



# RE-ASSESSING INDUSTRIAL FOOTPRINTS

New imperatives in an increasingly globalised world

In most manufacturing industries, the rules for designing an optimal 'footprint' have dramatically changed over the last 15 to 20 years. By footprint we mean:

**'What and how much product/service should we produce where?'**

**'What products and services should we offer to which markets?'**

**'Where should we locate our operations?'**

**'How can we generate value and how should we develop our products and services?'**

At OC&C we have supported companies and investors through a wide range of situations, typically involving footprints of up to 50+ factories worldwide. Although exposure to globalisation varies significantly across industries, some generic features have emerged.

**So what are the main challenges and opportunities and how can a company best reset its footprint?**





# GLOBALISATION IS TURNING A COMPANY'S 'FOOTPRINT' INTO A MOVING TARGET

As globalisation now influences all aspects of manufacturing, the scope, the pattern and the centre of gravity of the markets addressed by most companies are all becoming increasingly volatile. Achieving and sustaining a cost and/or service advantage has become increasingly complex. In fact, even though many companies still compete on a regional basis, they cannot ignore the potential threat from far-off competitors moving into their traditional markets.

There are five closely related reasons for this change:

- **Volatility** is increasing rapidly, making it increasingly difficult to predict the cost of goods sold for any length of time. And fluctuations in factors such as currencies, shipping rates, tariffs and taxes are not expected to go away any time soon.
- **New Asian production scales and capacities** have upset traditional cost norms and metrics. They change cost experience curves and redefine competitive battlefields.
- **Advanced process automation** is helping Western corporations to reduce low-wage-based competition and even allowing re-shoring. However, China is also massively investing in robots.
- The **range of competitiveness** fluctuates as supply chain efficiency and product mobility facilitate transportability. But, the volatility of factors may partly upset the economics of this transportability.
- **Industrial integration** with customers is intensifying, creating systemic and highly sensitive cross-dependences. Any production revamping upstream must secure quality and continuity of service downstream.



# NEW IMPERATIVES – OUR APPROACH

As a result, although emerging economies – especially China and India – have created huge market opportunities for Western corporations, this new situation also presents an unprecedented set of challenges and risks. And we do not know of a single global industry which can claim to be immune from these trends. Although most corporations have expressed concern, few are in a position to truly anticipate the implications for their strategy as well as the impact on their organisation and governance.

If it is not pre-empted, this invasive complexity will lead to a lack of coherence in businesses and reduce future profits. As there is a real danger of being caught by surprise, the boards of companies must address the challenges rationally and shareholders must increase their vigilance.

Short-term pragmatism is clearly not enough. Boards must review their strategies and at the very least:

- deploy more effort to ensure that their data is informative and up-to-date
- produce a new roadmap for the company's global manufacturing set-up – or 'footprint' – with (at least) a five-year horizon
- realise that revamping your 'footprint' also requires rethinking both strategy and governance; it's no longer just the domain of industrial experts.

**We recommend** structuring any diagnosis around four fundamental concepts, which can enable the company to concentrate on several fronts concurrently, and then restructure strategic thinking and feed options and scenarios into financial simulations.

Therefore, in order to meet the new challenge, the first thing any global company needs to do is to make a lucid diagnosis of the opportunities and threats beyond the current footprint, current markets and current portfolio. This is a precondition for devising an explicit future-driven strategy and adequate governance. A footprint study can have a major impact on the business and it's all about balancing several competing goals. Dynamic markets force companies to revisit their operational footprint regularly in order to stay competitive.

The **key approaches** are to:

- **Create Consistent Strategic Units (CSUs):** using strict product cluster definitions – so-called CSUs – to tighten strategic grasp and operational manoeuvrability while reducing business complexity.
- **Calculate current full potential:** homogeneous quantification and benchmarking of each plant's volumes and cost position when capacities are fully utilised and markets are optimally served.
- **Develop a footprint scoring index:** a comprehensive rating of all main countries' cost efficiencies and ease of doing business, allowing companies to benchmark their footprint costs vis-à-vis competitors.
- **Simulate dynamic cost positions:** a full picture of the future cost position vs. key competitors on a global basis anticipated by each CSU when robotics and automation are fully deployed.

These four concepts must be carefully managed in order to ensure that the data they deliver can be used in comprehensive simulation models.

**THESE FOUR CONCEPTS MUST BE CAREFULLY MANAGED IN ORDER TO ENSURE THAT THE DATA THEY DELIVER CAN BE USED IN COMPREHENSIVE SIMULATION MODELS**



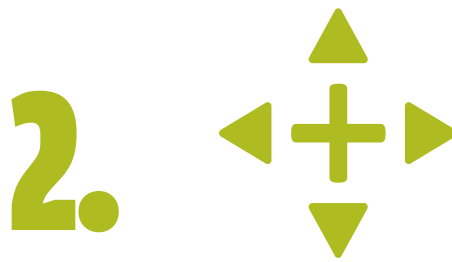
## Consistent Strategic Units

**Issue:** most companies face an artificial level of complexity when defining their product range. Current categories usually reflect the legacy of the past, combining market segmentations, processes and plants used, and even reporting conventions. As data may be disconnected from strategic considerations, analysis is reduced to a set of statistics. And, when managers are not used to being challenged, they normally resist benchmarking their own plants. ‘Specialty’ product status, for example, is a frequent excuse for avoiding any comparisons with standards.

**Focus:** redefine clusters by adopting a rigorous business definition, which can be used to rebuild a relevant footprint for a limited number of CSUs. In other words, review full cost sharing across products or Stock Keeping Units (SKUs) – including shared raw material, processes, skills, sourcing and clients served – as well as price and transportability ranges. Typical metrics in large companies surveyed by OC&C in France: 60,000 SKUs, 5000-6000 ‘products’, 150 product families, 12 key industrial processes, and 5 CSUs.

Points to bear in mind:

- Usually you need depth of data, down to Bill of Material level, so that you can extract a small number of relevant aggregates.
- Full cost-sharing reviews of the type proposed here typically produce an indirect but usually quite significant effect on procurement efficiency and purchasing costs.
- You need to run benchmarks consistently. For example, compare the costs of products based on similar upward and downward integration (from raw materials and first transformation down to logistics).



## Current full potential

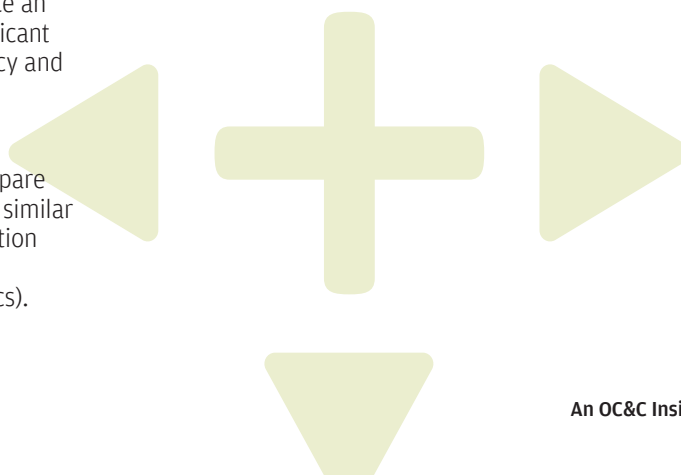
**Issue:** companies run a significant risk by taking for granted in-house evaluations of capacity utilisation – especially when complex, ill-defined product ranges have been built up through acquisitions of additional plants. Unless the company has explicit rules and ways to enforce and monitor plant compliance, practices are likely to remain fragmented and metrics inconsistent, jeopardising any attempt to rationally define an ‘optimal footprint’. As a result, there may be a significant hidden gap between a plant’s current performance and its ‘full potential’.

**Focus:** challenge each plants management’s conception of ‘utilisation’ and question all underlying manufacturing conditions (lay-out, equipment, seasonality, working practices, etc.). Then simulate with each plant manager the optimal output and cost position of a homogeneously defined ‘fully utilised plant’. Make sure that basic cost notions, such as scale, automation yield and experience curve – and the underlying logic – are understood and shared.

Points to bear in mind:

- Depending on the capital intensity of the processes in a given plant and the choice of product mix, achieving ‘full potential’ may increase capacity by 25% from current levels and reduce costs per unit by 5-10%.
- The ‘full potential’ notion helps rationalise the debate internally and usually serves as a tool for allocating the workload across plants and arbitrating in-house vs. outsourced production.
- Addressing capacity utilisation helps focus the supporting data. Think of economies of scale, deflated factors (including raw materials and the notional impact of automation) and the effect of cumulative volumes on cost curves.
- Finally, the ‘full potential’ notion usually helps clarify the classical debate about the relative contribution of ‘specific’ vs. ‘standard’ products.

**‘SPECIALTY’ PRODUCT STATUS IS A FREQUENT EXCUSE FOR AVOIDING ANY COMPARISONS WITH STANDARDS**



# 3.



## Footprint scoring index

**Issue:** in a globalised world, monitoring cost performance means distinguishing between plant efficiency and country-related factors. Country attractiveness depends on the end markets being served. In other words, in a given industry, competitors' footprint efficiency needs to be scored, which requires knowledge of who produces what, from where and for which geographical markets.

**Focus:** measure each country's relative intrinsic attractiveness, within a panel of comparable countries, i.e. rate it on two axes: 'ex-works' production cost and 'ease of doing business.' Establish dynamic databases, which are easy to update, in order to fully rationalise the exercise and objectively compare performance with competitors ('footprint scoring').

- Our own comprehensive model can be adapted to any industry and it can be easily characterised for key products/CSUs. Measuring 'ease of doing business' relies on a selection of properly aggregated publicly available data.
- Exogenous factors, such as currencies, duties and taxes, and shipping rates must be rigorously quantified for each selected country, to allow a swift 'landed cost' simulation for any end market.
- Typical algorithm of a relative cost position: landed cost of Product I, produced by Plant A in Country X shipped to Country Y today vs. the expected situation in 2018. Such combinations highlight potential opportunities that one cannot usually detect with common sense alone.

A footprint scoring index helps structure complex data. It's more than just an ingredient in the diagnosis; it provides lasting input for the company's decision-making.

**THE INDEX IS MORE THAN JUST AN INGREDIENT IN THE DIAGNOSIS. IT PROVIDES LASTING INPUT FOR THE COMPANY'S DECISION-MAKING**

# 4.



## Dynamic cost position

**Issue:** Chinese industrial reality has significantly influenced the way we look at relative cost position. Chinese production capacities are often built from scratch on Greenfield sites, and on much bigger scales than Western ones. By and large, these unheard-of volumes and scales reshape experience curves and sharply drive down costs. This dynamic, even though it is slowing down now, is redefining traditional benchmark yardsticks and cost references for nearly all industries.

**Focus:** Reset as a priority – or possibly rehabilitate – the notion of 'relative cost position' and, consequently, the need for efficient corporate intelligence. Extend the scope worldwide and recognise Asian countries in particular (more specifically China) as the main market trend setters (unless evidence suggests otherwise). Quantify, assess and project volumes opportunities and cost threats, even when the company doesn't yet produce or sell in a particular country.

- Introduce quantitative tools based on series of historical volumes alongside an ability to project into the future in order to measure the impact on unit costs.
- Once the costs of the company's own plants have been consistently assessed, plot them against the competition, current vs. projected (for at least one to three years).
- Never forget that Asian producers are bold investors who tend to build huge single assets at once, compensating for rocky apprenticeship by bypassing the complexity that Western M&A-driven corporations have to deal with.
- Take into account key clients' loyalty/sensitivity to purchasing factors (price, service, logistics, etc.) and assess the risk that they might shift to alternative suppliers.

# DELIVERABLES — A PRELIMINARY VIEW

Diagnosis is key to any footprint re-assessment initiative. For a company with 25-50 plants worldwide, the footprint re-assessment diagnosis usually takes four to five months. Our experience shows that the comprehensive and integrated set of tools which we build together with management can be used long after the project.

- A dynamic ‘plant economics’ database (enabling automatic cost simulation)
- A ‘competitor analysis database’ (embedding all cost data and data related to market share/relative market share)
- An ‘industry footprint index’ (enabling competitive or scenario scoring)
- A simulation tool (allowing global integration and simultaneous manipulation of data).

Beyond the transfer to management of such tools, we recommend reserving sufficient time (6 to 12 weeks) and senior resources to address the two fundamental outcomes of the project: (1) how does it reshape / modify / revamp the company’s strategy and financials? and (2) what are the necessary adjustments in terms of governance, structure and processes?

Finally we strongly suggest not treating these two dimensions sequentially. Start addressing them upfront – in parallel with the diagnosis – in order to rapidly figure out a clear set of options for the company. As Robert Kennedy (in a speech in Cape Town in June 1966) put it: “There is a Chinese curse which says ‘May you live in interesting times.’ Like it or not, we live in such times. These are times of danger and uncertainty. But they are also more open to the creative energy of men than at any other time in history.”

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