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▶ **Gender identity and breast cancer campaigns**

by Stefano Puntoni, Steven Sweldens and Nader T. Tavassoli

▶ **Crisis performance predictability in supply chains**

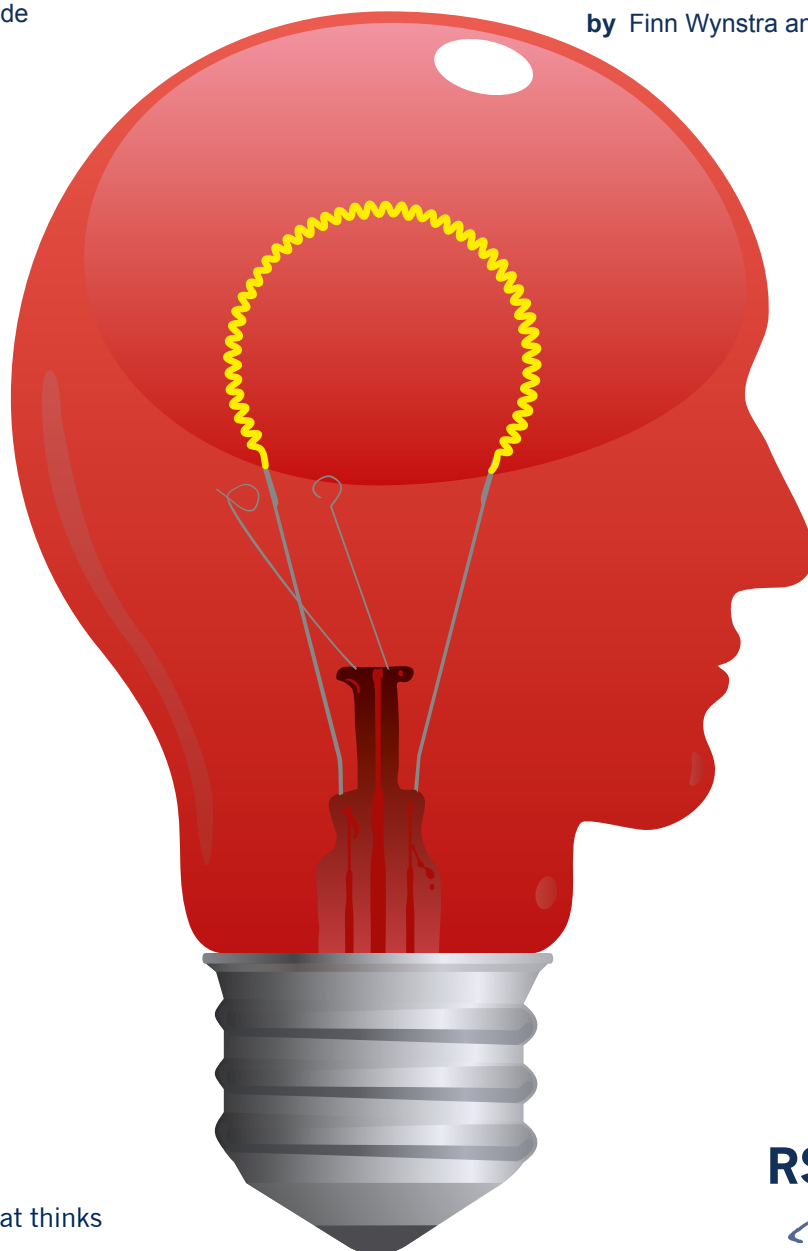
by Michaéla C. Schippers, Laurens Rook and Steef van de Velde

▶ **Understanding servant leadership**

by Dirk van Dierendonck

▶ **Purchasing superior-value offerings effectively and successfully**

by Finn Wynstra and James C. Anderson



Crisis performance predictability in supply chains

by Michaéla C. Schippers, Laurens Rook and Steef van de Velde

It is widely acknowledged that supply chain ‘glitches’ may have detrimental effects on company performance and shareholder wealth. However, much less is known about the decision makers themselves, the way they manage crises, and whether their actions are predictable.

Matching inventory to customer demands well requires excellent supply chain management, which in turn relies on a smoothly running logistics operation. To investigate this area further, we decided to conduct a study based on behavioural and crisis-decision theory, and applying the hypothesis that reflexivity and regulatory focus can predict and influence team decision-making and performance. These two human attributes require further explanation.

The first, team reflexivity, is a team’s ability to consciously and reflexively react to changing and fluid situations, and adapt accordingly. Reflecting on expected changes in the market and acting proactively is vital for the profitability and survival of companies.

The other attribute, regulatory focus – the propensity to take instead of avoid risks – could also play a critical role. Promotion focus, one type of regulatory focus, is where the ultimate goal sought is accomplishment and attaining positive outcomes, and where

individuals are more inclined to explore all possible means to reach the goals they desire. In contrast, individuals with prevention focus, the other type of regulatory focus, seek the ultimate goal – safety, thus avoiding negative outcomes. Individuals with prevention focus tend to focus primarily on avoiding mistakes: actions or decisions that will produce negative outcomes.

All in the game

The engine behind our study was “Fresh Connection”, a team-oriented, logistics management simulation (involving a fictitious fruit juice supplier), developed by Involvation, a consultancy, which also runs it. Fresh Connection is used effectively in many companies to simulate real-life situations and challenges in the contemporary supply chain, and help train supply-chain management professionals to handle risks and insecurity, and achieve service levels while minimising costs.

Participants are divided into teams of four (our study used 81 teams) and the

game runs for seven weeks, where each week representing six months in real time. Each team is involved in taking both strategic and tactical decisions. At the end of every week, the simulation software calculates the operational consequences of these decisions, the results of which constitute the team’s starting point in the subsequent week. Performance is assessed by the team score of return on investment (ROI) of the company after each decision period.

We divided the game period into roughly three phases. In the Learning Phase, the teams are expected to learn as much as possible about the game and concentrate on getting the company on track for a good ROI. In week two, the Crisis Phase, teams are confronted with a challenge: the company replaces its normal carton containers with PET (plastic) bottles. Week three through seven is called the Steady Phase, during which no unforeseen crises take place, although some new products are introduced.

As predicted

Reviewing the results, we saw that performance for most teams improved rapidly in the Learning Phase. In the Crisis Phase, teams responded differently to the glitch. The main problem was that empty PET bottles took up much storage space, as opposed to empty carton containers



(which could be folded and stored away). In addition, teams had more options to base their decisions on. They had to adapt to this by either increasing their storage capacity, or increasing their orders for empty PET bottles. Not all teams realised how much extra space these bottles would take, and most teams had trouble adapting to the change.

This round (Crisis Phase) was crucial because the whole purpose of the game is to steer the company through crises and manage its supply chain successfully. Some teams reacted well and their performance did not dip by much; others had a large drop. We thought that reflexivity played a large role and looked at the processes playing out in those teams. Teams with a combination of high reflexivity and high promotion focus made better decisions and experienced a lower or no decline in ROI. Teams with a combination of low reflexivity, low promotion and low prevention focus performed worst during this Crisis Phase.

In the Steady Phase, most teams improved their performance, mainly because they became more familiar with the game and its workings, and learned from the regular feedback they received. Teams with a combination of low prevention/low promotion focus recovered best from the large dip during the crisis, and improved

relatively more than teams that managed to maintain a high level of performance in the first place, although they did not entirely catch up with the high-performing teams.

To sum up, we proposed and found that both team reflexivity and regulatory focus are associated with team decision-making and performance during a crisis. Our findings indicated that, in general, high scorers seem to be teams with a combination of high reflexivity and high

promotion focus. This appears to be due to a large difference in the Crisis Phase, where these teams experience the smallest decline in performance. The lowest performers were teams with a combination of low reflexivity, low promotion, and low prevention focus.

Team composition

Making decisions in a crisis may differ from making them under other circumstances. Hence, managers often face the dual challenge of selecting team members who make optimal decisions, and managing the team context to render it more conducive to optimal decision making and (financial) performance. Our study addresses this

challenge directly. First, it identifies the combination of reflexivity and regulatory focus as a possible route to more effective decision-making and performance, especially in times of crisis. Second, it shows that these relationships differ when the context changes, and that the team reflexivity level should match the level of promotion/prevention focus as well as the team context. ■

“Teams with a combination of high reflexivity and high promotion focus made better decisions...”

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