Demand Driven Planning in Lubricants Supply Chain

A new planning engine to drive a step-change in performance

Or

Incrementalism isn’t enough

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Global Planning Strategy & Performance
Definitions & cautionary note

The New Lens Scenarios are part of an ongoing process used in Shell for 40 years to challenge executives’ perspectives on the future business environment. We base them on plausible assumptions and quantification, and they are designed to stretch management to consider even events that may be only remotely possible. Scenarios, therefore, are not intended to be predictions of likely future events or outcomes and investors should not rely on them when making an investment decision with regard to Royal Dutch Shell plc securities.

It is important to note that Shell’s existing portfolio has been decades in development. While we believe our portfolio is resilient under a wide range of outlooks, including the IEA’s 450 scenario, it includes assets across a spectrum of energy intensities including some with above-average intensity. While we seek to enhance our operations’ average energy intensity through both the development of new projects and divestments, we have no immediate plans to move to a net-zero emissions portfolio over our investment horizon of 10-20 years.

The companies in which Royal Dutch Shell plc directly and indirectly owns investments are separate legal entities. In this presentation “Shell”, “Shell group” and “Royal Dutch Shell” are sometimes used for convenience where references are made to Royal Dutch Shell plc and its subsidiaries in general. Likewise, the words “we”, “us” and “our” are also used to refer to subsidiaries in general or to those who work for them. These expressions are also used where no useful purpose is served by identifying the particular company or companies. “Subsidiaries”, “Shell subsidiaries” and “Shell companies” as used in this presentation refer to companies over which Royal Dutch Shell plc either directly or indirectly has control. Entities and unincorporated arrangements over which Shell has joint control are generally referred to as “joint ventures” and “joint operations” respectively. Entities over which Shell has significant influence but neither control nor joint control are referred to as “associates”. The term “Shell interest” is used for convenience to indicate the direct and/or indirect ownership interest held by Shell in a venture, partnership or company, after exclusion of all third-party interest.

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About Shell in 2016

- 92,000: Average number of people we employed
- $21 billion: Cash flow from operating activities
- 30 million customers: Served every day through 43,000 Shell-branded retail stations
- 30.9 million tonnes per annum: LNG liquefaction volumes
- 2%: Our share of the world’s oil production
- 70+: Number of countries in which we operated
- 1%: Share of our production that was natural gas
- 50%: Our share of global supply of energy
- 3.7 million: Our production of crude oil and natural gas, in barrels of oil equivalent a day
- 57.1 million: Tonnes of LNG we sold
- $1.0 billion: Spent on R&D
- $102 million: Spent on voluntary social investment worldwide
- 1 million tonnes: Amount of CO₂ captured by Quest CCS facility in 2016
Shell business overview

01 Exploration
- Exploring for oil and gas: offshore
- Exploring for oil and gas: onshore

02 Development and extraction
- Developing fields
- Producing oil and gas
- Extracting bitumen

03 Manufacturing and energy production
- Upgrading bitumen
- Refining oil into fuels and lubricants
- Converting gas into liquid products (GTL)
- Producing petrochemicals
- Producing biofuels
- Generating power

04 Transport and trading
- Liquefying gas by cooling (LNG)
- Shipping and trading
- Regasifying (LNG)
- Supply and distribution

05 Sales and marketing
- Retail
- Lubricants
- Aviation
- Power

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Lubricants

- Shell has been the global brand leader (in terms of market share) in finished lubricants for the last 11 years, according to Kline & Company
- We make and sell a wide variety of lubricants for the automotive, heavy-duty transport, mining, power generation, construction and general manufacturing sectors
- Our leading brands include Shell Helix, Shell Rotella, Pennzoil, Quaker State, Shell Tellus and Shell Rimula
- Our lubricants are available in more than 100 countries
- Through technical partnerships with major motor racing teams, we transfer the technology of the race track to the road
What is the Lubricants Supply Chain?

Shell base oil manufacturing plants produce high quality base oils, which are blended with additives at lubricant blending plants to produce finished lubricant products. These products are used in many applications that serve billions of customers daily, helping them go about their daily lives, enabling industry, trade and society to function.

LSC enables Shell lubricants to remain a credible choice for customers year after year.
GLOBAL LUBRICANTS SUPPLY CHAIN

OFFICIALLY THE NO.1 GLOBAL LUBRICANTS SUPPLIER
for ten consecutive years, supplying products and services across multiple sectors in over 100 countries

3,000 EMPLOYEES

60 NATIONALITIES

15 TIME ZONES WITH LSC EMPLOYEES

40 LUBE OIL BLENDING PLANTS

5 BASE OIL MANUFACTURING PLANTS

10 GREASE MANUFACTURING PLANTS

OVER 2.5 MILLION TONS OF BASEOILS USED PER YEAR

OVER 2.5 MILLION BOTTLES FILLED PER DAY

30 MILLION DELIVERIES PER YEAR DIRECTLY AND BY DISTRIBUTORS

8,000 OCEAN-GOING VESSELS

5 BILLION+ LITRES OF SHELL LUBRICANTS SOLD EACH YEAR

Reduce our carbon intensity by 50% BY 2030

PRODUCE 3,000 AND SALEABLE PRODUCTS OVER 10,000 SKUs
LSC – A Brief History

- 2006-2012 SAP single instance
- Standard processes (One-size-fits-all)
- Standard Organisation design, roles and metrics
- Regional and Local planning
- SAP APO (DP, SNP, PPDS and XL !)
- 2011/12 – Demand Sensing & MIO global rollout
- S&OP evolved into IBV with advanced analytics
- DIO almost halved 2011-2016
- 2015 Oil price drops
- Performance focus intensifies
2015 – Planting the seeds of a Paradigm Shift

- Future complexity
- Forecasting remains challenging
- Working harder vs diminishing returns
- Incremental tweaks and fixes not sustainable.
- Fewer opportunities
- Time for a step-change?
- First look at DD in 2015
DD – The Road to Change

2016
- Worked with SmartChain
- Educate & Simulate
- North America, Europe and Asia
- Test results & validate
- Build a business case - $$$
- Software selection

2017
- Global Design, Build, Test, Document
- Pilot – MED Cluster and Krakow Planning Centre
The Value Proposition - $$$

- INVENTORY
- OPEX
- COGS
- OTIF

- Noise
- Stability
- Capacity
- Waste
- DILO
- Safety
2018

- Global and Regional program in place
- Deployment in Americas, Europe and Asia
- DD Leader and Planner training and certification
  - 200+ completed by Feb 2018
- DD1.0 targeted for global completion in 2020

Global Prog Mngt

Spain
Italy
Turkey
Egypt
Malaysia
Philippines
France
Russia
North America (October)
Critical Success Factors & Learnings

- Change Management
- Early business engagement
- X-Functional Teams – it is NOT “just an IT project”
- Leverage ERP backbone (transactions and master data)
- Methodology (Design, Develop, Deploy, Measure, etc)
- Motivation, training and support
- Mindsets & behaviours & habits
- Significant increase in process visibility & transparency
- Process discipline (DDS&OP, E2E Ways of working, compliance)
- Scope, timeline and network complexity (old world/new world)
- Focus & Leadership
- Master data, Master data, Master data, Master data, Master data
Questions ?
Nick’s supply chain career covers global and operational roles in leading FMCG, Pharmaceutical and Downstream Oil and Gas.

He has driven a major change agenda into the Shell Lubricants supply chain over the last 11 years bringing Demand Sensing, Advanced Scheduling, Integrated Business Planning and now Demand Driven planning.

Nick believes that simply working harder at the same things is not enough to prepare leading supply chains for tomorrow’s challenges.