

# From Stories to Histories in Making Sense of IS Failure

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## INTRODUCTION

Stories of failure make a compelling read, however, researchers with a keen interest in information systems failures are faced with a double challenge: Not only is it difficult to obtain intimate details about the circumstances surrounding such failures, but there is also a dearth of information about the type of methods and approaches that can be utilised in this context to the collection and dissemination of information. The purpose of this article is to highlight some of the available approaches and to clarify and enhance the methodological underpinning that is available to researchers interested in investigating and documenting phenomena in context-rich and dynamic environments. The article begins by framing IT project failures in context, before describing the role of failure investigation and the typical tools employed in gathering information. It makes a case for moving from case studies to case histories to capture the essence and complexities of failure stories. It concludes by introducing a new range of antenarrative approaches that represent future developments in the study of IS failures, enabling a richer interpretation of factors that underpin IT failures.

## BACKGROUND

The popular computing literature is awash with stories of IS development failures and their adverse impacts on individuals, organisations, and societal infrastructure. Indeed, contemporary software development practice is still characterised by runaway projects, late delivery, exceeded budgets, reduced functionality and questionable quality that often translate into cancellations, reduced scope and significant re-work cycles (Dalcher, 1994). The net result is an accumulation of waste typically measured in financial terms. For

example, in 1995 failed US projects cost \$81 billion, with an additional \$59 billion of overspend, totalling \$140 billion (Standish 2000). Jones contended that the average US cancelled project was a year late, having consumed 200% of its expected budget at the point of cancellation (Jones 1994). MacManus and Wood-Harper (2007) reported that the cost of software project failure across the European Union in 2004 was €142 billion. More recently, a McKinsey-Oxford survey of more than 5,400 software projects revealed that half of all projects significantly fail on budgetary assessment, while 17 per cent of projects actually threaten the very existence of the company, with the average project running 45 per cent over budget and seven per cent behind schedule, while delivering 56 per cent less functionality than predicted (Bloch et al., 2013).

IS failure investigations start with extensive attempts to collate relevant evidence. However, in most cases the researcher is exposed to specific information post-hoc, i.e. once the failure is well established and well publicised and the participants have had a chance to rationalise their version of the story. Most of the available sources are therefore already in place and will have been set up by agencies other than the researcher.

The purpose of a forensic investigation is to explain a given failure by using available information and evidence. The term Forensic is derived from the Latin 'Forensis', which is to do with making public. Forensic Science is the applied use of a body of knowledge or practice in determining the cause of death. Nowadays extended to include any skilled investigation into how a crime was perpetrated. Forensic systems engineering is the post-mortem analysis and study of project, product, artefact or service shortfalls and failures, which aims to uncover systemic and underpinning causes (Dalcher, 1994). The work involves a detailed investigation of a product or service, the underpinning project, its environment, decisions taken, politics, human errors and the relationship between subsystems. The work draws upon

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a multidisciplinary body of knowledge and assesses the project from several directions and viewpoints. The aim of forensic analysis is to improve the understanding of failures, their background and how they come about (Dalcher, 1997). The concept of systems is a central tool for understanding the delicate relationships and their implications in the overall project environment.

Forensic systems engineering is primarily concerned with documentary analysis and (post-event) interviews in an effort to ascertain responsibility lines, causal links and background information. The primary mode of dissemination of findings, conclusions and lessons is through the publication of case study reports focusing on specific failures. However, there are limited research methods to explore the dynamic and fragmented nature of complex failure situations. Lyytinen and Hirschheim (1987) noted that more qualitative research methods were needed for IS failure research as well as more extensive case studies that explored problems in more detail and viewed solution arrangements in light of what transpired. The same methods also need to account for group issues and cultural implications. Sadly, twenty years on, the same constraints in terms of methods are still in evidence.

## DESCRIBING FAILURE

Making sense of IS failures retrospectively is difficult. In general, there is very little objective quantitative failure information that can be relied upon. Instead, interpretation requires understanding of and engagement with the wider context. Indeed, a specific feature of failure is the unique interaction between the system, the participants, their perspectives, complexity and technology (Perrow, 1984). Lyytinen and Hirschheim (1987) pointed out that failure is a multifaceted phenomenon of immense complexity with multiple causes and perspectives. Research into failures often ignores the complex and important role of social arrangement embedded in the actual context. This is often due to the quantitative nature of such research.

Understanding the interactions that lead to failures likewise requires a humanistic stance that is outside the conventional positivist norm to capture the real diversity, contention and complexity embedded in real life. Forensic analysis thus relies on utilising qualitative

approaches to obtain a richer understanding of failure phenomena in terms of action and interaction.

The fact that a failure phenomenon is being investigated, suggests that attention has already been drawn to the complexities, breakdowns and messy interactions that such a situation entails (i.e. the investigation is problem-driven). Many such inquiries deal with subjective accounts including impressions, perceptions and memories. The aim of the researcher is to increase in a systemic way the understanding of a situation, yet do so from a position that takes in the complexity of the entire situation and incorporates the different perspectives and perceptions of the stakeholders involved.

Overall, the purpose of a failure research method is to enable the researcher to make sense of the complexity of detail and the complexity of interaction and chart the contributory role of different causes and issues in the build up to failure. However, the armoury of research methods in this domain is often limited to case studies.

The term “case study” is an umbrella term used in different contexts to mean different things that include a wide range of evidence capture and analysis procedures. Yin (2008, p.18) defines the scope of a case study as follows:

“A case study is an empirical inquiry that:

- investigates a contemporary phenomenon in depth and within its real-life context, especially when
- the boundaries between phenomenon and context are not clearly evident”

A case study can be viewed as a way of establishing valid and reliable evidence for the research process as well as presenting findings which result from research (Remenyi, 1998). According to Schramm (1971) the case study tries to illuminate a decision or a set of decisions and in particular emphasise why they were taken, how they were implemented and with what results. A case study is likely to contain a detailed and in-depth analysis of a phenomenon of interest in context; in our case, the failure scenario. Table 1 summarises some of the main advantages of using case studies.

The general aim of the case study approach is to understand phenomena in terms of issues in the original problem context by providing the mechanism for conducting an in-depth exploration. They often result from

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