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Project Caesar: improving delivery forecasts and releasing finished vehicle delivery chain capacity through collaborative processes and tools

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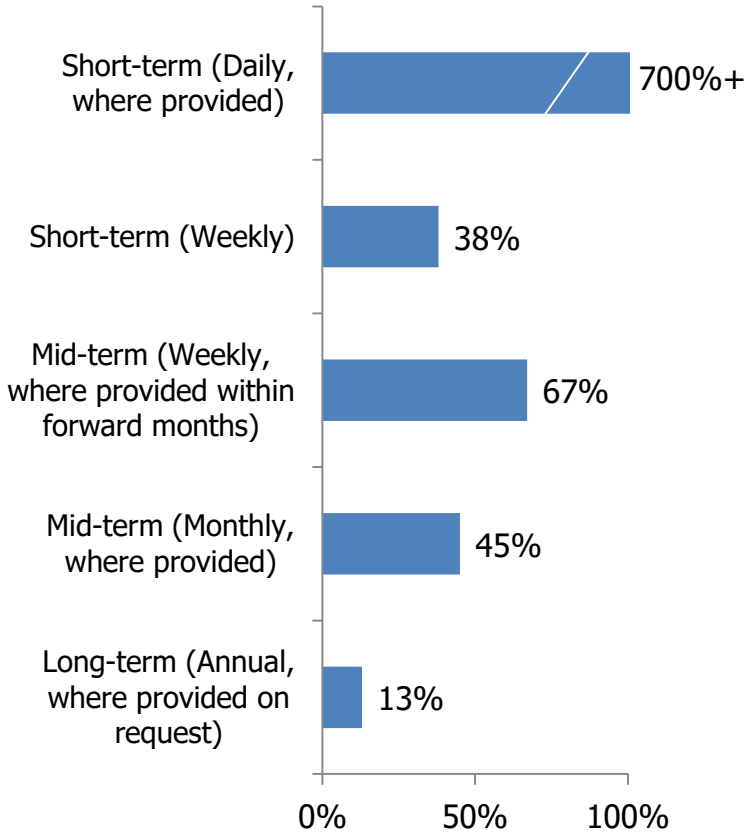
Why is there a need for agreed standards and tools?

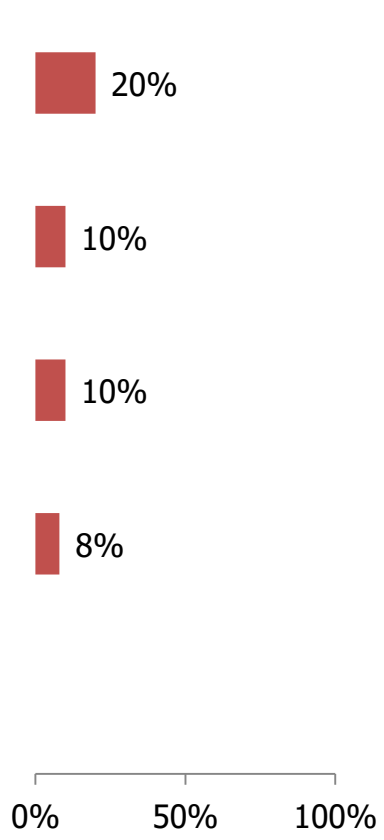
High variances from forecast

Example: compound to dealer typical variance quoted



Significant potential

Example: best observed



Direct and indirect costs

Example
- Capacity shortfall due to deviation from forecast
- +20% from forecast for one week of route demand
- Spot market supply required from sub-contractors
- Additional trucks and drivers at premium rates

Example
- Capacity underutilisation due to deviation from forecast
- -20% from forecast for one week of route demand
- Unused trucks and drivers as overhead penalty
- Network impacts

Source: ICDP; from interviews; variance combined, plus and minus

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Example of direct and indirect cost impacts

Direct and indirect costs	Example of indicative costs
Example • Capacity shortfall due to deviation from forecast • +20% from forecast for one week of route demand • Spot market supply required from sub-contractors • Additional trucks and drivers at premium rates	+20% from forecast for one week, for this example impacting ten road transporter trucks of capacity, resulting in either; • Late vehicles and the negative effects associated with this (lost sales, retailer compensation, diminished customer satisfaction) • Premiums paid in the spot market to secure additional capacity, typically +50% • Securing unplanned sub-contracted trucks which typically generate net losses of €850 per truck per week, so ten trucks for one week result in an indicative loss of €8,500 • Additional costs may be generated by sourcing trucks and drivers from long distances
Example • Capacity underutilisation due to deviation from forecast • -20% from forecast for one week of route demand • Unused trucks and drivers as overhead penalty • Network impacts	-20% from forecast for one week, applied to the same example; • Results in unplanned excess capacity of ten road transporter trucks that cannot be mitigated, indicative cost €32,000 • Unused capacity often cannot be diverted to training or unplanned demand elsewhere, or instead disrupts network planning for start and end points

Source: ICDP; from interviews

Interviews underlined a consensus on current gaps, support for standards and potential benefits of shared good practice from both LSPs and OEMs

"It would be good for OEMs to agree a defined standard. In addition, common platforms would be a cost saving, one interface all OEMS. During standardisation, you learn from each other, and so adopt and align similar processes. All are average, on a similar level, and so there is potential to move all averages to better level." (OEM interviewee)

- OEMs aware that forecasts are lacking, disconnected between market and production or deep sea supply, and that improvements in this area have not been prioritised
- LSPs feel unable to send confirmation based on poor forecasts, but open to a confirmation process linked to much better forecasts and review processes
- Both see an opportunity to build standard data flows and best practice based forecasting, review and LSP confirmation processes

Source: ICDP; from interviews

Draft suggested standards and toolbox for improvement cover the range of delivery chain forecasting challenges from factory to dealer

Production led, but market allocation shifts by month

EU Factory

EU arrival for deep sea imports

Production, order banks and market allocation

Sales planning and import supply pipeline

Predictable and long cycle

Market compound (distribution centre or port)

NSC sales forecasts and dynamic sales and stock pipeline

Dealer

Complex and unstable, more detailed processes required

Compound to dealer: draft data transmission standards here form the basis of unified standards for the whole delivery chain

	Short term	Mid-term	Long-term	Factory to dealer short term
Frequency	Weekly Thursday	Monthly Last week	Quarter Last month	Weekly Thursday
Form		Excel minimum, but format for booking systems		
Data 1: Volume	Y, confirmed by sales	Y, adjusted for promotions	Y, annual dealer targets	Y, confirmed by sales
Data 2: Origin	Y	Y	Y	Y
Data 3: Destination	Region (as defined)	Region (as defined)	Region (as defined)	Region (as defined)
Data 4: Location	Dealer (if allocated)	Region Dealer (if allocated)	Region	Dealer (if allocated)
Data 4: Model mix	Y	Y	Y	Y
Data 5: Status	Flagged as priority, sold, hold, special handling (e.g. EV)	Sold (creating build to order mix); special handling (e.g. EV)	Sold (creating build to order mix); special handling (e.g. EV)	Flagged as priority, sold, hold, special handling (e.g. EV)
Period detailed	4 weeks Aim for 2 weeks by day	3 months Nearest month by week	12 months rolling	4 weeks 2 weeks by day

Source: ICDP; from interviews

Compound to dealer toolbox: checklist of observed processes for better forecast provision

Source: ICDP; from interviews

Toolbox example: well managed forecast review process for compound to dealer delivery chain

NSC Sales

NSC Logistics

LSPs

Sales provide **sales forecast and/or wholesale target** based on production plan and sales targets

Logistics planner undertakes an initial **sense check**, for annual and month level detail

Logistics planner creates a template **delivery plan**

Sales agree to the delivery plan and sign off

Confirmed **delivery plan issued to LSPs**

LSPs confirm they can deliver, or 'provide guidance' where a problem

Spot prices highlighted

Additional cost risks passed to **sales** and **made aware**

Confirmed **delivery plan**

Source: ICDP; from interviews

Checklist for sense checking, ahead of building the forecast


"Truth is we need to reach the numbers, so what we need to understand better, and tell our suppliers, is the timing of reaching the numbers" (OEM)



Key checks	Key questions for an initial check of the forecast data, that allow delivery forecaster to go back and challenge sales, and for them to challenge market level sales organisations, factory planning, and deep sea schedules
Meeting sales and financial targets	• How do market sales forecast, volume and model mix, align to annual targets and past patterns? • Is the wholesale forecast, volume and mix, building towards the annual market target and mirror past activity? • Are sales and wholesales on target to meet the annual financial budget?
Market level explanation	• Unusual peaks – are they justified? (E.g. promotions, incentives, market specific impact such as taxation change, supply change as a result of a market allocation change?) • What is driving it, and how certain are sales of the change?
Production planning accuracy	• Production forecast – are there any unusual changes in mix or volume? • What is the cause – changes in order pipeline, or supply constraints, and if latter, is the forecast still correct?
Delivery chain capacity and processes	• What is the gap between market stock levels (compound and dealer) and throughput required to meet target? • Are subcontracted in-flow processes (such as centralised PDI), and intermediate delivery legs (prior delivery chain activity), in a position to be able to allow inventory to flow to meet targets? • How does calendarization impact the flows and deadlines for particular actions to meet targets? (working back from end of month, is it realistic that the inventory will be available to meet targets?) • Do suppliers have the contracted capacity to meet targets? If not, is there a usually additional capacity available that we can call upon via suppliers or direct?

Source: ICDP; from interviews

Summary of best practice principles and processes

Principles

- Dedicated delivery forecasting resource and expertise within the NSC and OEM
  - Sales take responsibility for forecasts generated by logistics specialists, and the sales department agreed production programme
  - Agreements on base and flex volumes with LSPs by route
  - LSPs to commit firmly to forecast within agreed variance
- Contractual terms and risk – benefit sharing
- Continual improvement built into review process

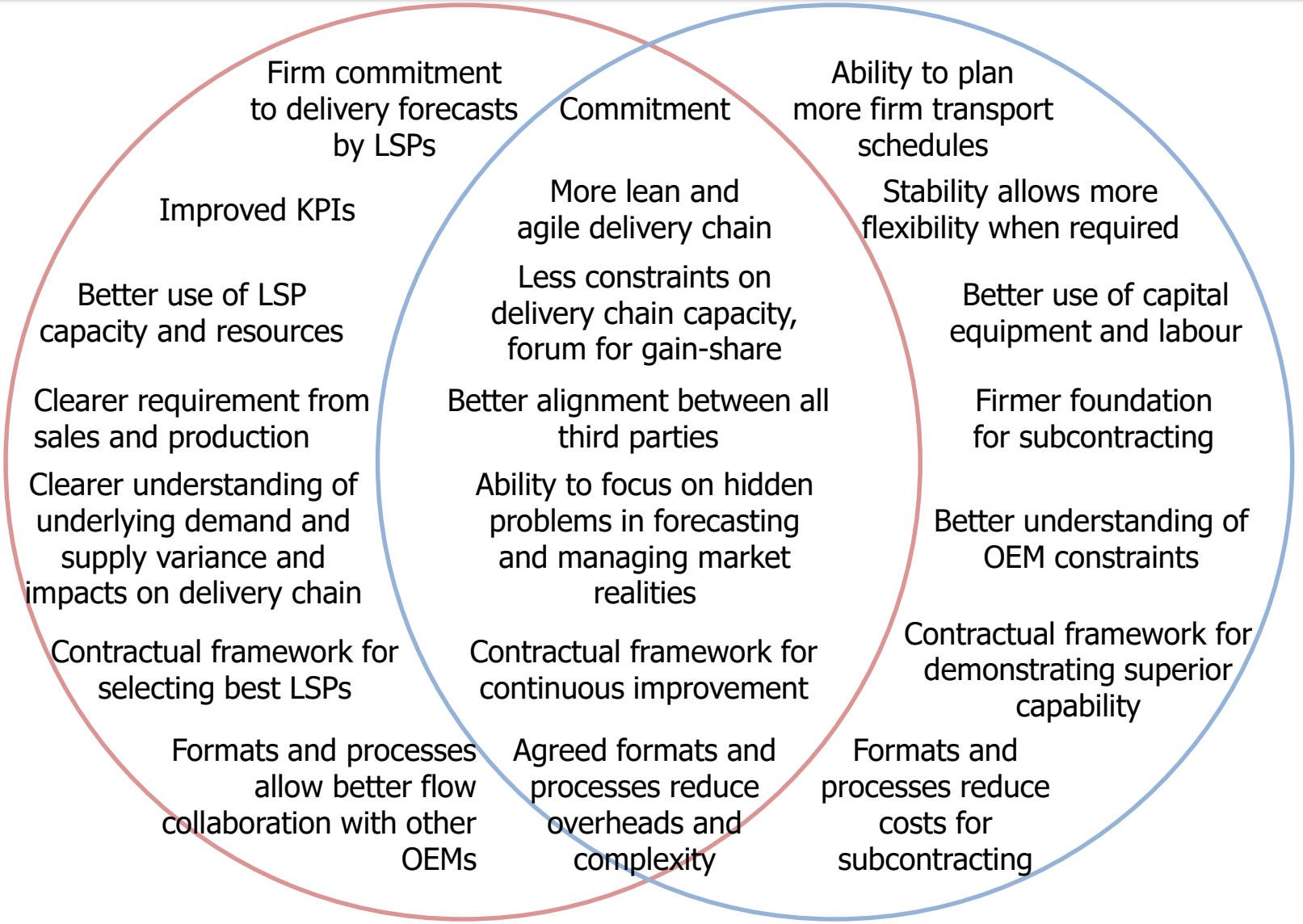
Processes

- Fixed forecast and confirmation cycle
  - Sales confirmation of forecasts for movements from port and factory, at the EU level
  - NSCs do the same for market dispatch
- Review and confirmation process internal and with LSPs
  - Sales forecasts, wholesale targets, and viability of delivery
  - Based around production programming and the sales targeting cycle
  - Confirming and committing delivery forecast with sales functions and LSPs

Tools

- Pipeline data used to assist logistics planners evolve early forecasts to firm plans
  - Historical data and calendarisation of month used to turn sales targets into delivery flows
  - NSC wholesale targets reconciled with stock balances, factory programme and deep sea pipeline timings – including timing implications for meeting targets
- Contingency planning for agreed uncertainty
- Use of systems where appropriate, using agreed standardised data fields to improve collaboration

Commitment to improved processes will deliver benefits to both OEMs and LSPs



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What is required for pilots?

From OEM

- Willingness to sign up to trial period with an LSP
  - Set up internal nominated individual within delivery logistics to liaise with LSP, and commit to testing data standards, processes and tools
  - Agree a specific route or region
- Commit to
  - Design and establish a process cycle and test some of the toolbox methods
  - Measure variance of forecast from actual
  - Allocate dedicated resource to delivery forecasting
- Set targets within design and trial testing of processes and tools
  - Establish an initial improvement target for trial period forecast variance, as a first step to continuous improvement
  - Agree to test contingency process and actions if variance exceeds trial target

From LSP

- Willingness to sign up to trial period with an LSP
  - Set up internal nominated individual within delivery logistics to liaise with OEM, and commit to testing data standards, processes and tools
  - Agree a specific route or region
- Commit to
  - Work with the OEM to help them to design and establish a process cycle and test some of the toolbox methods
  - Measure and indicate impacts of variance of forecast from actual
  - A trial confirmation of capacity within an agreed new process, within variance limits
- Set targets within design and trial testing of processes and tools
  - Agree to measure cost implications of confirming capacity within trial target variance
  - And agree contingency process and actions

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