Learning from Information Systems Failures by Using Narrative and Ante-narrative Methods

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Abstract

We see, know and experience information systems development failures in many domains and in many countries. This paper will explore some of the issues related to the study of these failures. Every year, billions of dollars are wasted on failed projects. The paper will emphasise the fact that the study of failures can only take place post-hoc, once a failure has been identified. Preparation is therefore different to normal scientific study where a situation is pre-selected in advance, the precise parameters are identified and decisions are made about the best methods for measuring them accurately and objectively. The literature reveals that researchers and practitioners have been experiencing projects failures for many years. Indeed, acknowledgements of failures go back at least thirty-six years. However, failures are still a prevalent problem. A significant obstacle related to the study of failures is the lack of acknowledged research methods for understanding such complex phenomena. The evidence collected during failure investigations emerges from a variety of sources, perspectives and contexts. Not surprisingly, it often appears to be ambiguous, incoherent and confused. The information collected tends to be rich, messy, contradictory and subjective. Such situations call for a new repertoire of methods to address the unique features of failures. This paper will introduce possible alternative ways of looking at and constructing failure stories. The techniques described below come under the umbrella term forensic analysis. The insights obtained from forensic analysis can be used for internal learning within organisations as well as externally within the discipline, thereby enabling practitioners worldwide to benefit from the mistakes of others.

Keywords: Information systems development failures, forensic analysis, case studies, case histories, context, narrative methods, antenarrative methods

Computing Review Categories: K.6

1 Introduction

Every year billion of dollars are wasted on failed IT projects. The media is awash with reports of regular losses in the IT industry because software projects: are not delivered on time; are over budget; don’t meet the expectations of users; or are of questionable quality. Most IT practitioners have experienced project failures at first hand and many researchers have studied the phenomena for a number of years to come up with different sets of reasons and factors purporting to influence the success or failure of projects. However, it seems that the ultimate solution is yet to be found.

The first indications of the problem and the mention of the term ‘software crisis’ were made during the NATO conferences in 1968 and 1969 [20, 5]. Indeed, conference attendees reported a set of symptoms that would strike a cord with developers and managers today. Twenty-five years ago a GAO report in the US [1] showed that there were serious problems in the development of software. Less than 2\% of the total value of contracts could be used efficiently as delivered. 3\% could only be used after changes. The rest of the projects had the software delivered but never successfully used; the software paid for but not delivered; or the software used but extensively reworked or later abandoned. These problems are clearly not new, and the first edition of the best selling book in software engineering tells the story of a major IBM software project with major cost and
schedule delays which teetered on the brink of disaster for a number of years from the perspective of the project manager trying to stabilize the project [4].

Researchers with an interest in the reasons for such failures are faced with more than one challenge. Information about each failure and the circumstances surrounding it are difficult to obtain, but there is also a general lack of knowledge about the ways, methods and approaches for doing so. Lyytinen and Hirschheim [18] noted that more qualitative research methods were needed to investigate IS failures. The need for such methods is still evident from the current failure statistics. Glass [14] for example argues that more in breadth research concerning failures or runaways is necessary. A key finding of a special working group convened to address issues related to IT failures in the UK identified basic research into failure as an urgent need and called for additional research and good case studies [23].

The aim of this paper is to look into the general area of project failures and discuss the problems that impact the understanding of failures. The paper will also highlight some of the available approaches for investigating the failure phenomena and propose alternative methods that may begin to address some of the original concerns by taking into account the views and perspectives of the many stakeholders and the rich interplay of contextual information and conflicting accounts.

The paper is likely to be of interest to IS practitioners and researchers – especially those interested in failure, success and sense making. If the IS community can learn how to learn from the worldwide experience of past failures, precious resources just may be utilized more efficiently.

2 Failures

2.1 The cost of failures

According to the initial Standish report [26]: 31.1% of US software projects were cancelled and 52.7% were completed over the allocated time, over budget (costing 189% of the original budget) and lacked certain functionality. The cancellation figure for the following year (1996) looked even worse at 40% [27].

The cost of failed projects in the US in 1995 was $81 billion and projects that overran their budgets added another $59 billion. Developers spent $250 billion on 175,000 US software projects but $140 billion out of this (56%) was wasted on cancelled or over budget activities [26]. The cost of failure in 1996 went up to $100 billion [27]. According to Jones [17] the average US cancelled project was a year late and at the cancellation point consumed 200

Smaller cases make headlines in computing press (and national press) with alarming regularity. Goodwin [16] reported in Computer Weekly about an IT project fiasco between the Co-operative Group and ICL where £11 million are claimed in losses as a result of project failure. A common IT infrastructure was to be installed across the whole Co-operative group – the largest UK retail company. ICL failed to deliver the requested goods in time. A legal battle is still ongoing and the case is now due for a third appeal. Project success and failure is often assessed in financial terms. Indeed, Dalcher and Genus [9] reported that US$150 billion per annum was attributable to wastage arising from IT project failures in the US, with a further US$140 billion in the European Union.

However, costs cannot only be counted in monetary terms. For example, the failure of an ambulance despatch system, or any other safety critical system, may lead to loss of life. Another recent disaster in the UK, related to an earlier failure. The delay in introducing the Nirs2 system into the Inland Revenue beginning in 1995, meant that additional backlogs were building up. The backlogs caused the Inland Revenue to stop sending reminders to up to a third of the UK working force warning them that they needed to top up their national insurance contributions. As a result around 10 million people face a state pension shortfall. The impacted party includes the lowest paid workers in the UK. While the backlog results from a delayed system that itself cost taxpayers millions of pounds, the additional loss will be borne by individuals and only counts as a hidden backlog indirectly stemming from another failure. The true cost to individuals is likely to be £15 billion and the hardship that ensues as a result [21]. In recent weeks, the computing literature reported on further delays in projects [19], flawed systems [6] and additional wastage of money [24]. We shall now look into the problems of understanding failures.

2.2 Difficulty in understanding failures

The figures quoted above refer to failed projects that were never delivered, as well as challenged projects that exceed their cost and time baselines. This introduces a distinction between total failure (say a system that is delivered but is never used) and a partial failure or a challenged project (projects that finish late and over-budget and with lower functionality than originally expected can be called challenged). Note however that late delivery in certain situations may constitute an outright
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failure, and cancellation may be a positive outcome for a project that has dragged on indefinitely.

Lyytinen and Hirschheim [18] identified four categories of failed IS projects:

1. Correspondence failure: When the requirements are not met.
2. Process failure: When the project runs over time or budget and performance is unsatisfactory.
3. Interaction failure: When there are problems related to the use the system or when it is hardly used.
4. Expectation failure: A superset of the above three types of failures, when stakeholders’ expectations cannot be met.

It is clear that failures can be on different levels with many factors that need to be taken into account when they are studied. The information that is gathered to gain evidence can become more embedded in other domains and then the impact and scope of the failures become wider reaching [13]. The year 2000 problem is an example of this wider reaching impact. Similarly, the Inland Revenue failure described above has had wider reaching impact, spanning a third of the workforce in the United Kingdom (yet not directly involved in the original failure or included in the context of the original problem definition).

Evidence collection as part of failure investigation is a primary activity. Evidence can be obtained from a variety of sources including interviews, direct observation, and different types of documentation e.g. surveys, minutes from meetings, journalistic descriptions, reports of investigative committees, eyewitness accounts, etc. The main problem however is that the researcher gets the information after the incident and most of the sources are already in place when the failure is studied. The researchers cannot plan an experiment or define a set of criteria or objectives. Instead they must rely on analysing what came before without the ability to plan for data gathering. It also means that researchers are faced with biases related to the position of the interviewee in relation to outcome. Moreover given the passage of time and internal politics, it is highly likely that participants, like witnesses may rationalise their story with the benefit of hindsight. The aim of researchers in this area is to conduct a forensic investigation using the information from a variety of different sources whilst also taking into account the environment, context, people and the interactions between subsystems. The rich variety of sources introduces a challenge but also provides a mechanism for verifying and cross-referencing the differing accounts and perspectives. The aim of a forensic investigation is thus to explain circumstances leading up to failures by using available information and a variety of sources.

When such information is gathered and investigated, the main method of presenting the findings is through the publication of a case study. According to Lyytinen and Hirschheim [18] more qualitative research methods were needed for IS failure research. Glass [14] reports that the computing field is often focused on theory and excludes practice. Indeed, they are seldom interested in the formalization of best practices or learning experiences that can be derived from worst practices. He calls it: “a failure of the computing research field”. Glass [14] also feels that the failure cases appear as case studies in the popular computing press but organised research to attempt and study runaways and failures in greater breadth is lacking. Glass [15] has written a book to compile war stories from the electronic revolution: “ComputingFailure.com” showing that new types of failures are constantly emerging with a greater scope for damage. A similar sentiment was echoed by the working group looking at IT failures in the UK [23].

Donaldson and Jenkins [11] ask the question ‘why is there such a problem when so much is known about failures?’ They come to the conclusion that although much has been written about the topic, there is not a lot of ‘work-in progress’ that is being researched or reported on. The same authors [10] also report on current research efforts focusing on systems failures. The UK, USA, Denmark and Sweden are reported to have active research communities; however, they seem to face a similar need for better methods to understand failures and to learn from such experiences [10]. Once again, this is supported by the findings of the working group looking at IT failures in the UK [23]. Seventeen years after the observations of Lyytinen and Hirschheim, it still seems that the situation has not improved dramatically.

Although much is known about the reasons for systems failures and the actions required to recover from failures, it appears that not enough is done to feed the symptoms, solutions and the hard-earned knowledge back to the discipline in order to try to learn from past events. A typical set of common characteristics for failures reproduced from Evans et al [12] appears below:

- Failure to apply essential project management practices
- Unrealistic management expectations and unwarranted optimism
- Effective software practices not implemented
• Premature declarations of victory
• A lack of program management leadership
• Decision-making that is untimely
• A lack of pro-active risk management

Most project managers will be familiar with the symptoms. So, if the above list of failure symptoms and characteristics is known (and many more similar factors have been identified elsewhere) – how can we make better sense of failures and use the complex information gathered from different stakeholders to gain beneficial knowledge for future projects? The focus of forensic research is on identifying relevant knowledge, linking symptoms to causes and finding ways (including new methods) of describing and sharing knowledge and insights.

A failure has many facets; it is complex with multiple causes and perspectives [18, 14, 15]. It is of great importance that the interactions and actions of humans be studied and the conventional positivistic norm is not suitable for meaning-rich contextual work. Qualitative approaches for understanding failures are better suited since they enable the researcher to take account of context, perspective and intention.

Qualitative research methods originated in social sciences where cultural and social phenomena are studied. In failure studies the emphasis is on the interpretation of knowledge as held by the participants in a social activity. The sources of data that the researchers can use include interviews, documents, fieldwork, texts, etc. This qualitative perspective relies on words, which convey feelings and perceptions beliefs and expectations rather than numbers. Moreover, it also evokes assumptions and tacit knowledge that need to be made explicit for the purpose of the investigation. Subjects can express themselves and convey their feelings and this can be recognised, and structured through the use of qualitative methods. Meaning needs to be interpreted by way of sense making. Trying to quantify such textual data can easily result in the loss of social and cultural context making the results less relevant. In practice, each failure is different and it will not be possible to get one ultimate method of studying all failures. Furthermore, the dynamic nature of complex actions and interactions must play a leading role in the forensic investigation process.

2.3 Forensic investigation

Forensic is derived from the Latin forensics, which is to do with making public. Forensic science is the applied use of a body of knowledge or practice in determining the causes of an accident, crime or failure, or looking at the build-up of circumstances. Forensic investigation is the post-mortem analysis and study of project disasters and failures. The aim of a forensic investigation is to use available evidence and information to explain a given failure. The researcher wants to understand failures, their background and how they come about [7]. This is likely to include consideration of politics, human errors, organisational issues, interaction with the context and environment and the relationships between subsystems and different actors. With such understanding, new insights can be generated through reflection and fed back to the discipline (possibly through an improved body of knowledge and standard practices) thereby leading to improvement in organisational processes.

Knowledge however is not something that exists and grows in the abstract – it is a property of the interaction between subjects and the environment and is tied to perspectives, intentions and perceptions. Qualitative research methods are concerned with generating richer knowledge. Knowledge is bound to its original context and is coupled to a specific timeframe. Useful information about failures can be understood through additional contextual information. When failure phenomena are being investigated it suggests that we already possess a problem frame, with complexity and messy interactions. The aim of the researcher must be to increase in a systemic way the understanding of the situation taking into account complexities, perceptions, context and interactions. This can enable the researcher to glimpse the total system. Some failure investigations reduce failure explanations to causal links – ignoring the role of participants, their knowledge, assumptions and environment. Failure research must take into account these interactions. When interactions occur in a certain way and order, they give rise to emergent patterns of behaviour. The general phenomena of emergence defy causal analysis, forcing greater emphasis on these interactions.

Time delay when looking at causes and effects, is a complicating issue in failure research. Often the effect of a decision is not witnessed until much later resulting in a distorted causal link between cause and effect. The researcher thus needs to have adequate historical accounts of interactions between actions, perceptions and time.

Having described some of the complications in studying failures the next section will look at the case study approach as a research tool in Information Systems forensics (IS forensics).
3 Using Case Studies to Describe the Failure Story

A common way of looking at failures is through the use of case studies. The term case study is an umbrella term used in different contexts to mean different things. Case studies can be, and indeed often are, used as an educational tool. This is utilised in many teaching environments including the IS community and has been largely borrowed from the MBA culture. However, case studies also have a crucial role as a research tool for evidence collection and information finding. The shift to studying the impact of issues within organisational context renders case studies particularly useful for failure scenario investigations. The aim of the case study approach is to understand phenomena in terms of issues in the original problem context so that the researcher can concentrate on identifying the interacting perceptions, issues and processes at work, resulting in deeper understanding of the incident. Case studies are more likely to be used after the incident happened as research is triggered by an acknowledged failure.

Yin [28] states that a case study is an empirical enquiry that:

‘investigates a contemporary phenomenon within its real life context, when the boundaries between phenomenon and context are not clearly evident and in which multiple sources of evidence are used’.

The aim of the case study is to give a rich, multidimensional picture of a situation that is being studied, that incorporates relationships, political issues and the rich context in which the study is carried out [22]. Remenyi also offers a comprehensive description of case studies and how they can be used in the area of evidence collection as an effective research tool or a comprehensive research strategy.

Actions can only be understood in context, and case studies create the context for understanding them. Case studies play a crucial role in highlighting a decision, or a set of decisions and in emphasising why they were taken, how they were implemented and with what results [25]. Case studies therefore allow the researcher to concentrate on specific instances in their natural settings facilitating the process of sense making. The richness of data obtained by multiple means from multiple perspectives provides a real insight into the main issues at play. Many of the insights are likely to remain hidden under normal conditions but are highlighted as if by shining a torch through the unique focus on the intricate detail and relationships surrounding the phenomena under study thus providing a multidimensional picture.

According to Dalcher [8] the main advantages of using case studies include:

- Ability to identify issues and then focus on them
- Richness of detail
- Taking into account multiple perspectives and explanations
- Cross-disciplinary remit
- Ability to recognise inherent complexity and minimise it
- Ability to handle disagreement
- Ability to show interactions
- Ability to see emerging patterns
- Ability to see the context of the problem
- Dealing with interpretations
- The inclusion of wider aspects of the system environment

There are also objections to the use of case studies:

- Data is viewed as ‘soft’
- Biases present in views
- Questions about generalisation of findings for a single case
- Issues regarding objectivity
- Negotiating access to the setting
- Boundaries can be difficult to define
- Mainly after the fact – retrospective
- The observer effect
- Time – may take too long
- Reliability of the conclusions

Although there are objections to their use, case studies are ideal for studying interactions between people and their understanding of a situation in context and their actions. Case studies play a key role in developing a deeper understanding of IS failures, and more generally of IS phenomena. Indeed, in common with other aspects of IS, failure case studies place a greater
emphasize on organisational and cultural issues and their relationship with the technical aspects. The failure case study is a special example of a case study that focuses on the background, context, perception, interaction and patterns of an incident. The following sub-section focuses on this type of case study and its role in investigating and conveying details of failures.

3.1 From case studies to case histories

The Software Forensics Center at Middlesex University proposes the use of the term case history [8] because the failure is investigated in a systematic fashion after the event. The case history is then the main tool in the hand of the researcher representing a detailed description and analysis of complex events and processes. Case histories must incorporate more than a simple chronology of events as they convey a story taking into account different perspectives, focuses and biases. Constructing a convincing narrative after the fact is a key challenge. Case histories contain observations, feelings and descriptions. They can be used to construct, share, dispute and confirm meanings, interpretations and scenarios in the context of real events. Such observations must be systematically processed and structured.

Case histories are concerned with providing the background and context that are required to endow words and events with additional meaning. Background refers to previous history of the system itself, while context refers to interactions with the environment. As failures are time- and place-dependent, the case history framework enables readers to obtain an understanding of the intimate context surrounding the main event (which goes beyond the normal chronology of events). As researchers expand the details available in case histories they engage in storytelling, which goes beyond simple recounting of events. Case histories involve interpretation, which plays a key part in transmuting the chronicle into a meaningful story with a plot, coherence and purpose. However, constructing a single narrative of a complex story with competing meanings, alternative perspectives, and inherent prejudices and biases is a challenge that must be overcome if case histories are to become more effective in telling the stories of failure in a meaningful and significant way. The next section will look at the future of failure storytelling in terms of the development of narratives and the search for alternative methods for developing narratives for failure stories.

4 The Future of Failure Storytelling

The special working group focusing on the challenges of complex IT projects highlighted the need to develop more and better case studies (case histories) [23]. Current cases are limited and are often incapable of capturing the diversity of perspectives and perceptions that impact major, complex IT projects. The richness of the phenomena that needs describing calls for new methods of observing, deriving, and composing convincing case studies that will have an impact on practitioners. Many practitioners object to case studies due to their simplistic nature, which downplays the real complexity of real events. Part of the problem is in the medium; written cases convey a sequential sense, which often misrepresents the natural complexity of events. The other complication goes back to the lack of adequate qualitative methods for capturing relevant detail as observed by Lytyinen and Hirschheim (1987). The rest of this section looks at the potential of narrative methods to enhance our understanding of failures and improve the stories that we generate. The result may go some way towards convincing practitioners that failure stories can convey a realistic depiction of events thereby showing the impact of ignoring available knowledge and good practice. This would represent the first step towards the development of better understanding and improved methods for dealing with failures.

4.1 Failure storytelling and narrative

Failure storytelling can be understood as a narrative recounting with the unlocking of patterns or a plot. Failures in common with other organisational activities are based on stories. The verbal medium is crucial to understanding behaviour within organisations and systems, and researchers are thus required to collect stories, grounded in practice, about what takes place. Generally, there is a variety of methods for dealing with complex narratives. The value of the narrative is in emplotting and linking scattered events. Indeed, a main challenge for researchers of complex phenomena is what to do when there is a multiplicity of versions and narratives rather a single and well-understood version that is shared by participants. Understanding failures often entails the retrospective untangling of complicated webs of actions and events and emergent interaction patterns so that a sound plot can be developed.

In practice, the essence of any good case history revolves around the ability to generate an effective storyline, normally with a unique style, plot or perspective. In a large case, a general theme can be obtained from
selected excerpts weaved together to illustrate a particular story. Personal stories that form part of a case study can thus be viewed as a valid source of data organised to make sense of a theme or problem. This is particularly useful when the researcher is trying to portray a personal account of a participant, a stakeholder or an observer in an incident, accident or failure. The implication is that the need to address personal aspects of interaction and story (that remains a problem in IS research) is fulfilled by the development of a research-valid narrative. Indeed, Remenyi et al [22] contend that a story, or a narrative description, is valid if the resulting narrative adds some knowledge.

A narrative can be structured to give a voice to the researcher, to the narrator, to the participants, to the stakeholders or to cultural groups, traditions or ideas. In the context of research it is not concerned with the development of a reflective autobiography or life story but rather with the analysis and devolvement of themes that emerge from a medley of events [2]. Researchers are thus concerned with how information interpreted from a story can be structured in such a way so as to produce valid research finding. This form of narration can be particularly useful in uncovering motives and rationales and linking them to the actual consequences and their impact on stakeholder groups.

To construct a plot is to give a voice to the narrator and the key stakeholders. The researcher wants to construct the story so as to obtain valid research findings as the output. There must be trust between the researcher and the storytellers because the process of constructing a narrative can reveal personal detail. Moreover, it is also likely to touch on subjective and therefore biased perceptions. Researchers must therefore take care in dealing with personal biases: Follow-up questions are thus used to clarify the context and real sequencing of events so as to make sense of the overall story.

The process of constructing the narrative has to do with perspectives, purpose of participants, the plausibility of the emerging plot and the filtering of irrelevant information. Researchers try to interpret stories and use information in a constructive and engaging manner. Understanding IS failures is a complex activity that goes beyond the mere construction of a narrative from a simplistic chronology of events.

The reality in failure stories is of multi-stranded stories of experiences and reactions that lack collective consensus. The story format provides a powerful way of knowing and linking disparate accounts and perspectives. Stories appear to flow, emerge and network offering complex clustering of events, emergent phenomena, causes and effects. Moreover, the accounts are often subjective, counter-intuitive and contradictory. This builds into interacting, and conflicting webs of narratives, characterised by coincidences, predacizations and crises. It also means that researchers need to find ways of reconciling and fitting these stories together in an effort to make sense of the world unfolding around them.

4.2 Beyond the narrative: Developing antenarrative approaches

Real life stories are fragmented, nonlinear, multivariate, incoherent, dynamic, polyphonic (multi-voiced) and collectively produced, as they occur in asymmetrical, random and turbulent environments. However help is needed in generating storylines that will benefit from the richness of multifaceted insights.

Narrative inquiry is used in the social sciences and in management research, as well as in IS, as an acceptable research approach [3, 2]. In reality, stories appear to be told improperly as the story is in an ante state of affairs, before the carefully constructed narrative. The antenarrative or real story is the messy, fragmented, multi-voiced and complex tale. Future research will reveal if antenarrative methods will aid in the process of failure investigation and sense making.

Developing narratives requires a plot as well as coherence, as a story is made out of events and the plot mediates between the events and the story. In failure stories, the plot often emanates from the actions and perceptions of participants emerging out of the flux of events, in (direct) contradiction with expectations. The combination of plot, purpose and perspective dictates the selection of elements, the filling in of links and the removal of ‘irrelevant’ noise.

Boje [3] advocates the use of ‘antenarrative’ methods to take into account the fact that stories appear to be told improperly: in a fragmented, multi-plotted and complex manner. Failure researchers are often faced with contradictory fragments that need to be combined. The purpose of antenarrative methods is to take a complex situation characterised by collective (yet often conflicting) memory and an antenarrative, and to construct the plot and coherence needed to narrate the story. The current view of ‘sequential’ and ordered stories is therefore insufficient for capturing the detail of cases. It is also inadequate for capturing multiple voices and perspectives and conflicting preferences, values and assumptions. The solution appears to be in writing stories as polyvocal tapestries that will enable different perceptions, interpretations and perspectives to co-exist. Variety can thus enable the generation of webs of actions and interactions which can be interpreted as a unified
whole in an effort do derive insights and lessons. The next section looks at where this work might be heading.

4.3 The way forward

IT failure research is currently looking to create improved cases that capture a more realistic picture of reality. The question that is now asked is: can the use of narrative and antenarrative analysis help the field of failure research to get a more complete understanding of complex interactions. Boje [3] defines antenarrative as ‘this fragmented, non-linear, incoherent, collective, unplotted and improper storytelling’ that is the story in an ante state of affairs before a constructed narrative is used to impose sense. Future work will focus on the capability of antenarrative methods to capture relevant detail in the domain of IT failures. It will therefore hinge on the potential and appeal of such captured storylines and their role in enhancing our understanding of failure, the build-up of causes and the potential for sharing and learning lessons from such stories.

Boje [3] describes eight alternative narrative analysis or antenarrative approaches that can deal with fragmented and polyphonic storytelling which may have the potential to satisfy the need for improved qualitative methods in IS failure research. Each method will be highlighted in turn. The methods are:

1. Deconstruction
2. Grand narrative
3. Microstoria
4. Story network
5. Intertextuality
6. Causality
7. Plot
8. Theme

4.3.1 Deconstruction

When evidence is collected it is clear that every story: has a worldview, is part of other stories or events and has another side. Deconstruction challenges the researcher with linearity, sequence, voice and plot.

4.3.2 Grand narrative

When stories are analysed it is important that grand narratives must be looked into and see how many smaller stories exist within. Each story is an intertextual network. Other voices can be embedded in the grand narrative.

4.3.3 Microstoria

Researchers using this approach use the ‘little people’s’ histories and ignore the ‘great man’ accounts that are most often used in organisation studies. Microstoria relies upon archival evidence found in notary records, property registries, pamphlets, trial proceedings, etc. Clues from non-elite persons and places are used and exceptional cases are used.

4.3.4 Story network

In antenarrative analysis the researcher tries to trace the storytelling behaviour in the organising situation. The organisation is seen as a storytelling system.

4.3.5 Intertextuality

This approach is not used much in organisation studies. Intertextuality is the dialogue that goes on between and in narratives. Many voices contribute to the stories that need to be analysed.

4.3.6 Causality

The casual field to work in is often messy and complex. This approach looks into how people put fragments of story together into causal assertion.

4.3.7 Plot

Who gets to author the narrative in emplotment of complex organisations? Are other emplotments feasible? The readers and writers of a plot must get into intertextual dialogue.

4.3.8 Theme

Storytelling moves beyond the limits of hierarchy and classification. The researcher focuses on what was between the lines and what was left out. Future Work: The alternative ways that Boje [3] has assembled mainly focus on multi-stranded stories of experiences that lack collective consensus. Future work proposed to develop the discipline focuses on the utility of narrative and antenarrative methods in reasoning about (and explaining) software development failures. In particular we are concerned with the usefulness of these or other methods in conducting comprehensive IS failure analysis so that the software development community
can share and learn from past mistakes. A key focus revolves around the interest in discovering if some of these methods are more suitable than others in a specific organisational culture, or for a specific type of application, etc.

5 Conclusion

With the benefit of hindsight it is possible to reconstruct a systematic retelling of events that have resulted in a failure. The narrated structure provides an explanation as to how and why failures occur. The purpose of the structure is to make sense of a rich tapestry of interactions and connections by following an identified storyline that chronicles and links the relevant issues within the environment. This can lead to a rich explanation or justification grounded in the original perception of the problem environment. Indeed, recounted life may prise open perspectives that would have been inaccessible using ordinary methods and thinking arrangements. Moreover, failure tends to highlight missing and incorrect assumptions and faulty defensive mechanisms and can therefore serve as a pretext to updating the frame of reference or the context for understanding. [8]

This paper presented some aspects of the IS failure research field. It was shown that failures result in a cost burden borne by society. Moreover, they have been with mankind for a number of decades. Much research has been done on the reasons for failures but it seems that new and alternative ways of studying the failure phenomena must be looked into in order to offer potential for progress in this area. Recent evidence suggests that current methods are still insufficient. The finding of the UK working group re-affirm and re-emphasise the need for improvement in the methods used for understanding, re-telling and reflecting on failures.

Investigating and making sense of IS failure is still a relatively immature discipline with little awareness of alternative approaches for identifying and capturing that knowledge. The paper reported on current methods that are dominated by case studies. It was shown that a special instance of the failure case study – the case history is particularly useful in describing failures. Case histories look at dynamic interrelationships and focus on the holistic totality in a naturalistic setting.

Narrative methods and antenarrative reading enable researchers to address the fragmented nature of failure stories thus offering an alternative to sequential and single voiced stories and chronologies. The future may entail a combination of narrative and antenarrative methods combined with current case-based methods to provide a richer and deeper understanding of complex interactions and derive the total picture of an incident. The aim of forensic analysis is to make sense of complex and messy situations and it therefore relies on the availability of methods that support that purpose.

Developing a better understanding of the methods and exploring new directions can provide the knowledge needed to begin to gather insights. By improving the methods for describing and reasoning about failures we can begin to improve our ability to learn from them.

The frequency scale of reported failures is increasingly used to draw attention to the problems associated with the practice of information systems development. The discussion in this paper is meant to provide an opening for further discourse and investigation. It is hoped that some of the new methods identified and described here will play a part in aiding the understanding of failures and in documenting the details that explain how failures come about, as the first step towards searching for new solutions. The opening of this new perspective is also meant to stimulate additional insights and to foster a new dialogue about our histories, our present state and how to improve our future.

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