

# **Implementation Strategies and Post-Merger Integration Performance Outcomes**

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## **ABSTRACT**

Research has not converged on a set of factors that reliably explain the variance in post-merger integration (PMI) performance, and scholars have called for new theory building to fill this gap. This paper combines an in-depth field study, causal loop diagramming, and simulation modelling to build a process theory of PMI over time. From our field data, we identify four common PMI performance trajectories over time and develop a simulation model capable of generating all four different performance outcomes. Simulation analyses highlight the important role of several interconnected feedback processes that have not been identified in prior work: (1) the ‘Achieving target synergy’ balancing loop, (2) ‘Integration fatigue and Low monitoring’ reinforcing loop, (3) ‘Integration fatigue and Burn out’ reinforcing loop, and (4) ‘Pressure to accelerate and Stress’ reinforcing loop. Results show how differences in implementation strategies for PMI lead to different performance outcomes. One performance outcome, the Death Spiral, arises when managerial decisions to accelerate synergy realisation and generate new synergies, increase fatigue and uncertainty, and undermine engagement, capabilities, and synergy realisation.

**Keywords:** post-merger integration, grounded theory building, strategy process, simulation

## **Implementation Strategies and Post-Merger Integration Performance Outcomes**

Decades of research shows that a large percentage of merger and acquisition (M&A) investments destroy economic value (for a review see Haleblan, Devers, McNamara, Carpenter, & Davison, 2009; for the latest meta analysis see King, Dalton, Daily, & Covin, 2004). Similarly, industry studies estimate that between 70-90% of M&A's fail to deliver the benefits that initially motivated the deal (Christensen, Alton, Rising, & Waldeck, 2011). For example, a recent Hay Group survey reveals that only 9% of business leaders think their merger or acquisition fully achieved its original objectives (<http://www.haygroup.com/au/challenges/index.aspx?id=12290>).

However, there is wide variation in post-acquisition performance (Capron & Pistre, 2002; Datta, Pinches, & Narayanan, 1992; King et al., 2004; Zollo, 2009). Some acquiring firms capture substantial value from M&A transactions, while the majority of firms destroy value in M&A moves. In their meta-analysis of strategy M&A research, King et al. (2004) argued that: "Empirical research has not consistently identified antecedents for predicting post-acquisition performance. . . .our results indicate that unidentified variables may explain significant variance in post-acquisition performance, suggesting the need for additional theory development." Research also shows that PMI implementation processes are vital to acquisition performance and often determine whether an M&A move creates or destroys value (Cording, Christmann, & King, 2008; Homburg & Bucerius, 2006). However, there has been limited work examining how different PMI implementation strategies affect performance outcomes.

Overall, empirical research has not converged on a set of factors that consistently explain differences in PMI performance (Cartwright & Schoenberg, 2006; King et al., 2004). No cohesive theoretical framework currently explains the wide variance in PMI performance and why some firms succeed and others fail in M&A moves. There are critical gaps in existing

theory and empirical findings, and building an integrated dynamic theory is needed to explain PMI performance over time.

This study uses a grounded theory building approach to identify new constructs and relationships among constructs to develop a process theory (Pettigrew, 1992, 1997; Van de Ven, 1992) explaining PMI performance over time. We combine in-depth fieldwork with system dynamics simulation modeling to build an information feedback perspective of the PMI process. An organization involved in integrating an acquisition into its existing business activities is a complex system of interdependent components, and simulation modeling enables us to capture the complex, interdependent web of causal relationships among variables, and facilitates testing to ensure the proposed causal relationships can in fact generate the observed longitudinal patterns (Black, Carlile, & Repenning, 2004; Repenning, 2002).

The research contributions include the identification of new constructs and relationships in PMI, a causal loop diagram capturing a rich process theory, and an integrated simulation model to test the internal validity of the theory.

### **PRIOR RESEARCH ON THE PMI PROCESS**

Existing theory does not adequately explain why some mergers succeed while many fail. However, research shows that PMI implementation processes are vital to performance (Cording, Christmann, & King, 2008; Homburg & Bucerius, 2006; Larsson & Finkelstein, 1999). Despite the importance of PMI implementation processes for performance outcomes, there are critical gaps in our understanding of the PMI process.

Researchers applying the process perspective to PMI have considered how managerial implementation decisions and processes affect performance outcomes (Haspeslagh & Jemison, 1991; Yu, Engleman, & Van de Ven, 2005). Haspeslagh and Jemison identified a number of

important integration decisions that impact post acquisition performance, including level of integration and speed of integration. They argued that the appropriate level of integration and speed of integration depends on the balance between the requirement for strategic interdependence and organizational autonomy. Yu *et al.* analysed the amount of time senior managers spent discussing various integration topics, described the different communication patterns about the integration, and identified a vicious cycle of repeated conflicts throughout the post-merger integration.

We build on these and other prior process studies of M&A integration and seek to identify the causal mechanisms driving integration performance over time.

## **METHODS**

This study combines interviews with expert informants, group workshops, causal loop diagramming, and simulation modelling. There is a large body of work that successfully applies causal loop diagramming and simulation modelling to build process theories in organisation theory and strategic management (examples include Azoulay, Repenning, & Zuckerman, 2010; Black et al., 2004; Gary, 2005; Rahmandad & Repenning, 2015; Repenning, 2002; Repenning & Sterman, 2002).

We conducted individual interviews with 21 PMI professionals who collectively had direct involvement in over 200 post-acquisition integrations. Interview notes captured the key points from the discussion and where possible the interviews were recorded. The interview notes were sent to each interviewee to check that the notes accurately reflected the discussion, and also provided interviewees with an opportunity to add to or elaborate on the contents of the interview.

Causal loop diagrams were constructed iteratively throughout the period of data collection. Each causal link was reviewed as it emerged, to assess whether the relationship was consistent with multiple data sources. The first phase extended over a five-month period.

Following the conclusion of the individual interviews, two workshops were held with PMI integration professionals to discuss the findings from the individual interviews. There were 6 participants in the first workshop and 9 participants in the second. In total, the individual interviews and workshops involved 26 experienced PMI professionals. The workshop groups were asked to evaluate the preliminary findings and to elaborate, refine and correct any points of disagreement or inconsistencies.

Overall, data was captured from 33 hours of individual and focus group interviews and included 373 transcribed pages. The semi-structured interviews and workshops focused on identifying the most common performance trajectories over time, and the causal relationships the interviewees believed were responsible for driving those performance outcomes. In addition, over 400 pages of industry reports and studies on post-acquisition integration were reviewed. Insights from the interviews and group workshops were triangulated with data from the industry reports and publications.

The final causal loop diagram captures the process theory of a PMI over time that emerged from the data. After the causal loop diagram of the process theory was finalized, it was converted into a simulation model to test the internal validity of the theory and examine the dynamic consequences of the interdependent set of causal relationships.

## RESULTS

### Typical Patterns of Behavior

Four commonly observed PMI performance outcomes—in terms of the recurring annual financial synergies realised as a result of the integration work over time—emerged from the interview data. Figure 1 shows these four reference modes over a 60-month time horizon: (1) Fulfilled Expectations, (2) Below Forecast, (3) Synergy Creep, and (4) Death Spiral. The interview data and industry reports indicated that that a 60-month (or five year) time horizon would capture the performance effects of a typical, large-scale integration. Many large-scale integrations require three years of integration effort, and extending the time horizon to five years provides adequate time in case of significant time delays and/or time after the integration project is completed to observe changes in performance. The initial forecast for annualized realized synergies is shown as a black dashed line in Figure 1, starting from 0 realized synergies at month 0 and increasing over time to reach 100% of the forecast at 36 months (i.e. the integration is planned to complete in 36 months from the start of the merger).

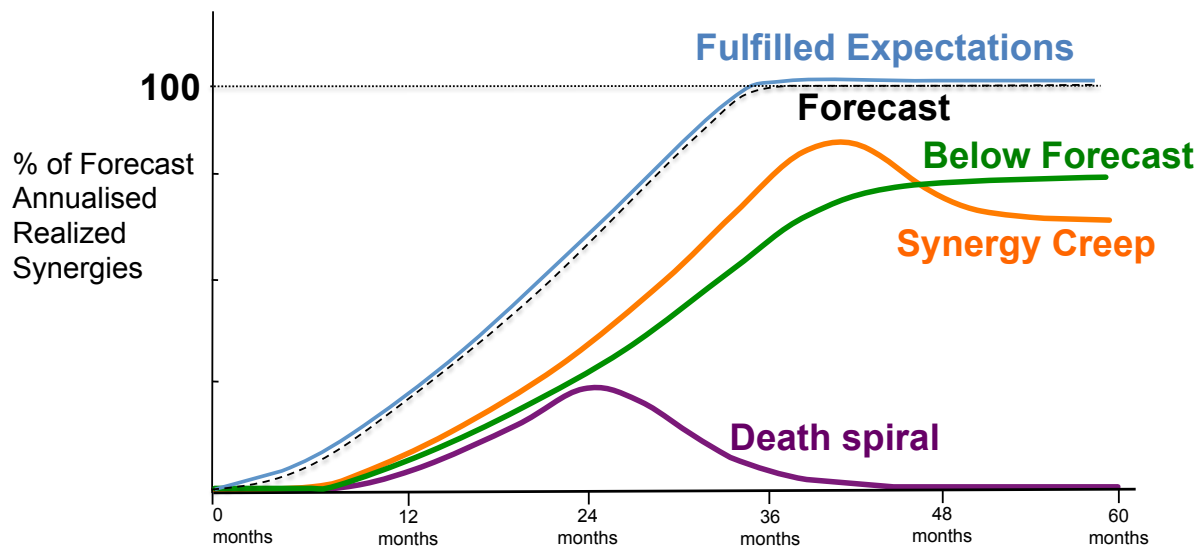


Figure 1: Four common PMI performance patterns of behaviour (reference modes)

The Fulfilled Expectations performance trajectory represents a PMI that rolls out as planned and the target synergies are achieved as forecast (plus or minus a small amount). This may occur due to strong management involvement in pre-deal planning, adoption of effective governance processes throughout the integration, communicating effectively about the integration throughout the process, adopting appropriate synergy targets, allocating adequate resources to the integration projects, maintaining high employee morale and commitment, and retaining talented employees. Effective management of all of these aspects of the integration drives realized synergies to achieve or exceed the initial forecast. As one expert explained,

“The best run processes feel very simple...it is about having people on the hook all the way through...the people who are ultimately responsible for doing the integration.”

The Synergy Creep performance trajectory is the second common performance outcome. The experts interviewed believe this pattern occurs to some extent in the majority of post-acquisition integrations. In a Synergy Creep PMI, most synergies may be initially achieved as planned, but then the energy and enthusiasm for synergy initiatives wane as the end of the integration project approaches, management gets distracted finding and starting new projects or roles, and management focus moves away. As a result, synergy monitoring and tracking declines or stops.

Once integration synergy tracking declines or stops, there is a claw back of cost savings or loss of revenue enhancement gains. Interviewees referred to this process as “creep.” For example, employees that were made redundant as part of the cost saving plans, are later re-employed as contractors. One expert, while drawing the synergy creep pattern for realized synergies, explained:

“So often you'll see synergies probably not tracked with the right amount of rigor. And I'll give you a classic example...we think we can reduce costs by about \$2 million bucks by making a whole bunch of redundancies in our finance department. But then you find that six months down the line all of a sudden you've got rid of your fifteen or twenty people but suddenly you've got seven or eight new contractors working, providing services because you got rid of all these people, and now you've got contractors. Ultimately the actual impact to the P&L is potentially increased costs or costs haven't gone down by the amount that you initially thought. They did go down initially but it's crept back into the business.”

The Below Forecast PMI performance trajectory occurs when outcomes are consistently below forecast. Some synergies are realized from the integration but not all of the synergies are achievable or there are substantial delays. As a result, the total realized synergies end up lower than forecast. Fatigue occurs where the integration project continues for longer than initially expected. Integration fatigue decreases commitment to the integration as enthusiasm wanes. Both integration fatigue and declining commitment decrease the pace and the quality of work on the integration initiatives resulting in a lowered rate of synergy realization and amount of expected synergies captured. An expert explained that the Below Forecast scenario is initially the outcome of the difference between forecast synergies and actual synergies realized over time as a result of low quality assessment of synergies in the due diligence phase of the project (pre-integration):

“If the synergies that you came up with up front aren't right, if your assumptions were bad, you need to go out and find some more synergies, because we still need to realize that. People actually get fatigued and tired of continually trying to find and chase synergies.”

The fourth and final PMI performance trajectory, the Death Spiral, occurs when the pressures of the integration are not well managed and they “break the business.” There may be



numerous initial causes for pressure to occur, but poor management decisions and processes create the downward spiral. Initial pressures may be the result of unachievable synergy targets. Poor assessment of synergies may drive up levels of fatigue and drive down management commitment, especially when management is, “given a KPI that is something he doesn’t believe in.” Both reduce the rate of synergy realisation and the amount of expected synergies achieved.

When pressure to achieve new synergies is poorly managed then rising levels of uncertainty leads to higher levels of voluntary turnover, and in turn further escalation of uncertainty, triggering numerous feedback effects that drive the deterioration in performance outcomes. Rising fatigue leads to further declines in commitment, which in turn undermines productivity and quality. These feedback effects are exacerbated by a declining level of experience in the organization as a result of unintended employee departures. Also, these feedbacks add costs and delays to the integration process that have flow on effects to the broader business. Once activated, these feedbacks can cause a downward spiral in the post-acquisition integration. One expert consultant explains the death spiral effect:

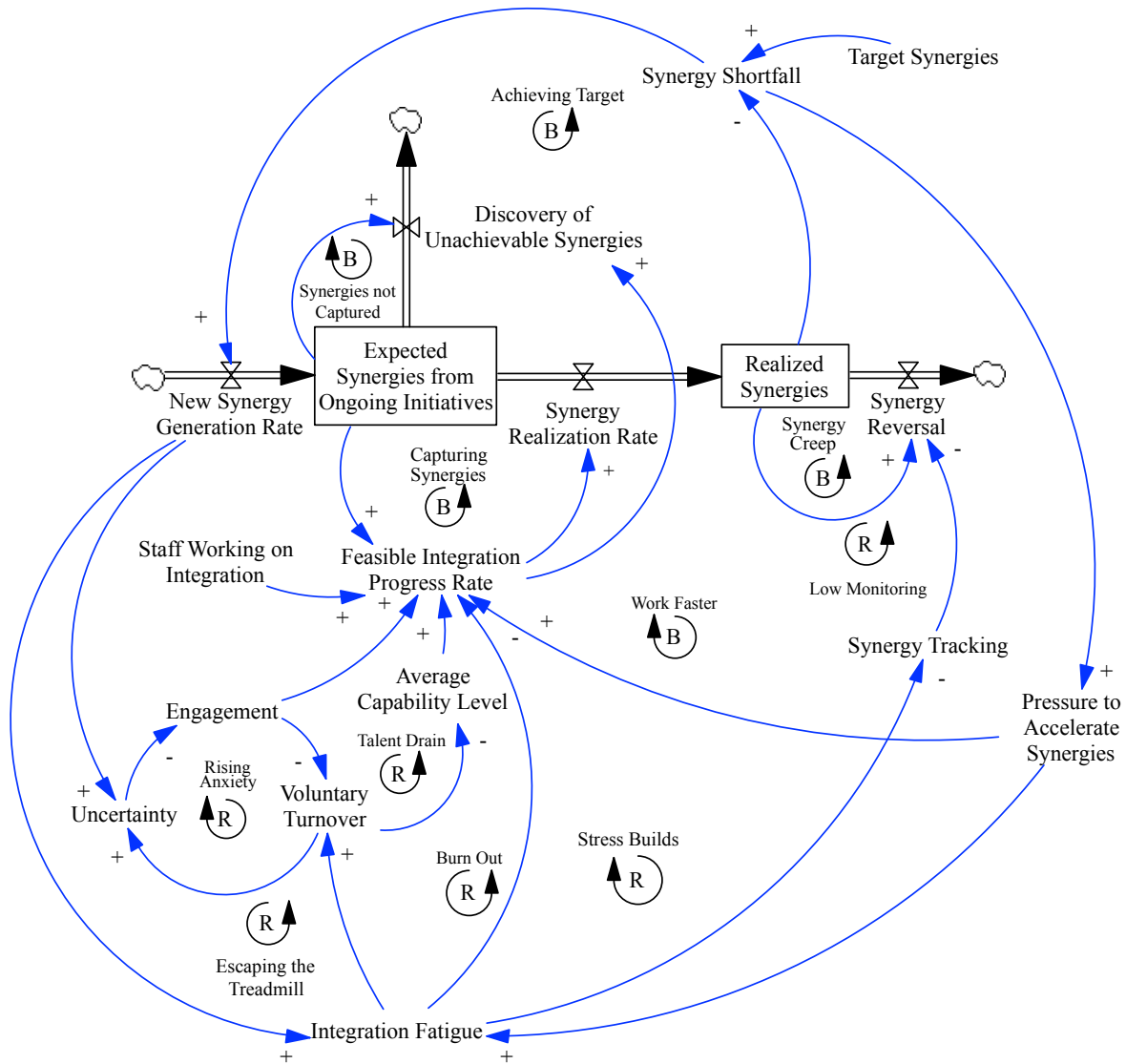
“It is a cancer...it is debilitating...it creates a negative vibe that impacts value and performance...it is a distraction to everything and people do not want to be there and it is usually your star performers that leave...it is like a death spiral effect and it is hard to get momentum around the business to drive the integration program...and people talk to their customers about it.”

The Death Spiral trajectory results in an initial period of increasing synergy realization followed by declining synergy realization over time.

### **Causal Loop Diagram of a Process Theory of M&A integration**

A causal loop diagram was developed iteratively throughout the data collection process to capture interviewees’ beliefs about the causal relationships responsible for generating the four

behavior modes. The causal loop diagram in Figure 2 portrays an M&A integration from the start to finish of the integration project, and is a simplified version of the full feedback structure.



**Figure 2: Causal Loop Diagram of the M&A Integration Process**

Starting in the top half of the diagram, Target Synergies are formulated as an exogenous input to the model that arise from the due diligence phase of the acquisition. The realisation of Target Synergies motivates the integration process. Target Synergies may be realized through revenue uplift or through cost savings delivered by the integration. As an illustrative example, target synergies may be forecast to total \$150 million per annum, with management expecting

that this total value can be realized over a three-year period and then continue thereafter (i.e. a recurring synergy value year on year).

The stock of Expected Synergies from Ongoing Initiatives includes the synergies associated with integration initiatives currently in progress and yet to be delivered. As the integration synergy initiatives advance, the expected synergies are either captured at the Synergy Realisation Rate through the balancing loop Capturing Synergies, or discovered to be unachievable at the Discovery of Unachievable Synergies rate through the balancing loop Illusory Synergies. The rate of progress in realizing synergies is the Synergy Realisation Rate and is determined by the Feasible Integration Progress Rate, which is a function of both the quality and pace of work completion.

The Discovery of Unachievable Synergies rate is determined by the amount of synergies incorrectly assumed to be achievable in due diligence and the Feasible Integration Progress Rate. Despite efforts to validate the existence of synergies during the due diligence evaluation phase, some synergies initially believed to be achievable are inevitably discovered not to be achievable. For example, interviewees highlighted that often the difficulty and one-off costs associated with shutting down legacy IT systems leads to abandoning such initiatives. In these cases, the recurring cost saving synergies or revenue uplift benefits expected from upgrading to common platforms are classified as Unachievable Synergies. Discovering such synergies are unachievable occurs gradually, as work on the integration progresses.

Also, the Feasible Integration Progress Rate influences the level of unachievable synergies when the staff working on the synergy initiatives perform low quality work and/or cut corners on the project due to fatigue. This leads to a lower fraction of expected synergies being achieved. For example, a lack of attention to servicing customers may result in the loss of potential revenue

synergies from cross-selling products, or a difficult task is put in the “too hard basket” and classified as unachievable. Employees that are not fatigued maintain high quality work, persist on the initiatives, and realise the expected synergies. Integration Fatigue reduces the fraction of achievable synergies captured and increases the Unachievable Synergies Rate.

As they are captured, realised synergies accumulate in the stock of Realised Synergies. However, Realised Synergies can be lost over time—at the Synergy Reversal rate—when Synergy Tracking is less than 100% effective. This reversal is shown in Figure 2 as an outflow from the stock of Realised Synergies, forming a third balancing loop labeled Synergy Creep. Interviewees described this process as a claw back of cost savings or loss of revenue enhancement gains. For example, employees that were made redundant as part of the cost saving initiatives, are re-employed as contractors six months later.

As the integration progresses, management continuously compares Realised Synergies (plus Expected Synergies from Ongoing Activities) with Target Synergies to monitor whether there is a Synergy Gap—a shortfall between identified and realised synergies and target synergies. When there is a Synergy Gap due to some of the expected synergies being unachievable, management exerts pressure to search for, identify, and generate new synergies to close this gap. As the Synergy Gap increases, the New Synergy Generation Rate increases, and in turn this increases the stock of Expected Synergies from Ongoing Initiatives, and over time the stock of Realised Synergies. This process forms a balancing loop Achieving Target.

Generating new synergies results in additional integration tasks over and above the work initially planned for the integration. For example, after the completion of initially planned redundancies there may be a second round of redundancies when additional cost savings are pursued. These further changes increase uncertainty for employees and are captured in Figure 2

by the positive arrow between New Synergy Generation Rate and Uncertainty. Uncertainty is associated with perceived decreases in job security, influence, and control. Increasing Uncertainty decreases employee Engagement (Schweiger & DeNisi, 1991) which is related to increased employee turnover. Interviewees commented that it was usually the most experienced people who left first as they were able to more easily find work elsewhere. Employee departures decrease Average Capability Level, which reduces Feasible Integration Progress Rate, and undermines the Synergy Realisation Rate. This process closes a reinforcing loop labelled Talent Drain.

High levels of Voluntary Turnover drive instability within the organisation and further uncertainty among employees. This relationship is captured in Figure 2 as a positive arrow between Voluntary Turnover and Uncertainty. This process closes another reinforcing loop labelled Rising Anxiety.

The New Synergy Generation Rate also creates Integration Fatigue throughout the organization. Integration Fatigue arises because of a continuous search for new synergies. Over time, employees tire physically and emotionally of searching for and trying to extract more synergies. As a consequence, cynicism toward the integration increases, and employees experience decreasing energy and enthusiasm for the integration project. This relationship is captured in Figure 2 with an arrow between New Synergy Generation Rate and Integration Fatigue. Integration Fatigue was explained by one interviewee: “[Integration] fatigue, if they're still chasing synergies, often comes in. So if people who've been on the program since the beginning start to get tired, they lose their energy and enthusiasm.” The onset of Integration Fatigue is described by another interviewee: “People continually get asked ... to go out and find some more synergies, because we still need to realise that [the forecast synergies]. And people

actually get fatigued and tired of continually trying to find and chase synergies ... literally where people are just 'I can't handle this anymore', 'I can't find any more synergies.'" Integration fatigue has numerous effects on the integration process including on effectiveness of Synergy Tracking, Feasible Integration Progress Rate, and Voluntary Turnover.

Integration Fatigue is a general exhaustion of energy for the M&A integration. Fatigue causes declining focus and commitment to the project outcomes, and results in a decrease in synergy monitoring and declining tracking of synergy initiatives. Declining effectiveness of Synergy Tracking increases the rate of Synergy Reversal, forming a reinforcing loop labelled Low Monitoring. Reversal of synergies erodes the stock of Realised Synergies, increasing the Synergy Gap, leading to rising New Synergy Generation Rate, increasing Integration Fatigue, and declining effectiveness of Synergy Tracking.

Rising Integration Fatigue also decreases the Feasible Integration Progress Rate, as shown by the negative polarity causal relationship in Figure 2. Fatigue decreases the quality and pace of work on integration tasks. This deterioration decreases the Synergy Realisation Rate, and creates a fourth reinforcing loop labelled Burn Out.

In addition, rising Integration Fatigue results in exhausted and disenchanted employees looking for new work and departing the organisation through increased Voluntary turnover. As Voluntary Turnover rises, the Average Capability Level erodes, the Feasible Integration Progress Rate declines, the Synergy Realisation Rate falls, the stock of Realised Synergies decreases (relative to what it would have been), the Synergy Gap increases, the New Synergy Generation Rate increases, and Integration Fatigue increases further. These relationships form the fifth reinforcing loop labelled Escaping the Treadmill.

A sustained Synergy Gap may also lead to managerial Pressure to Accelerate synergies with the intention of increasing the pace of synergy realisation and closing the Synergy Gap. This has two separate effects. When management applies Pressure to Accelerate synergies, the Feasible Integration Progress Rate increases, the Synergy Realisation Rate increases, the stock of Expected Synergies from Ongoing Initiatives increases, and the Synergy Gap decreases. These relationships form a balancing loop labelled Work Faster and work as management intended.

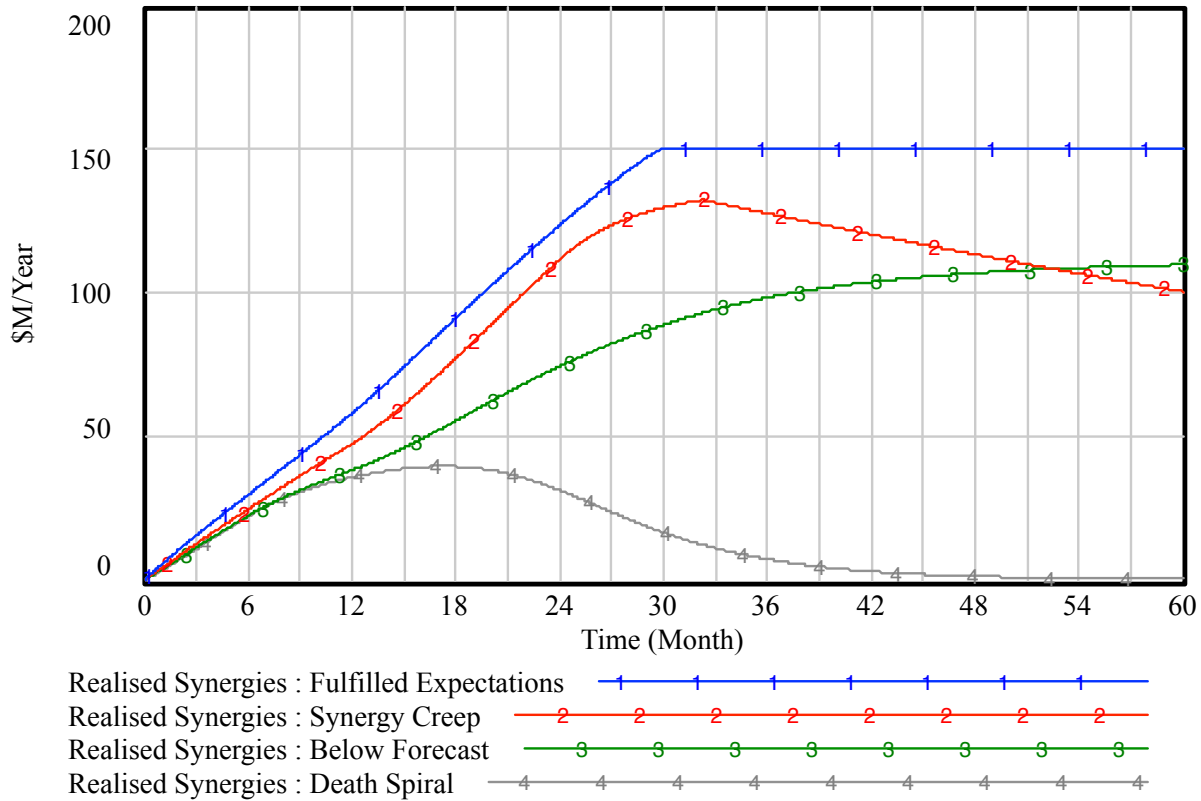
However, increasing Pressure to Accelerate also increases Integration Fatigue due to the stress from over-working, which undermines the Feasible Integration Progress Rate, reduces the Synergy Realisation Rate, decreases Realised Synergies (relative to what it would have been), and increases the Synergy Gap. This process forms a reinforcing loop labelled Stress Builds.

Overall, the causal loop diagram in Figure 2 encapsulates five balancing loops and six reinforcing loops our interviewees believe were primarily responsible for driving the evolution of realised synergies over time. This process theory of an M&A integration is intended to represent the causal relationships involved in generating all four behavior modes identified from the interview data. Once the causal loop diagram was finalized, we converted it into a simulation model to test whether the proposed feedback structure could generate the four behavior modes.

### **Simulation experiments**

The simulation model enables us to test whether the process theory in the causal loop diagram is capable of generating the performance patterns identified in our interviews. We extensively tested each model sector as the full model was being constructed and then performed comprehensive sensitivity tests of the full model. Figure 3 shows the results of simulation experiments replicating the four reference mode behavior patterns, and Table 1 provides the parameter values used to generate each behavior mode. Figures 4 – 7 show the evolution of the

key variables responsible for driving each of the four behaviour modes: Uncertainty, Integration Fatigue, Experience & Skill (i.e. Average Capability Level), and effectiveness of Synergy Tracking.



**Figure 3: Simulation experiments replicating the four behavior modes for Realised Synergies**

The Fulfilled Expectations performance pattern reflects a successful outcome for the post-merger integration process in which the forecast realized synergies are achieved or exceeded. In such cases, a high quality due diligence process leads to realistic forecast synergies with very low (or zero) unachievable synergies built into the target synergies. This eliminates shortfalls between target and actual realized synergies, removing the need to generate new synergies as the integration project unfolds. In turn, this helps limit integration fatigue and the deleterious effects of fatigue such as rising voluntary turnover, reducing synergy tracking, and lower quality work on the integration. Also, high quality management communication about the integration helps



keep uncertainty about the changes stemming from the integration low. As a result, engagement to the organization and commitment to the integration remain high. This represents the ideal integration process scenario in which everything goes to plan.

**Table 1: Parameter values adjusted to generate four behaviour modes and policy analyses**

Parameter ( <i>variable that is influenced in CLD</i> )	Fulfilled Expectations	Synergy Creep	Below Forecast	Death Spiral	Intervention 0 - 20 mths	20 mths +
<b>Base Unachievable Synergy Fraction</b> ( <i>Discovery of Unachievable Synergies rate</i> )	0	0.2	0.3	0.3	0.3	0.3
<b>Time for Synergy Reversal</b> ( <i>Synergy Reversal rate</i> )	NA	12	NA	4	4	NA
<b>Quality of Integration Communication</b> ( <i>Uncertainty, Integration Progress Rate</i> )	1	0.9	0.85	0.7	0.7	1.4
<b>Fraction of new synergies from redundancy</b> ( <i>Uncertainty, Average Capability Level</i> )	0	0.2	0.3	0.3	0.3	0
<b>Normal Work Quality</b> ( <i>Discovery of Unachievable Synergies</i> )	1	0.95	0.95	0.95	0.95	0.95
<b>Willingness to Slip Schedule</b> ( <i>Pressure to Accelerate synergies</i> )	0	0.5	1	0.2	0.2	1
<b>Switch for Synergy Reversal</b> ( <i>Synergy Reversal rate</i> )	0	1	0	1	1	0
<b>Time to Change Uncertainty</b> ( <i>Uncertainty</i> )	2	2	2	6	6	6
<b>Time to Identify New Synergies</b> ( <i>New Synergy Generation Rate</i> )	3	3	3	6	6	6

In the Synergy Creep scenario the integration process begins with a fraction (20%) of the target synergies assessed in due diligence as unachievable (although management have to discover this as the integration progresses). As a result, the Synergy Gap increases and leads to a need to generate new synergies to fill the shortfall. Generating new synergies increases uncertainty and integration fatigue (slightly above the level experienced in the ideal scenario). In response, voluntary turnover rises, employee engagement falls, experience and skill (avg

capability level) decline, the feasible integration progress rate decreases, and synergy tracking effectiveness falls. These feedbacks lead to a reversal of realised synergies and the stock of Realised Synergies decreases from Month 33 onward in this scenario.

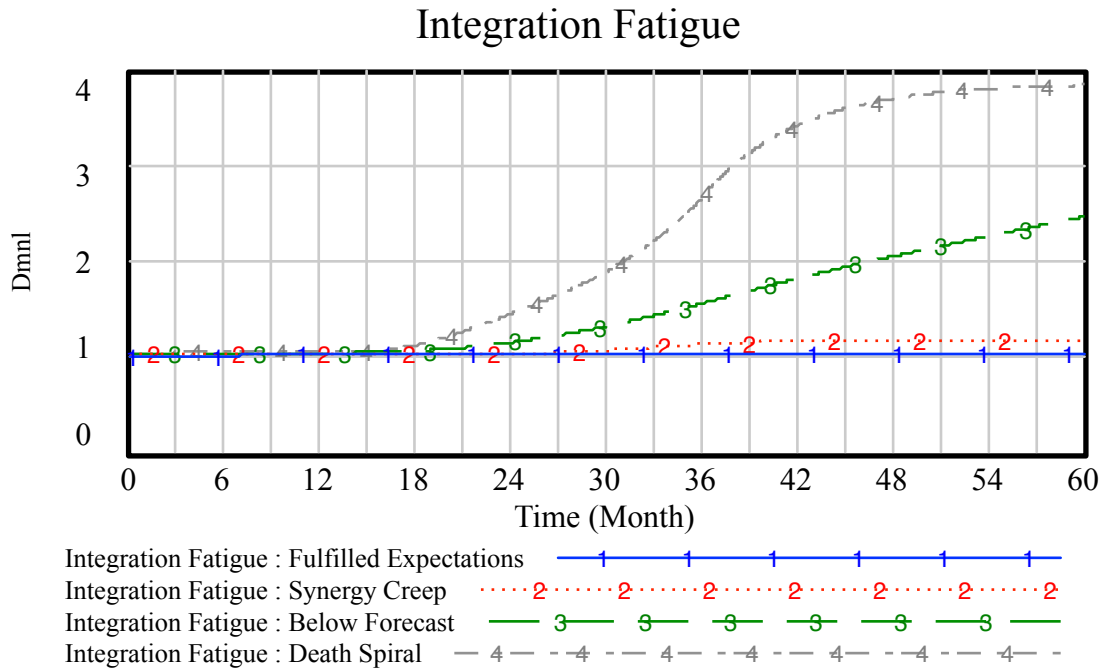


Figure 4: Simulation experiments replicating the four behavior modes for Realised Synergies

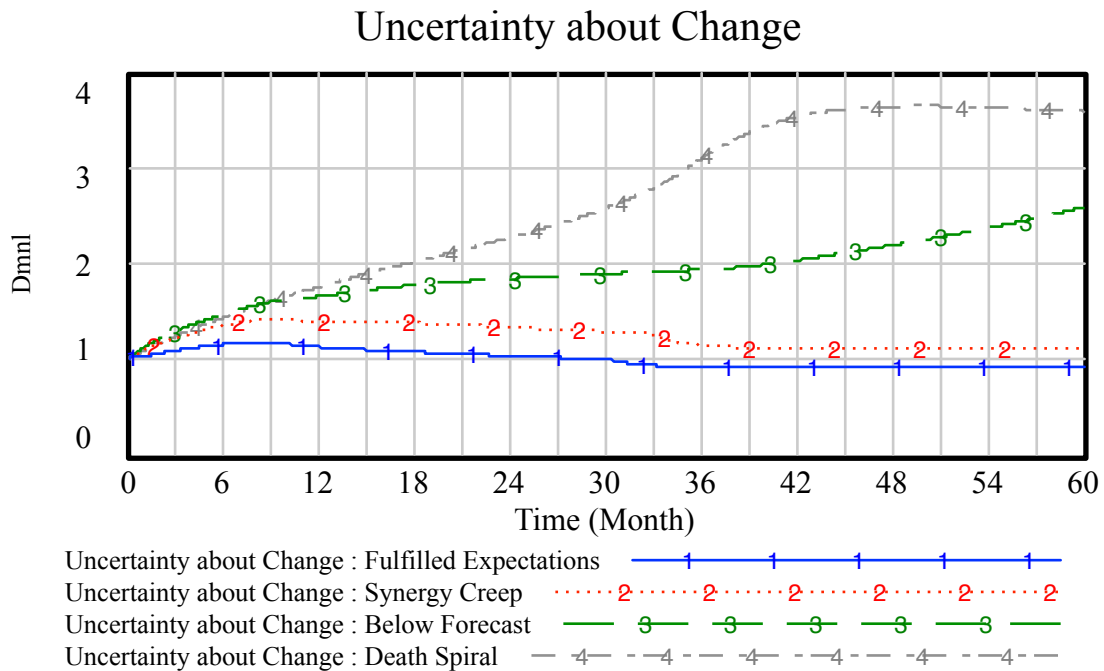


Figure 5: Simulation experiments replicating the four behavior modes for Realised Synergies

## Experience and Skill Index

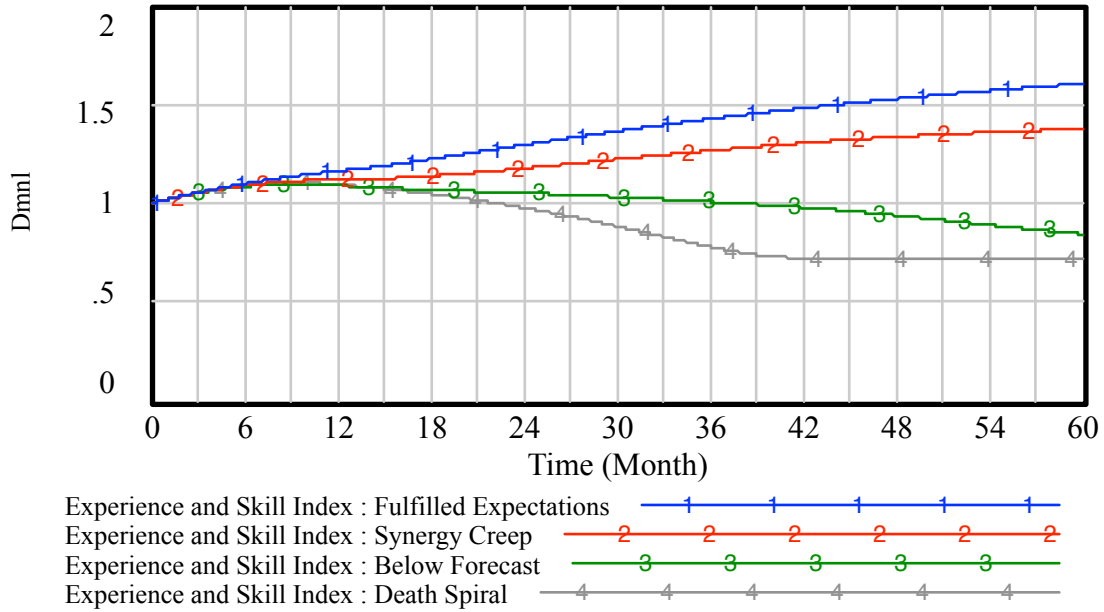


Figure 6: Simulation experiments replicating the four behavior modes for Realised Synergies

## Effectiveness of Tracking

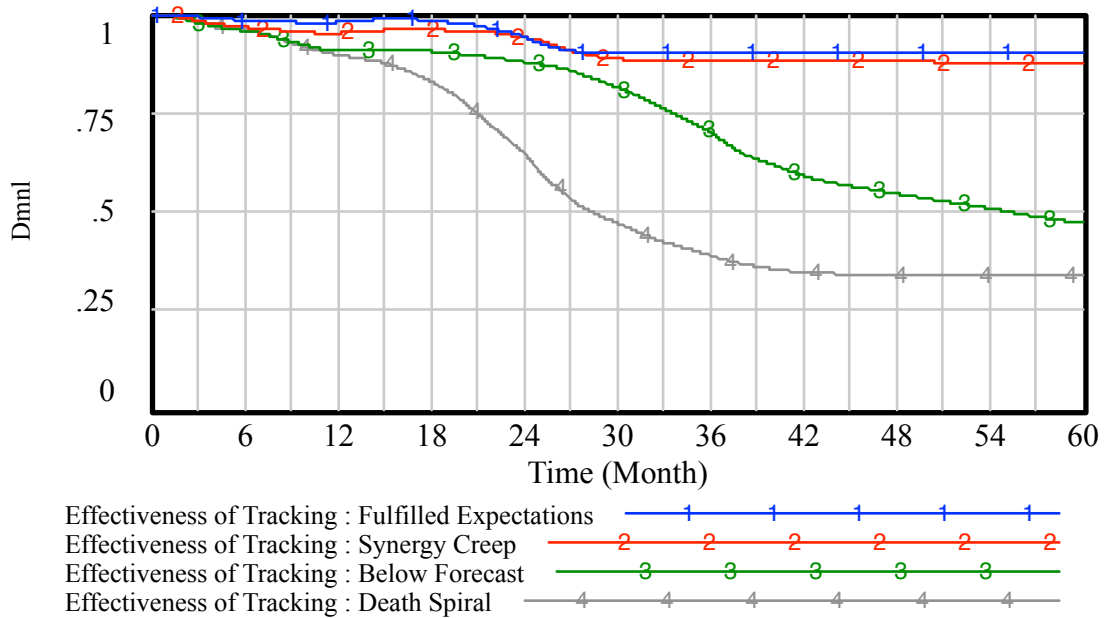


Figure 7: Simulation experiments replicating the four behavior modes for Realised Synergies

The Below Forecast performance pattern involves a higher fraction of target synergies (30%) assessed in due diligence as unachievable and lower quality management communication about the integration. The synergy gap increases and leads to the generation of new synergies, which

increases integration fatigue. Uncertainty rises in response to the new generation of synergies and also due to lower quality communication. Rising fatigue and uncertainty lead to falling employee engagement, rising voluntary turnover, and declining experience & skills (avg capability level). All of these factors decrease the feasible integration progress rate and result in further shortfalls between target and actual realised synergies and stimulating the reinforcing feedbacks.

In the Death Spiral simulation, a synergy gap emerges early in the integration due to a fraction of the target synergies (30%) being unachievable. Generating new synergies to replace unachievable synergies increases uncertainty and activates the Rising Anxiety and Talent Drain reinforcing loops in Figure 2. Engagement declines and voluntary turnover rises. Escalating voluntary turnover feeds back to increase uncertainty, as remaining employees see many of their friends and co-workers departing the organisation and roles are restructured. Increasing voluntary turnover also erodes average capability levels (experience & skills), leading the feasible integration progress rate to fall and causing further shortfalls between target and actual realised synergies. Continuously generating new synergies to close the Synergy Gap also leads to increasing Integration Fatigue. Over time, increasing fatigue reduces the effectiveness of synergy tracking and activates the Low Monitoring reinforcing loop in Figure 2.

Increasing fatigue also reduces Feasible Integration Progress Rate as employees' work quality and pace declines, activating the Burnout reinforcing feedback loop in Figure 2. The quality of work completed by fatigued employees reduces the fraction of achievable synergies captured and increases the proportion of synergy work cast aside by fatigued employees as unachievable and the Discovery of Unachievable Synergies rate increases. Rising Integration Fatigue also leads to increasing Voluntary Turnover of staff as fatigued employees choose to exit

the organisation and take up employment elsewhere. The effect of fatigue and declining engagement deliver high levels of voluntary turnover in the Death Spiral scenario. Escalating voluntary turnover decreases the experience and skill retained in the organisation and activates the Escaping the Treadmill reinforcing loop in Figure 2, and leads to declining experience and skill levels (avg capability level) over time. Decreasing capability levels undermine the feasible rate of progress on integration initiatives. As a result, the Synergy Gap continues to increase and the PMI falls further behind.

To get the integration project back on track and close the Synergy Gap, management attempt to realise synergies more rapidly by applying Pressure to Accelerate the realisation of synergies. Rising Pressure to Accelerate synergies increases the pace of completion of integration tasks and the Feasible Integration Progress Rate, activating the Work Faster balancing loop and increasing the Synergy Realisation Rate. However, rising Pressure to Accelerate synergies also increases Integration Fatigue as staff work harder and longer, and the error rate increases as fatigued employees work faster and quality deteriorates activating the Stress Builds reinforcing loop and further driving the deterioration in outcomes. In the Death Spiral scenario, managerial policies trigger all six of the reinforcing feedback loops shown in Figure 2 that ultimately “break the business” and lead to a downward spiral in performance. Realised Synergies initially increase early in the integration, but peak in month 18 of an integration project that is originally scheduled for completion in 36 months. After month 18, Realised Synergies decline until almost all of the Realised Synergies have been lost.

Overall, the simulation results demonstrate how different initial conditions and different policies to manage the post-merger integration process can generate all four of the performance patterns identified from the interview data. Next we examine a number of interventions to see

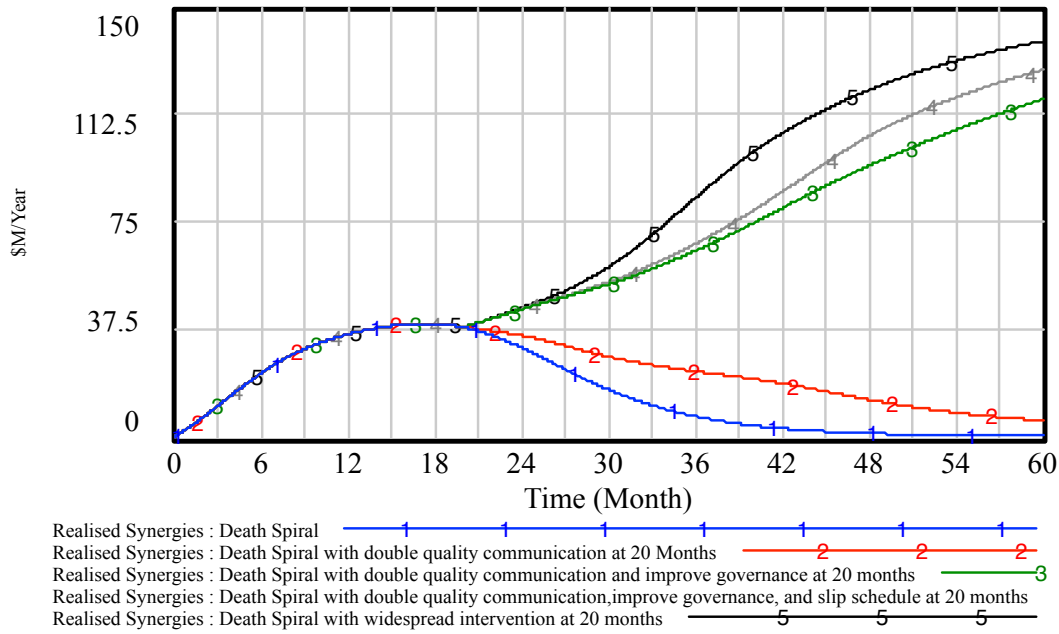
what strategies management can adopt to turn around a PMI that is headed for the Death Spiral scenario.

### **Policy Analysis**

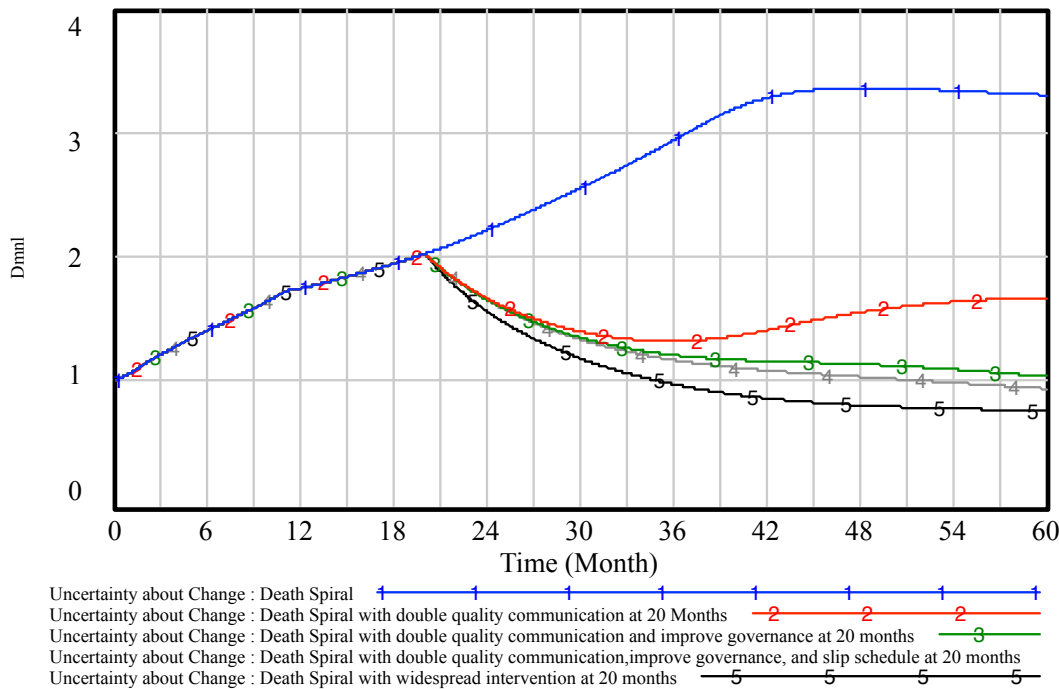
During the focus group interviews the experts discussed how management can intervene to stabilize and recover from the downward spiraling effect on performance outcomes of the death spiral scenario. The interviewees explained and drew a fifth scenario where “intervention” enabled the business to recover and increase value captured from the integration. In this scenario management react to the poor outcomes of the death spiral scenario with a review of the strategy for integration implementation and choose between several management decision levers to intervene and recover from the scenario of declining performance outcomes. One lever is the quality and amount of management communication about the integration process. An increase in the quality and amount of communication can decrease uncertainty.

To test the outcomes of changes in management policies, we parameterised the model for the Death Spiral scenario for the first 20 months. Table 1 provides parameter values for the intervention scenarios. Line 1 in Figure 8 shows the performance outcomes with the model parametised for the death spiral scenario for the entire period of integration. The first intervention we tested was doubling of the quality of communication about the integration at 20 months and holding it constant at that level. The outcome is a slightly higher level of realised synergies from 20 months onwards as shown in Line 2 in Figure 8. The effect is the result of a lower level of uncertainty about the integration, the outcomes for uncertainty are show as line 2 in Figure 9. Decreasing uncertainty limits the negative effects of the reinforcing loops Rising Anxiety and Talent Drain on synergy realisation. The result is a moderate improvement in

performance outcomes and in integration fatigue shown as line 2 Figure 10, but poor governance of the integration results in the realised synergies being reversed over time and rising fatigue.

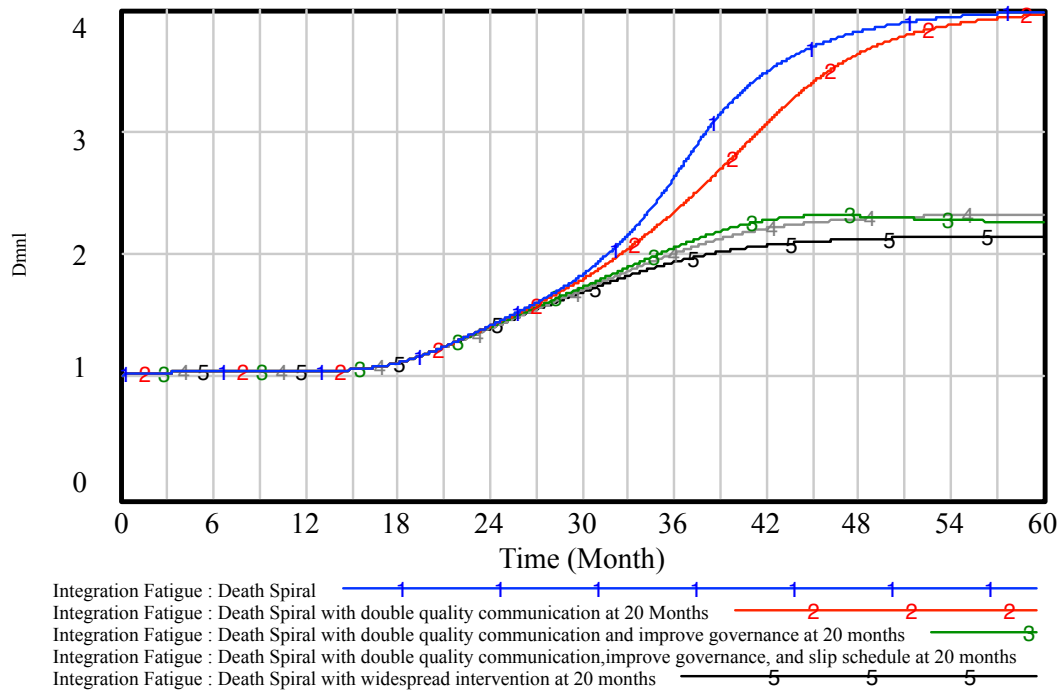


**Figure 8: Performance outcomes of management intervention at 20 months**



**Figure 9: Declining uncertainty about the integration due to management intervention**

We then tested the sensitivity of outcomes to a change in management policy on governance and in particular the implementation of a robust tracking program at 20 months. The effect is shown in line 3 of Figure 8. In this scenario realised synergies are retained after 20 months when increased effectiveness of synergy tracking stops the reversal of realised synergies by halting the negative effects of the Low Monitoring reinforcing loop. Eliminating the continual search for new synergies to replace reversed synergies relieves integration fatigue as shown in line 3 of Figure 10.



**Figure 10: Declining integration fatigue due to management intervention**

Another management lever includes reducing the pressure to accelerate synergy generation by extending the time for completion of the integration project. Decreasing the pressure to accelerate leads to a decrease in uncertainty and an increase in realized synergies as shown in line 4 in figures 8 and 9. Yet integration fatigue, as shown in line 4 of Figure 10, remains at similar levels as employees are asked to continue working on the integration tasks for a period longer than expected.



A final management policy lever we examined is the decision about the amount of employee redundancies implemented when generating new synergies to close the synergy gap. Decreasing the percentage of new synergies from redundancies from 30% to zero (from month 20 onwards) decreases uncertainty (line 5 in Figure 9), increases the skill level retained in the organisation, decreases integration fatigue (line 5 in Figure 10) as the improved skill level improves work efficiency, and further increases realised synergies (line 5 in Figure 8).

This sensitivity analysis indicates that the PMI performance outcomes in the simulation model are the result of numerous feedback effects that can be managed by intervention through changes in management policies. Management intervention through changes in policies for implementation of the integration has the potential to reverse and recover past losses.

## **DISCUSSION**

The contributions of this study include: (1) Identification of four common M&A integration performance outcomes over time (i.e., Fulfilled Expectations, Synergy Creep, Below Forecast, and Death Spiral); (2) Identification of new constructs and relationships affecting the performance outcomes of the M&A integration processes including Integration Fatigue, New Synergy Generation Rate, and Pressure to Accelerate synergy realisation; (3) A causal loop diagram capturing a process theory of the causal relationships and feedback loops that drive M&A integration performance dynamics; and (4) an integrated simulation model to test the internal validity of this process theory and explore the dynamics.

Our findings also have direct implications for research on M&A implementation decisions. Three implementation decisions for which there is a strong theoretical basis in addition to empirical support are: level of structural integration (Buono, 2003; Haspeslagh & Jemison, 1991; Pablo, 1994; Shirivastava, 1986; Zaheer, Castañer, & Souder, 2013), speed of integration

(Cannella & Hambrick, 1993; Haspeslagh & Jemison, 1991; Homburg & Bucerius, 2006; Inkpen, Sundaram, & Rockwood, 2000; Ranft & Lord, 2002), and top management team turnover (Cording et al., 2008; Walsh, 1988; Zollo & Singh, 2004). Our findings extend theory about these decisions.

First, the level of structural integration that is desired refers to the extent to which the units/functions of the acquired and target businesses will be combined and harmonized (Pablo, 1994). The level of integration has implications for the extent of changes required in functional activity arrangements, organisational structures and systems, and cultures of the combining organisations to facilitate their consolidation into a functioning whole. Research on the level of integration has assumed a single decision regarding level of integration held throughout the integration process. Our findings show that in large-scale integrations that often span 2-3 years (and sometimes longer), the desired level of integration typically changes over time in response to the Synergy Gap.

Second, speed of integration refers to the amount of time from when the acquirer takes ownership of the target until the desired level of integration of systems, structures, activities, and processes has been achieved (Homburg & Bucerius, 2006). Cannella and Hambrick (1993) argued that a fast integration is advantageous because it minimizes disruption to employees. Homburg and Bucerius (2006) argued that a fast integration reduces the time during which competitors may profit from an acquirer being distracted by integration issues, they found that a faster speed of integration was positively associated with M&A success. In contrast, Ranft and Lord (2002) found that a slow speed of integration is more appropriate to give employees in both businesses adequate time to understand each other. Research on speed of integration assumes that speed of integration is consistent throughout the integration. However, we find that

managers frequently adjust the speed of integration throughout the duration of the integration project in response to the Synergy Gap. Managers typically accelerate the speed of synergy initiatives in order to achieve publicly announced financial performance targets related to the M&A. In addition, we find that managerial pressure to accelerate the speed of integration increases fatigue, reduces synergy realisation rate, undermines tracking of the synergies, and increases voluntary employee departures.

Finally, the percentage of the top management team that is replaced after an M&A is another important strategic decision in the M&A integration process. Research shows that replacing the target's top management team results in reduced economic performance when the management team is a high quality and capable team, because it entails the loss of human and social capital (Zollo & Singh, 2004). Zollo and Singh reported that top management replacement is increasingly correlated with poorer performance when the resource quality of the acquired unit is high. Research on the level of top management replacement assumes that managers choose the level of replacement one time at the start of the integration project. We find that the level of management replacement changes over time as new synergy initiatives are generated to close any synergy gaps. This increases uncertainty, erodes employee engagement, undermines capability levels, and decreases realised synergies that are ultimately captured as part of the integration.

Our findings also extend the Yu et al. (2005) study by identifying additional feedback loops responsible for driving M&A integration performance outcomes. We identify 5 new balancing feedback loops and 6 new reinforcing feedback loops that impact M&A integration performance outcomes. The simulation model helped examine the dynamic consequences of these interdependent feedback loops, and showed the process theory is capable of generating the four

performance patterns identified in our interviews. Further simulation experiments can help generate additional insights about how to manage M&A integrations to create value.

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