

Manufacturing footprint strategy

Making the right things in the right places

Lean thinking is no longer enough to achieve global competitiveness. A new business process is emerging focused on developing the right configuration of manufacturing plants around the globe – where to locate them, what their roles should be and how they should interact with each other. Global footprint design is an exciting new spanner in the company toolbox that has the potential to have an impact several times greater than 'lean'. However, it raises new challenges that are not easily resolved by economics or engineering logic alone. Managers must develop fresh analytical approaches for this uncharted territory, with little idea of what best practice might be.

For over ten years researchers at the Institute for Manufacturing have been at the heart of leading thinking on issues of international manufacturing strategy. We have been delighted to work very closely with several major organisations to build on our research foundations in order to develop robust tools for the new processes involved in the design of global manufacturing networks. The scale of change that is happening on the basis of these projects is simply breathtaking. The challenges of financing and mobilising huge migration plans are equally daunting.

This *briefing* is an extract from a forthcoming publication that provides guidelines on establishing best practice in this exciting area.

In search of best practice

Until now each company has had to invent its own way of tackling the challenge of global network design. There has been no obvious source of best practice and only very limited sharing of experience. The research teams at the Institute for Manufacturing have been developing tools

to address this issue for the last ten years. In the last four years, these tools have been used to support global reconfiguration in collaborative projects with a number of major manufacturers. Our collaborators have also participated in forums with other leading companies, trying to crystallise a picture of good practice. This report draws on these experiences to set out guidelines for tackling the process of global manufacturing reconfiguration.

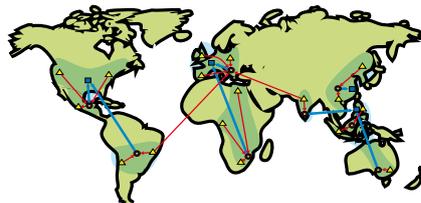
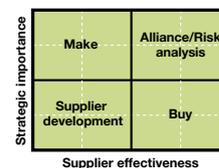
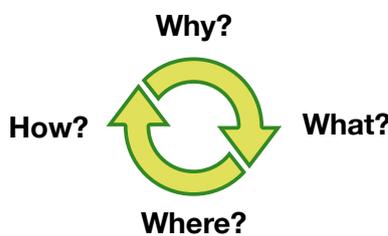
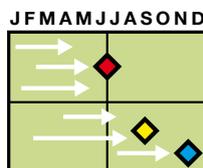
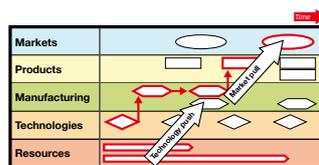
A new business process that touches all parts of the organisation

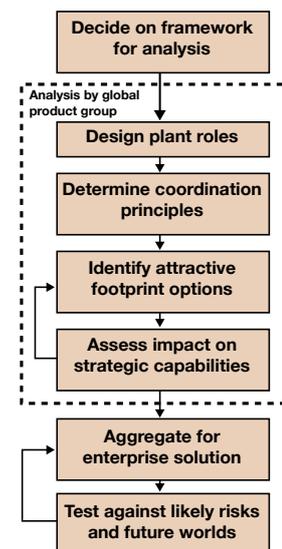
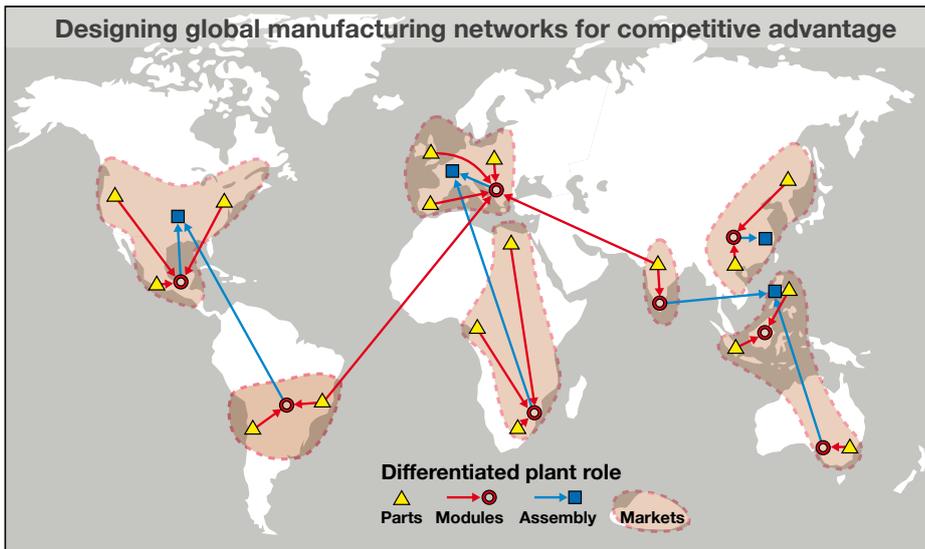
Achieving a global manufacturing footprint aligned with business strategy requires bold leadership as well as extensive consultation across product lines, regions and support functions. This is not a one-off strategic study and it is not a short term restructuring project. It is an ongoing challenge that

requires new thinking, new processes, and new roles in the organisation. It also requires new connections with the sales, marketing and technical functions, and support from finance, legal, HR and communications. It must also be given its place in the cycle of business planning – it should not be done once and then assumed to be complete. Leading companies are treating this as a continuous transformation programme that is likely to impact the organisation for at least the next 10 years.

Four key questions...

Network reconfiguration must address four issues. **Why** is it necessary to evolve the network? **What** are the strategic parts and processes that form the basis of distinctive market position? **Where** should the plants be located and how many of each doing what? **How** best can the transition be achieved and monitored?





Understanding why we need to change

Cost reduction is often the primary motive for reconfiguring a manufacturing network, but customer service is at least as important and there are other strategic factors to consider including access to resources, innovation capability, agility and risk. The market forces that drive us to respond and the technology discontinuities that create new product and process opportunities, are the landscape against which reconfiguration should be considered. A clear understanding of the business imperatives is a key factor in successful design and execution.

Understanding what to make and what to outsource

Tempting as it is to think about outsourcing and offshoring at the same time, it is important to separate decisions about 'what to make' from considerations of 'where to make'. This is essentially about establishing the right degree of vertical integration regardless of where the production plants are to be located. Once it is completely clear which products and processes comprise the core competence of the business, the configuration of manufacturing facilities can be considered.

Understanding where to make and in which types of plants

Identifying a future vision for a plant network requires a pragmatic approach involving a careful balance of analysis, intuition and creativity. There are far too many variables to model every aspect mathematically – and yet a systematic and clear process is essential, supported by valid data. Firstly the plants themselves, the fundamental building blocks of the manufacturing network, must be given clearly defined roles. This is critical to the

design of an effective network and to counter the tendency of plant managers to grow the role of their plant beyond its prime purpose.

The second step is to specify the coordination principles underlying the network. A network is more than just a collection of independent plants. The activities of the plants must be coordinated to meet customer needs in the most efficient way. Defining the ways in which plants interrelate with each other and with R & D and other key functions is described here as 'network co-ordination'.

Determining the manufacturing footprint is the third stage in designing the network. At this point, the question concerns the choice of region for manufacturing to meet the requirements of each market. There are many reasons why the answer is neither one large facility in China nor separate plants in every market!

For reasons of practicality, footprint reconfiguration is often handled at the level of the global product line or business unit. A large part of the synergies available, however, are derived from a co-ordinated approach across business units. This requires an additional step in the design process, termed here 'aggregation', which also has implications for implementation.

How to make it happen, and knowing whether you are succeeding

Strategy is worthless without proper execution. Network reconfiguration entails a large number of closely integrated and interdependent projects. These are executed over a wide geographic spread, across very different time zones, and involve large numbers of staff. This alone would make the task very difficult, but the fact that it affects a wide range of stakeholders both in and outside the

company, means it is also very sensitive politically. It is not just a question of detailed project control. Network reconfiguration represents a portfolio of business opportunities which require constant filtering and prioritising within a changing context.

Other factors to be considered include raising capital, legal implications, HR issues, internal communications and investor relations. Collectively we have used the term 'mobilisation' to describe these aspects.

Transferring products to new sites, plant closures and plant migrations are likely to become regular features of a manufacturing business. Managers will therefore need to become familiar with the emerging best practice in the transfer of production capabilities.

Finally, it is essential to put in place a measurement system that reflects the operation and transformation of the network. Measuring what is going on at plant level is a relatively well-established discipline. Genuinely network-level metrics are much less mature.

Practice guidelines

The full approach described in the forthcoming publication forms a set of guidelines for establishing the new business process of global manufacturing reconfiguration. This can be used as a benchmark for evaluating maturity, and as a framework for ongoing strategic development.

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