SUPPLY CHAIN PRODUCTIVITY

The supply chain productivity methodology aims to improve the productivity of a focal firm and a named customer and supplier through the implementation of an integrated planning process.

The UK has seen a productivity improvement in its output per hour for Q1 2021, increased by 0.9% compared to the same quarter in 2020. Despite the positive productivity growth, there is still a long way to go for the UK to unlock its "productivity puzzle". Since the recession 2008/9, UK's productivity has remained lowest compared to other advanced economies. It is significant for the UK to solve its "productivity puzzle" as it determines economic prosperity and better living standards.

At a country level, productivity is typically measured by output per worker whereas, at a firm level, it is measured by the cost, quality, and time efficiency. This level is further reduced to functional efficiency, backed by a range of key performance indicators (KPIs). This leads to an inefficient organisation with functional thinking minded, causing the motto of "supply chains compete, not companies" far beyond realisation.

There is an opportunity for a step-change improvement if firms transition from a traditional (supplier/customer relationship-focused) to one that embraces the wider end-to-end supply chain. Much focus has been given to improving the productivity of lower tiers suppliers (e.g. SMEs) but has ignored the critical role played by "powerful" supply chain leaders (e.g. OEMs, tier 1 suppliers) in identifying different demand patterns set by them. It is important for OEMs to understand the basic demand patterns and develop the right supply chain strategy to improve holistic productivity. A survey of supply chain segmentation conducted by WMG in conjunction with Blue Yonder to 100 European manufacturers found that only 8% of companies currently have this capability.

Recognising the importance of firms exhibiting this capability, this methodology aims to improve the productivity of a focal firm and a named customer and supplier through the implementation of an integrated planning process (see Figure 1). It will assist firms to recognise different demand patterns at the OEM level and provide co-ordinated demand signal across a minimum of three echelons. This will enable the delivery of improved customer service at lower supply chain cost, between:

▶ Focal firm and named customer

▶ Supplier and focal firm

Figure 1: Methodology scope

[1] Martin, J. (2021). Productivity economic commentary, UK: January to March 2021.
[2] Banks, A. (2021). UK productivity up in Q1 2021 after small increase over 2020 – EY ITEM Club comments.
[3] Bughin, J., Dimson, J., Hunt, V., Allas, T., Krishnan, M., Mischke, J., … Canal, M. (2018). Solving the United Kingdom's Productivity Puzzle in a Digital Age.
[4] Christopher, M. (2005). Logistics and supply chain management.
[5] Stevens, G. C., & Johnson, M. (2016). Integrating the Supply Chain … 25 years on. International Journal of Physical Distribution and Logistics Management, 46(1), 19–42.
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Methodology

This methodology consists of a two-phase case study approach.

Phase 1 – Current State

This phase consists of three stages. The purpose of this phase is to understand the current state of the business and its supply chain processes. Using the demand data, a supply chain segmentation analysis will be conducted to identify different demand patterns and sources of variability and predictability. Supply chain diagnostics tools will also be employed to explore enablers and inhibitors of supply chain productivity.

Phase 2 – Future State

Following the segmentation analysis, a future state map will be designed to model the potential benefits of an integrated planning process. Findings will be validated through all-party workshops and recommendations will be provided to implement the future state model.

Appendix A

	Phase 1 - Current State			**Phase 2 - Future State**
	Stage 1 - Scoping study (Focal firm)	Stage 2 - Situation analysis (Supplier - Focal Firm - Customer)	Stage 3 - SC segmentation analysis (Partial or E2E SC)	Stage 4 - Future state design
Core themes (CT)	CT 1.1 - Company structure & organizational/business strategy CT 1.2 - Customer base CT 1.3 - Demand fulfilment CT 1.4 - Supplier base	CT 2.1 - SC operating model (Plan/Source/Make/Deliver) C.2 - Enablers & inhibitors of SC alignment	CT 3.1 - Demand profiling approach	CT 4.2 - Integrated planning process design
Research activities (RA)	RA 1.1 - Background research RA 1.2 - Semi-structured interviews	RA 2.1 - Semi-structured interviews RA 2.2 - Big picture mapping RA 2.3 - Enabler & inhibitor assessment (questionnaire)	RA 3.1 - Obtaining ERP data from the focal firm RA 3.1 - Obtaining ERP data from the focal firm RA 3.3 - Review meeting with the company	RA 4.1 - SC segmentation analysis RA 4.2 - Ideal state mapping RA 2.3 - All party workshop to validate results
Milestones (M) & Deliverables (D)	M 1.1 - Understanding the business M 1.2 - Understanding the SC within the business M 1.3 - Identifying the focus for the situation analysis (stage 2) D 1.1 - Overview of the SC context indicating the focus of the situation analysis M 1.3 - Identifying the key informants for the situation analysis (stage 2) D 1.2 - A list of potential interviewees	M 2.1 - Mapping the current state of SC processes (plan/source/make/deliver) D 2.1 - Big picture map M 2.2 - Identifying alignment gaps in the SC D 2.2 - An overview of firm's performance along the 6 groups of enablers and inhibitors	M 3.1 - Understanding the current demand patterns and the degree and sources of variability and predictability D 3.1 - Current state model	M 4.1 - Modelling the productivity gain (ie. inventory reduction) of improved SC segmentation D 4.1 - Model of future state SC segmentation M 4.2 - Designing the ideal state of SC processes for improving SC alignment D 4.2 - Design of future state SC process through the adoption of integrated planning process

The analysis can uncover:

▶ Different demand patterns through supply chain segmentation analysis

▶ Enablers and inhibitors to supply chain alignment

▶ Opportunities for developing tailored practices that can optimise firms' productivity

The output of the analysis will help you to:

▶ To understand the current process, and associated performance of demand, supply, and inventory planning

▶ To understand the current demand patterns, and the degree and sources of variability and unpredictability

▶ To design and model an integrated planning process between a focal firm and a named customer