The first issue to emerge is that technical writing costs money. Someone has to pay for it. However, engineering consultancies are somewhat unique in the way they are financed. Nobody in my company likes a department or individual that costs money. The last five years of economic uncertainty have hit the final nail in the coffin for high overheads or even any exposed unjustified overhead. However, my company will be happy for you to stay SO LONG AS YOU ARE ON A PROJECT. The reason is simple, when you are on a project, the client pays…

How does this pan out for the writer? Great so long as there is a project or better still, a number of concurrent projects. Writing activity on a project usually follows a classic smiley curve: a writer is usually busy at the beginning of a project when templates and contents are set up. There is a lull in the middle followed by a frantic end when everything come in. This does not make for a stable life, but with a bit of careful and savvy planning, one can maintain regular, full working weeks.

Expertise Level

Uncertainties classified under "Expertise Level" were quite prevalent i.e. this issue was of concern to most participants. In risk terms, it was about the uncertainty of what non-specialist writers may bring to a project initially, especially if they are off-the-street so to speak. This could be a lack of relevant engineering or project management knowledge, a perspective that is wholly discordant with the project (e.g. formatting these bullet points REALLY matters) or having the wrong focus. The upside is that the project will benefit from superb reports.

For the writer, being out of one's depth and being given an unclear scope weighed down against the chance to learn and develop some really good new stuff. The extension of this would be the chance to possibly micro-niche.

Project Efficiency

The "Project Efficiency" category tended to swing equally between risk and opportunity on issues such as meeting schedule or not, the need for training of both the writers and SMEs, developing good or bad relationships and ultimately a need for watertight communication channels between writers and SMEs.

Reputation

Again, the "Reputation" category revealed a swing between risk and opportunity in that good writing will enhance a project's and writer's reputation, whereas bad writing, for whatever reason (unclear scope, inappropriate writer experience), will damage it.

Emerging Gems

Two emerging elements caused me to really stop, think and challenge my assumptions and life and writing:

> Is a writer always focused on the reader, despite our axiom "write for the reader"?

Writers like to think they are focused on the reader, always. However, on an engineering project, typically those smaller projects looking at investment opportunities, sometimes on behalf of governments, it is the SME who engages the client. The writer may never speak or meet with the client. Therefore, in this case, how can the writer claim to be close to the expectations of the reader?

> How safe is a writer? Especially in view of the BP Algeria hostage incident and others.

This one took me by surprise, especially considering that most writers work in back offices, far from drilling or mine sites. However, the point is relevant when one considers that a writer, just like any project engineer, is a party to complex and often confidential information. Health, safety, *security* and environment (HSSE) is the latest acronym and is often the longest section in a report (along with "Sustainable Development"). However, in the case of BP Algeria, whereas a processing plant is usually designed with strict security measures in place, the same is not often the case with regard to the workers' residential complex.

Risk Mitigation

For the risk elements elicited, participants were asked to think about how they may be mitigated at the outset. Rather than yield blanks, participants were always able to generate means to nip potential risks in the bud. Some salient examples are presented in Table 6 (see full list in Appendix B).

Table 6 Risk Mitigation

Risk	Mitigation
Uncertain writer prior knowledge	Interview the writer, provide a very clear brief of the type of prior knowledge required
Sporadic writer income	Work 2 or more concurrent projects
Frustration at being given an unclear scope	Develop good communication channels and take on a role suitable to your skillset
Project producing not fit for purpose work	Communication… Appropriate skillset…
Project will not take a writer on due to the cost	Demonstrate, with a body of prior experience, that good writing will enhance the quality of work on a project, bring it in on time, on budget and thus show that it is a profit centre

11   Conclusions

Having now identified a range of risks, mitigations and opportunities within the broader realm of using dedicated technical writers on an engineering project, what can we learn? Furthermore, what can be of use to the practice of technical writing and what can we do to directly leverage these findings in the engineering consultancy industry now? These are the questions that now emerge from the emerging results (no pun intended – this is highly concordant with the qualitative approach). In answer to these questions:

> Identified risks have counterparts as opportunities and vice versa – there is always this two-way relationship.

Broadly speaking, anything perceived as a risk can be easily turned round and framed as an opportunity. The case of maintaining the project schedule exemplified this.

> Identified risks are usually able to be mitigated or outweighed by potential later benefits.

Even if a long list of risks is identified, it does not require much thinking to come up with mitigations, which can quickly turn the risks around into opportunities. The case of a writer's prior knowledge exemplified this. I made an initial assertion that this field presented a vast "undiscovered country" of opportunities for writers with the appropriate skill and mind sets. The usual writer mind set prevails in this industry: good communication skills, ability to build rapport with SMEs, ability to interface across all areas of the business. Recall Table 2 and the list of typical disciplines: there is opportunity for the all-rounder or someone who has a high level knowledge of all the disciplines – such a person would be good at managing execution plans and feasibility studies. There is opportunity for writers who come in from a specific discipline e.g. contract writing. There is opportunity to develop a discipline and micro-niche – in this case, the boundary between an SME and writer becomes blurred.

> Risks are usually relevant to the scene and thus culturally disposed (e.g. engineers worried about non-specialists messing up their work).

It is acknowledged that this study was a small snapshot of the universe, laden with my own biases and viewed through the experiences to hand. It is in this sense that I say the uncertainties elicited were culturally disposed – indeed an engineering project can feel like a small company, a small band of warriors with a task to hand. As such, the comradeship and rapport is very idiosyncratic to each project as it is dependent on individuals. This can be visualised as a risk i.e. you never know how it is going to be with the writing on the project, or as an opportunity i.e. you can be pretty sure you will be needed.

Writers stand a better chance of their discipline standing as a discipline if it is a profit centre i.e. develop a body of evidence that engaging good technical resources enhances the quality of project work and brings it in on time and on budget.

The rules of good marketing prevail – good work generates good testimonials, raving fans and repeat business. Houlihan's (2009) recommendations for writing as a profit centre are now re-iterated along with a slight redrafting of Writing Assistance's "see-saw" in a manner now highly relevant to this industry (Figure 3). This is the first step to presenting a business case for a dedicated technical communication resource.

Figure 3 Cost Argument See-Saw Revisited
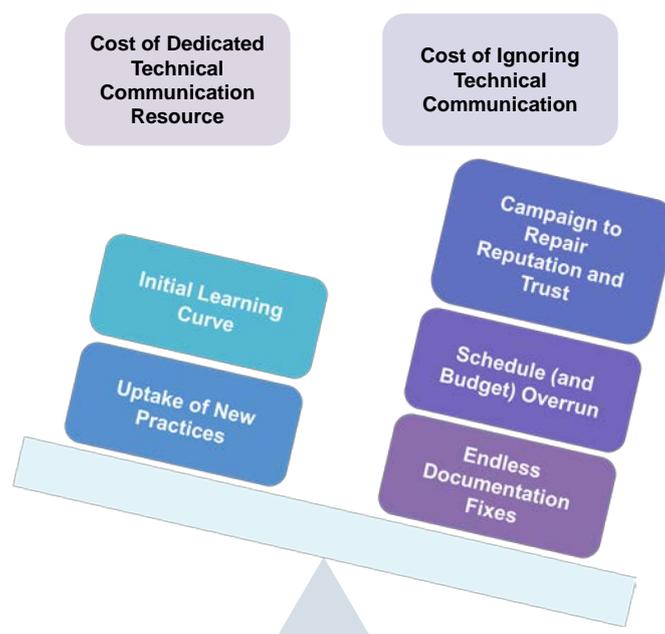
12   Study Evaluation Post-TCUK Conference

In the spirit of qualitative methodology, I have attempted to come clean as far as possible about the idiosyncratic nature of the setting of this, a small scale study involving a small number of participants. Such a study can never be scientific and will be full of biases, both in the nature of the data gathered, its analysis and the baggage I bring in drawing conclusions. What this lacks in control, is made up a hundred-fold in terms of the richness and depth of the insights gained. As such the decades old debate surrounding qualitative and quantitative methodologies rests.

Further improvements and/or further studies of this nature may involve:

- Exploiting the synergy of a proper, single risk and opportunity workshop with all participants.

- More participants, more data saturation, more or refined categories, more gems.

- Other people carrying out the same study – different baggage brought to the study.

- Securing a non-home crowd set of participants (if this is possible).

- Full risk study cycle - take it through to a proper risk workshop with quantified risk evaluation, matrices, prioritisation, generations of "top-ten" and so on.

At the time of writing, I pause to reflect on having presented this study at the TCUK 2013 conference. It is fair to say that the ISTC comprises, in the majority, professionals working in the fields of computer software and hardware. I know there are engineering writers out there, but my experience is that they tend to keep quiet. As to why? This could be the basis of another study, but not today. I was thus very conscious of coming clean about the setting of this study and cautious in saying that the knowledge generated came from a microcosm of my making.

Then another thing hit me – there seemed to be a unanimous feeling that the risks and opportunities identified in this study also had resonance with writers working in software! My intention to extend the study into other areas had already occurred in the minds of some of the conference delegates.

13 A Business Case for On-going Writer Engagement

A few moments will be spent thinking about how this study may be used, now. The following are offered as elements which could be used in a business case to promote the status of good technical communication in the Energy and Resources sectors. With a little adjustment, they could apply in other sectors. Either way, I hope to be back soon to let you know how it all turned out.

Reader Focus

- Technical writers focus on the reader at all times.
- Good writing encourages the reader to carry on reading.
- Do engineers understand the design/product the best?
- Specialists may be good within their field and to their peers, but are they experts at communicating outside to non-specialists?

Optimise Project Efficiency

It's about more than good writing skills:

- Problem-definers, problem-solvers.
- Management of the writing process.
- A resource to find other resources.
- Getting the message across clearly.
- Appropriate detachment.

Drive Schedules

- Technical writers like to write and edit, specialists generally do not.
- Precise about concepts and terminology.
- Mitigate tortuous language BEFORE it reaches the client.
- Significantly reduce the backdraft/review cycle.
- "Let each act according to their best destiny".

Drive Profits, Add Value

- Add value to the business in multiple ways.
- Enhance all aspects of current operations.
- Reduce unnecessary support.
- Save money in the long run.
- Be more than an engineering consultancy.

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15   About the Author

Dr Robert Illes is a Senior Technical Author with extensive experience in writing, editing and managing large document projects to include: technical studies, feasibility study reports, academic publications, industrial quality procedures, mega-project proposals, hi-tech equipment manuals, white papers, patent applications, EPC contracts and training courses.

He is a PhD level physicist with excellent written English, mathematical and visual presentation skills. He is a significant contributor to methodologies and practices in the field of technical studies and reporting.

Ten years' R&D management experience in numerous turn-key projects, liaising with UK and international clients, follow ten years' academic experience. He has experience in the following sectors: engineering/manufacturing, lighting, outdoor media and recently hi-tech, M2M, and energy and resources. Dr Robert Illes considers himself highly structured and objective driven in his approach to work. He relishes in applying fine attention to detail while keeping the large, strategic picture in view at all times.

Dr Robert Illes is currently developing a niche in providing expert technical communication services and development in the Energy and Resources sectors.

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Appendix A   Participant Prompt Sheet

Technical Writing in Energy and Resources:
Risks and Opportunities
Participant Prompt Sheet and Data

A paper to be presented at the TCUK 2013 conference in Bristol by Robert Illes
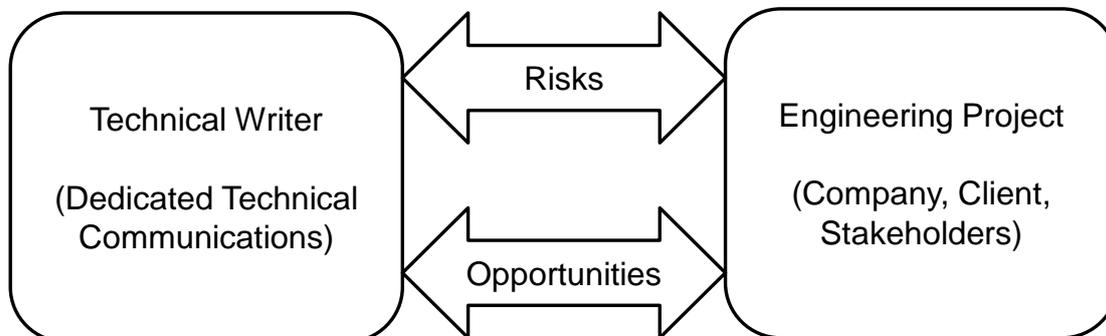
What do you see as the risks and opportunities associated with using a dedicated technical communication resource [i.e. technical writer(s)] on engineering projects in the Energy and Resources sectors? Brainstorm and fit your ideas into a matrix as below.

Participant Name:	Date:
Role:	

FOR THE PROJECT (from the technical writer to the project)		
Risks	Comments/Expand	How to Mitigate?
E.g. Expertise	Level of expertise not deep enough	Hire a writer with an engineering niche
Opportunities	Comments/Expand	
E.g. Impeccable reports	Good grammar, formatting, presentation	
FOR THE TECHNICAL WRITER (from the project to the technical writer)		
Risks	Comments/Expand	How to Mitigate?
E.g. Frustration	When reports do not meet expectations	Clear communication
Opportunities	Comments/Expand	
E.g. Learning new material	Exposure to vast array of discipline knowledge	

Appendix B   Detailed Findings

1. FOR THE PROJECT (from the technical writer to the project)		
Risks	**Elements**	**How to Mitigate?**
Financial	Cost – additional drain on budget, perception that tech comm is a cost centre	Hire on a needs basis, draw on demonstrated knowledge that it is a profit centre
Expertise	Lack of relevant depth of knowledge in relevant disciplines	Interview and hire the right person with:1) engineering background 2) English skills 3) common sense
	Insufficient understanding of the scope, wasted time in reworking non-fit for purpose work	Establishing positive and effective communication channels, patience for all parties
		Communication…
	Differing points of view or focus on what is important	Interviewing, communication
	Unknown skillset at point of hire leading to either underuse of writer or highly divergent results	
		Communication. Allow writer to engage clients/stakeholders
	Lack of engaging all stakeholders (typically the SME engages with stakeholders and the writer writes) Is the writer adequately focused on the reader?	
Project Efficiency	Need for training (both the writer in the ways of the project and SMEs in the ways of the writer)	Small initial pain for larger gains
	Technical writer ownership – potential bottleneck if writer has to review every document	Train others in the ways of the writer; let writer focus on those big, important documents like executive summaries
Reputation	Conflicts of interest – exposure to highly confidential data	Learn the principle of Chinese walls
	Company X perceived as expensive due to lavish use of "non-essential" personnel in expensive locations	Hire a writer on a "needs basis" or make tech comm a profit generating centre

2. FOR THE PROJECT (from the technical writer to the project)	
Opportunities	**Elements**
Financial	Increased profits – save money in the long run as project is demonstrably on time, on budget, producing quality work
Expertise	Realisation of what we can use a writer for: scopes of work, feasibility reports, execution reports, end of project reports
	Writer can revitalise a study with a fresh approach; organise data in innovative ways
	Writers focus on the reader, not their line manager or some piece of engineering
Project Efficiency	Making all documents standardised, fit for purpose, up-to-date, consistent and useable across all disciplines
	Can help project be on time, on budget, reduce burden of SMEs; so long as engaged EARLY
	New approaches streamline project practices, are reusable, driving schedule; generally improve the quality of project work
	A writer is a natural interface between SME disciplines and with clients
Reputation	Leverage good writing quality as an integral part of why the company should get the work
	Mitigate communication breakdowns over documents being rejected at the outset

3. FOR THE TECHNICAL WRITER (from the project to the technical writer)		
Risks	**Elements**	**How to Mitigate?**
Financial	Sporadic work if hired on a "needs basis" – usually busy at beginning and end of a project with a lull in the middle. Field not seen as desirable due to very short contracts Risk to one's safety in certain environments if known to be a party to sensitive data	Run a couple of projects concurrently Need for the best in security
Expertise	Frustration in being given an unclear scope. Out of depth. Is a journalism specialist qualified to "own" a mining feasibility report?	Communication… Choose a role concordant with your knowledge. SMEs still "own" the reports, writer is more sideways integrated
Project Efficiency	Whether one will develop good working relationships with SMEs	Communication and persona
Reputation	Producing not fit for purpose work Being too good and having too much work	Project must ensure skillset is appropriate, writer should apply for relevant roles Argument for a dedicated centre/department

4. FOR THE TECHNICAL WRITER (from the project to the technical writer)	
Opportunities	**Elements**
Financial	A lot of "last minute opportunities" Potentially high earnings if sustained over concurrent projects
Expertise	Learning a lot of new knowledge, new management styles, consolidating and enhancing one's practice Chance to micro-niche, become a micro-expert
Project Efficiency	Develop long lasting great synergistic working relationships
Reputation	Networking and being able to use skills on other projects Become known and revered as a centre of technical communication excellence Good reputation = good flow of steady work