



## Prof. Janet Godsell

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Professor Jan Godsell joined WMG in October 2013 from her prior position of Senior Lecturer at Cranfield University School of Management.

Professor Godsell's career has been split between both industry and academia. She joined the faculty of Cranfield in 2001, following the completion of her Executive MBA there. She also completed her PhD at Cranfield, researching the development of a customer responsive supply chain.

Prior to her return to academia, Professor Godsell developed a successful career within industry, beginning at ICI/Zeneca Pharmaceuticals. Following this, she worked up to senior management level at Dyson, in both Supply Chain and Operations Management functions. At Dyson, she undertook a number of operational and process improvement roles within R&D, customer logistics, purchasing and manufacturing.

Professor Godsell is a Chartered Engineer and Member of the IMechE. She is on the board and scientific committee of EurOMA (European Operations Management Association), the cabinet of the UK roundtable of CSCMP (Council of Supply Chain Management Professionals) and the manufacturing steering committee of the IMechE. She is on the editorial board of 3 journals, including the International Journal of Operations and Production Management, and she is an advocate for improving the uptake of STEM subjects by school children.

# THE EVOLVING ROLE OF EUROPEAN SMES: BUILDING CAPABILITY FOR TODAY AND TOMORROW

This is an auspicious year for the MX Germany awards. Not only does it mark the awards' 10th anniversary but also sees the introduction of a new 'Best Small Medium Enterprise (SME)' category. This is an important addition as it reflects the importance of SMEs to the German manufacturing landscape, where they account for over 98% of companies. Reflecting on the SME entries to the UK awards and broader industry observation, there are a number of common factors that successful SMEs share. They build from a strong capability base.

## Building from a strong capability base

Whilst much of the management literature suggested that it was possible to 'copy-paste' models for business success from one context to another, experience has demonstrated that this is not usually the case. Increasingly it is recognised that the underpinning principles or approaches can be transferable, if they are applied in a considered and context specific way. There are 5 key principles that underpin the capability base of successful SMEs.

### 1. Niche / focused

Since 1980, Michael Porter has argued that one of the 3 generic competitive strategies is the 'niche' or 'focus' strategy. This is the approach whereby a 'cost leadership' or 'differentiation' strategy is applied to a specific market. SMEs by their definition are small and therefore have limited resources. Consequently the importance of finding a niche in a market is critical in order to focus and channel the energy and resources of the company. Increasingly in a more globally networked world, the larger Original Equipment Manufacturers (OEMs) and Multi-National Enterprises (MNEs) seek specialist skills from their supply chain partners as they focus on what they perceive to be 'core capabilities'. This provides a huge opportunity for the specialist SME, or SSME.

### 2. Customer driven

Increasingly SSMEs are focused on the products and services that would fall into the larger corporates 'too difficult box'; products and services that deliver real benefit but the development of which is perceived to be too difficult, costly or non-core. Successful SSMEs often take a customer-centric approach to their business, starting with one of these 'difficult' customer problems and finding an innovative and cost effective solution. Once the solution has been found they are then able to develop both their manufacturing and broader supply chain to align with the customer demand signal, to cost effectively balance demand and supply and create flow.



### 3. Embrace opportunities for globalisation

SMEs may initially evolve to serve a need in a local market but as they grow are presented with export opportunities. These opportunities can start to present a dilemma for the SME when the customer demands production closer to the point of consumption. This can be driven by legislative local content requirements, competition from low labour cost countries or a combination of the two. Smart SMEs find ways to embrace this challenge, regarding globalisation as an opportunity not a threat. MechTool Engineering (MTE) – winner of the best SME, UK MX 2014 – was faced with this dual challenge. There was both local content and cost pressure for it to move manufacture of its blast resistant modules closer to the customer in South Korea. MTE developed an innovative response in which it retained production of the panels in the UK, but moved final assembly to South Korea. This was the most cost effective way to meet the customers' requirements whilst maintaining scale of operations in the UK.

### 4. Strong financial management

In the UK access to finance can be more problematic for SMEs than in Germany. Commonly, loans for equipment have a maximum repayment term of 5 years, which is often out of sync with the useful life of the equipment. Despite or, indeed, because of this problematic backdrop the need for strong financial management is critical to SME survival. Whilst it is important to manage costs today and ensure positive cash flow it is also essential to invest in the future. Successful SMEs manage the risks of business cycles, whilst still finding opportunities to invest in future capability. These companies manage their debt carefully or even look for ways for their customers to fund the investment.

### 5. Work collaboratively to embed innovation

It emerged through the UK MX judging process, that the vast majority of the SMEs who were short-listed had collaborative ventures with universities. The collaboration was focused on embedding innovative technologies and business practices within the SME. At the most basic level this involved the SME providing a topic for a Master's student dissertation. In more technically demanding environments this extended to doctoral studies either through a classic PhD or the more practically based Engineering Doctorate (EngD). Surprisingly, it emerged that the most commonly used mechanism was the Knowledge Transfer Partnership (KTP). This is a scheme supported by the UK government through the Technology Strategy Board (now Innovate UK). It provides the SME with 60% of the funding for KTP associate(s) to work with the company under the supervision of an academic to help embed a specific innovation. It is the UK government's most successful scheme for technology transfer, with a heritage of over 20 years.

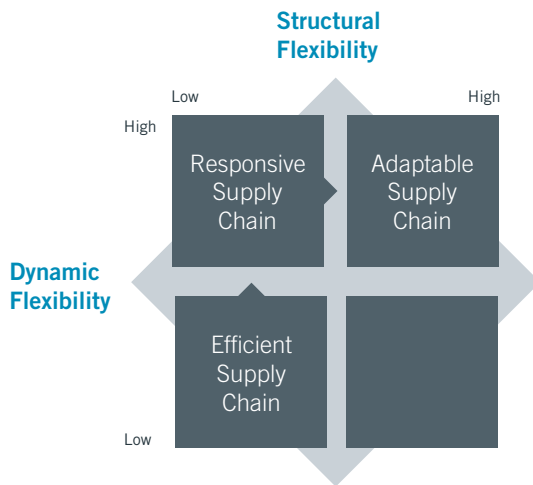
## Changing landscape

For the successful SMEs of today to be the successful companies of tomorrow, they need to evolve to meet the challenges of the changing business landscape. The Internet is driving radical changes in the way that we do business, both in business-to-business (B2B) and business-to-consumer (B2C) environments. They are driving the demand for fully personalised products that can be produced in a responsive way, ideally in a 'batch size of one'. This provides a huge potential opportunity for SMEs to connect with new customers, but this connectivity is hindered by a 'traditional' approach to supply chains. Supply chains need to transform from:

- Being cost driven (based on manufacturing costs) to customer driven with costs calculated more holistically based on total landed cost (e.g. manufacturing + logistics + tax/excise)
- Large batch sized to a 'batch size of one'
- Long lead times (often the result of manufacturing in a globally remote location) to short lead times based on localised production
- Limited visibility of environmental and social sustainability to a fully transparent system that enables consumers to consider the environmental and social impact of different supply solutions
- Compromised customer quality (based on the provision of a standard product) to superior quality delivered through a fully personalised product

SMEs have a critical role to play in this transformation. To do so they need to have a solid base built on an appropriate combination of 'lean' and 'flexible' practices (Flexible-Lean or FLean) that enable dynamic flexibility. However, in this changing landscape dynamic flexibility alone is not sufficient. Future success requires a combination of both dynamic and structural flexibility.





After Christopher and Holweg (2011)

## The need for both dynamic and structural flexibility

Dynamic flexibility is the ability of a supply chain (SC) to respond to fluctuations in demand. It requires responsiveness from the SC, and is also known as the 'agile' or 'flexible' SC. Flexibility is only required where demand is highly variable. In reality, it is rarely more than 20–30% of demand that requires a flexible SC response, with the vast majority of the stable demand being met more efficiently with a lean SC response. A lean SC response is preferable as it does not require the costly buffers (e.g. WIP, raw material stock, finished good stock, spare capacity) that are required to buffer against uncertainty. It is therefore critical that SMEs can effectively separate or segment demand so that they can ensure that a flexible SC response is only used when truly required, and the more cost effective lean SC response is the default position.

Changes in the manufacturing landscape, suggest that SCs need to move beyond dynamic flexibility. To compete in this new Internet connected world requires structural flexibility too. This is the ability of the supply chain to reconfigure in response to changes in demand. This raises a number of challenges to the SC, which could benefit those SMEs that are able to recognise and respond to the opportunities. Structural flexibility is underpinned by 4 key opportunities:

### 1. Global to local sourcing

Investigate 'local-for-local' alternatives to global sourcing and centralised manufacturing, as localised solutions potentially have shorter lead times, smaller batch sizes, increased opportunity for personalisation and lower risk.

**Dynamic flexibility** is a reflection of the agility of the supply chain, particularly its ability to respond rapidly to variations in volume and mix.

**Structural flexibility** is the ability of the supply chain to adapt to fundamental change, e.g. if the 'centre of gravity' of the supply chain changes, can the system change?

### 2. Economies of scale to scope

Focus on the 'economies of scope' rather than the 'economies of scale'. The ability to do multiple tasks in a single location significantly reduces the co-ordination costs, lead time and inventory across the supply chain.

### 3. Narrow to broad bandwidth

Create 'bandwidth' through asset sharing, e.g. capacity and inventory. Mobile phones for a range of different brands are produced in the same factory. The competitive advantage is in the technology and not in the manufacturing process.

### 4. Single to multiple options

Adopt a 'real options' approach to supply chain decision-making. Make decisions today that leave your options open in the future to reverse or change the decision. For instance, companies that retained a small manufacturing presence in Europe when they off-shored to China, are now finding it easier to move production back than those who off-shored all their manufacturing capability.

To conclude, European SMEs have a strong capability base from which to build. Their strategic and customer focus, willingness to collaborate and to innovate, strong financial management and ability to embrace globalisation will stand them in good stead in this fast changing landscape. The opportunities that Internet driven business models present requires a fundamental shift in the way industrial SCs are structured. Dynamic flexibility alone is not sufficient. SCs need to be able to reconfigure in response to the changes in demand – they require structural flexibility. Local sourcing, economies of scope, broad bandwidth and the adoption of a 'real option' decision-making are critical elements of a structural flexible SC and favour SMEs. We are on the brink of a huge change in the manufacturing landscape. Is your business ready to exploit this change?