Introduction

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Biographical notes: Jacqueline Kam is a Lecturer in the School of Economics, Finance and Management at the University of Bristol. She obtained her PhD from the University of Sheffield and joined academia after a varied corporate and consulting career. Her work focuses on technology management, innovation, strategic management and professional service firms.

There is nothing new under the sun. It is folk wisdom that plenty of lessons can be drawn from failure and that failure is a better teacher than success, provided lessons are learned. The economic development process is a learning process (Boulding, 1968). Learning is "the product of experience" (Arrow, 1962), improves action "through better knowledge and understanding" (Fiol and Lyles, 1985), and is itself "one of the technologies" used for competence development (Levitt and March, 1988). But how to learn from failure? In Engineering, failure is frequently found in 'Failure Analysis' (Shin-ichi, 1992), which is a method or a series of actions undertaken to find the reasons of a particular failure and correct the causes, and is a critical step in product development and project management (Hariolf, 2001; Sauer, 1993). In this context, failure is a necessary step in the process of achieving objectives and success.

Learning from failure can certainly extend beyond Engineering. Management researchers also try to identify individual factors that may lead to organisational failure (Mellahi *et al.*, 2002; van Witteloostuijn, 1998), and there are business books galore professing the tools to prevent and avoid failure, and listing the components of success for use in business organisations (see, *e.g.*, Dorner *et al.*, 1996; Farson and Keyes, 2003; Finkelstein, 2003). Such a preference for success is understandable in the light of the human predilection for success and the comfort that linear causal explanations offer. However, human behaviour is complex; any success or failure translated as linear causal formula is likely to be misleading. While writing exploring the complexity underlying human behaviour and events is abundant in neighbouring disciplines (see, *e.g.*, Arrow, 1962; Arrow *et al.*, 1996; David, 1985; 1997; David and Antonelli, 1993; David and Bunn, 1987; Krugman, 1991; 1996; Rosenberg, 1982; Rosenberg and Nelson, 1994), it is sparse in management literature.

Drawing on Knight (1921), Merton (1936) states that consequences of actions may result not only from individual and specific actions, but also from the complex interaction of the actions, the circumstances and the constraints on the actions. Merton sees knowledge in its existing state as limiting. Knowledge in this sense is not confined

to what is scientifically proved, but more generally includes awareness of the situation, the choice and the circumstances. Three factors are seen as causing unintended consequences. First, there are numerous interplays of forces and circumstances that are too complex for actors to predict, and therefore result in what he calls 'chance consequences'. Combined with the tendency of human beings to act on opinions and estimates rather than exact knowledge (Knight, 1921), the complex interplay of different purposive actions will usually bring about unintended results. Moreover, an 'error' factor states that people may operate with a common fallacy, assuming that what worked in the past will have the same effect within the present context, and that partial attention to a situation may be caused by simple neglect or pathological obsession. Such error and negligence also promote unintended and undesirable outcomes. Another crucial contributing factor is 'imperious immediacy of interest', by which Merton suggests that concern for predicted immediate consequences impedes consideration of further outcomes of the very same action. Such myopic conduct is fairly common in economic and social life: intense interest in instant payoff causes short-sightedness in decision-making, which hampers consideration of further outcomes, and consequently results in ultimate failure.

Merton (1936) contends that actors do not exist and operate in a vacuum. They interact, which brings consequences different from those originally anticipated. The very participation of various human actors changes the initial expected course of the actions. Merton sees this as peculiar to human conduct. This is reminiscent of Heisenberg's Uncertainty Principle in quantum mechanics: the very act of measuring renders the precise measurement impossible as the measuring instrument inevitably interferes and changes what is being measured. Human actions may produce unintended consequences, purposive actions to achieve success may result in failure.

This special issue seeks to contribute to the literature by exploring a range of failures from several different perspectives, recognising the diverse and complex nature of failures and attempting to draw fruitful lessons.

The widespread adoption of PC has transformed and revolutionised our way of work and life. Less known is its previous challenger in the mid 1990s, the Network Computer (NC). Taking a co-evolutionary view, Garnsey and Ford tell the story of the failed challenge of the NC. Through analysing the role of technological co-evolution in the commercialisation and diffusion of the NC, they observe that a co-evolving business ecosystem is crucial to successful introduction of new products, especially those new comers challenging dominant technologies. Challenges from new firms may also prompt the incumbents to innovate and improve and this leads to more fierce competition and tough challenges for the new entrants. The NC, even with its pioneering nature and more advanced technological offering at the time, failed to challenge PC's dominant position, and PC experienced continual improvements. This failure is mainly explained in the light of the failure of synchronisation of the technological and marketing complementarities for the NC. And this case study shows that building such complementarities and nurturing accommodating co-evolutionary forces are vital for new entrants.

Taking an evolutionary economics perspective, Earl and Wakeley explore the decision-making process when the firm is venturing into the unknown. Through the case of the development of digital photography, the authors reveal how the customer's preference hierarchy influences their buying decisions, which is rather different from the conventional and orthodox view that customers happily substitute their preferred product characteristics. Managers tend to have blinkered views in their assumptions of customers'

preferences and decision-making. Such misunderstanding and misconception may skew the managers' and the firm's views of the market and market drivers and their strategies for the firm. This is particularly dangerous when the firm is facing the uncertainties of entering a new market or launching a new product in the same market. The case of Kodak having missed out the opportunities offered by the digital revolution and remained complacent in its position of suppliers of films and related chemicals sounds the siren for managers and companies facing constant changes in the market, and serves as a poignant reminder for decision-makers of the need to better understand their customers.

Kam reflects upon the boom and bust of the telecommunications industry from the late 1990s to the early 2000s, and seeks to understand it with the insights from behavioural economics. Unlike the conspicuous burst of the dotcom bubble, the telecoms crash came quietly, but turned out to be bigger and more catastrophic. It is argued that fundamentally it is about decision making under uncertainty with bounded rationality and imperfect information. From investors and executives gathering information to professionals offering services and advice, all are affected by certain human behavioural tendencies. The similar human foibles behind the telecoms crash and other economic bubbles offer insights for executives, investors, specialists, regulators and government policymakers to approach the coming challenges in this fast-changing industry. While finding it alarming that historical lessons appeared unlearned and similar mistakes happened, the author also argues that this episode of the telecoms industry still brought positive effect to the industry and its customers, but more informed and careful policies and strategies are needed for future undertakings in the telecoms.

Gerst and Bunduchi explore the implications of organisational politics in the case of the development of Covisint, an envisaged industry-wide e-commerce platform that failed to achieve its promise. It is well documented in Information System research that many technologically successful IT innovations failed dramatically in organisations. One prominent explanation for many IT failures points to the political nature of IT project implementations. Power distribution is altered in such implementations, and the disturbed power balance leads organisation members to react in defending their own interests. Focusing on one of the sponsoring organisations of Covisint, the authors uncovered the inside story of the project, revealed how different departments in the organisations felt threatened of their position of power and control in the project implementation, and their subsequent power struggle impeded the project and compromised the original objectives of the platform. In contrast to other research in IT adoption that mainly focuses on inter-organisational conflicts and discords between designers and users, this case demonstrates the equally erosive intra-organisational conflicts and the political struggles between internal IT department, users and external IT service providers.

Successful implementation and deployment of technology depends on many factors, especially organisational readiness. So and Liu present a case study of a medium-sized library adopting Radio Frequency Identification (RFID) technology. Library services have become increasingly computer-based, and the new RFID-based library system was adopted by the library to increase operation efficiency and enhance customer experience. However, the implementation encountered an unexpected problem: while the advanced system offers great improvements to the library circulation process, it also offers the possibility of abusing personal information and hence intrusion into customers' privacy. The readiness of the library to implement such technology is discussed, and so is the way

that library management has chosen to tackle the problem. This study shows that while organisations have to adopt new technologies to adapt to external changes, they also need to be aware of any potential issues that might come with the new technologies.

In production, monitoring overall production status is crucial if corrective actions are to be taken to adjust any issues on production line. Unexpected and unpredictable issues in production activities may induce significant changes in associated logistic operations and cause loss. However, such issues can be turned into useful signals to trigger required responsive actions. Various conventional approaches are available to monitor the flows in the entire production. But most of these approaches focus only on a specific domain, require lengthy information processing time and frequent delay, fail to paint an overall picture of the entire functional cluster. Other more advanced techniques require enormous effort and workload in set-up and adjustment. Tang presents a simple and easy-to-implement system monitoring technique to reason the elements in a production line that is suitable for most flow type productions. Through monitoring and collecting information of changes on the flow line, the operating status of the flow line can be obtained, and the operator can take informed corrective actions.

To conclude, contributors to this special issue examine the failure of complementarity co-development in new product development, decision making under uncertainty, organisational politics in new technology adoption and technical issues in technology implementation and application. It is hoped that analyses of such a diverse range of failure can shed some light on the understanding of, and learning from, failure for researchers in Management Studies.

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