

Supply Chain Temple of Resilience, by Professor Richard Wilding OBE

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In March 2011, an earthquake and tsunami hit the north-eastern coastline of Japan. Honda, Toyota, Nissan and Subaru all had plants in or close to the affected region, and were forced to close them.

But worldwide, other automotive plants – both Japanese and non-Japanese -- were also forced to stop production, because of damage and disruption to tier 1, tier 2 or tier 3 suppliers' plants. From electronics equipment to paint, and from engines to gearboxes, huge numbers of components turned out to be sourced from Japan and its intricate supply chains. Worse, many of these were single-sourced—often not just to a single company, but to a single plant within that company.

[subhead] Call to action

For insurance professionals, dealing with such events is part and parcel of the job. But there's another, less obvious lesson to learn. Which is that supply chains are relatively unregarded -- until they fail, and break down.

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At which point, commercial consequences invariably kick in. Lost sales. Lost production. Disappointed customers. Additional costs. Reputational damage.

And the insurance industry isn't immune. It too has supply chains, and it too faces those same commercial consequences.

Look closely, and those supply chains are a complex network of organisations: insurers, brokers, the policy holder, the client (who may or may not be the policy holder), solicitors, loss adjusters, contractors – who must all work together.

And the better they work together, the lower the overall cost of that supply chain, and the quicker and more efficiently claims will be resolved. In the best case, clients will be thrilled by the ease of the claims process they encounter, and the support they receive at what may be a difficult time – thus creating long-term customer loyalty.

But likewise, as with any other industry, the insurance industry's supply chain is exposed to risk and disruption. Critically, for instance, the 'handovers' between the supply chain's various organisations are often a source of risk and failure, critically impacting the outcome for the ultimate customer.

And when considering supply chain risk, remember that ultimately, competition is not between individual companies offering insurance, but between the supply chains that they each manage and co-ordinate.

So how best to make supply chains more resilient? A conceptual framework that I call ‘The Temple of Supply Chain Resilience’ can help. Here’s how it’s built. *[Author recommendation: use or adapt the appropriate image we have, showing this process in action.]*

#### [subhead] The Foundation of Effective Supply Chain Strategy

Supply chain resilience is built upon the ‘foundation’ of an **Effective Supply Chain Strategy**—in other words, the operational execution of the business mission, through the supply chain. So managers need a clear understanding of the business mission, both in the context of the competitive strategy of the business, as well as the markets within which it operates.

This calls for four things to be aligned with the business mission: supply chain processes, the supply chain infrastructure (including where facilities are located, and what equipment is used), the supply chain information systems, and finally the supply chain organisation itself.

Examples of this in practice? Fairly clearly, Apple and fashion firm Zara certainly stand out as businesses with supply chains perfectly aligned to their own—very different—business strategies.

#### [subhead] Product Design for Supply Chain

Next comes the ‘floor’ of **Product Design for the Supply Chain**. Here, the message is simple: Don’t design additional risk into your products! So during the product design process,

ensure that the implied supply chain is considered.

How are different parties supposed to communicate? How is information to be shared?

What information is to be collected? What technology choices exist? In the insurance of vehicles being shipped on ocean-going car transporters from overseas assembly plants, for instance, Tokio Marine Claims Services [*correct spelling of Tokio*] has invested in a paperless process that drastically cuts delays and disputes .

By applying such principles, and asking questions during the design stage, it often turns out that simple modifications can greatly increase the resilience of the supply chain for that product.

As an example, post-tsunami, Nissan and Toyota have altered their product development processes, specifically to capture greater opportunities for resilience through such devices as dual-sourcing and supplier selection.

[subhead] The first pillar: Supply Chain Collaboration

Look at businesses which have survived major disruptions to their supply chain, and you'll typically see effective **Supply Chain Collaboration** in action.

One of the best examples of this again comes from the automotive industry. When a fire in 1997 devastated the premises of Toyota's supplier of brake master cylinders, Toyota vehicle

production halted across Japan. 20 other suppliers then re-tooled, set up jury-rigged production lines, and trained workers to make the parts. Vehicle production restarted three days later.

#### [subhead] The second pillar: Supply Chain Design and Engineering

To maximise supply chain resilience, it is important that supply chain risk management is integrated into the design of the supply chain. The logic: a supply chain that has simply evolved over time will not be as resilient as one in which network design principles have consciously been applied to balance efficiency against redundancy.

In practice, **Supply Chain Design and Engineering** involves making conscious decisions about such things as where inventory is held, how much inventory is held, the desirability of alternate sources of supply, supplier development in order to reduce risk, and postponement – right along the supply chain.

Again, the tsunami has taught valuable lessons. Merck—the owner of a Japanese factory that was the world’s sole source of an automotive paint pigment—has set up of a duplicate production line in Germany.

#### [subhead] The third pillar: Supply Chain Risk Management Culture

A business’s internal culture has an impact on its supply chain resilience—both in terms of mitigating against risk, as well as dealing with disruption once it has occurred.

In short, when contemplating a given action, it's useful to ask: "How will this action impact on the risk profile of the supply chain? Will it make us more vulnerable to disruption to events? Will it make us better able to cope with disruptions?"

But such a **Supply Chain Risk Management Culture** doesn't occur by accident, and needs encouragement. Assigning formal responsibility for supply chain resilience, and the creation of 'supply chain continuity teams', can also help.

During the September 2000 fuel crisis, brought about by striking tanker drivers, supermarket chain Sainsbury was able to activate a team of supply chain contingency planning experts, thereby enabling it to cope better than its peers.

[subhead] The fourth pillar: Agility

To reduce the overall risk of a supply chain—and to increase its resilience—an element of supply chain **Agility** is clearly vital. The trick lies in achieving the required level of agility.

Agile supply chains not only need to be network-based, but they also need to be market-sensitive, with highly integrated virtual and critical processes. What's more, if they are to respond in ever shorter time-frames to both volume and variety changes, agile supply chains need to synchronise both supply and demand. Finally, the agile supply chain needs to be able to adjust output quickly to match market demand—or post-disruption supply constraints—and switch rapidly from one variant to another.

And as an example of the art of the possible, consider global sourcing giant Li & Fung. During the 2011 Thai floods, it was able to seamlessly switch textile production from Thailand to China—sometimes in as little as four hours—thus minimising the impact on its Western fashion chain customers.

#### [subhead] Supply Chain Transparency

Straddling these four pillars is a requirement for **Supply Chain Transparency**. Simply put, transparency of what is happening within the supply chain system is critical to risk mitigation. When everyone knows what is going to happen—and confidence increases because of this transparency—then trust develops between all the players in the supply chain.

Transparency can be gained by a variety of initiatives, and by the application of appropriate technology. Just as international freight carriers such as Fedex and DHL offer ‘track and trace’ capabilities, insurance supply chains should know the status of every single claim.

#### [subhead] Continuous Monitoring and Intelligence.

Finally, overarching all of this is a need for **Continuous Monitoring and Intelligence**. While Supply Chain Transparency provides a window into what is happening within the supply chain, Continuous Monitoring and Intelligence puts the supply chain in context, gathering data on both local and world events. If a natural disaster makes the news, for instance, an

effective Continuous Monitoring and Intelligence process helps to ask the question “How will this impact on my supply chain?”

That said, Continuous Monitoring and Intelligence doesn't happen by accident. Intelligence needs to be gathered, and an effective process put in place so management can review and act quickly on this intelligence, in order to mitigate supply chain risk. Again, collaboration with supply chain stakeholders helps to make this happen.

As an example of best practice , consider BMW, which has digitally mapped the location of every first-, second- and third-tier supplier, overlaying on this picture a number of data feeds on weather, natural disasters, and political and economic risks. When something happens, the company can instantly see if it might be affected or not.

[subhead] Conclusion

Competition, remember, is no longer between individual companies but between supply chains. And resilient and risk-minimised supply chains will compete more effectively than supply chains which aren't.

Which is precisely why it is in every organisation's interest to build its own Temple of Supply Chain Resilience, in order to ensure sustained competitive advantage into the future.