

Springer Series in Supply Chain Management

Sanchay Roy
Stewart Dunbar

Improving Supply Chains in the Oil and Gas Industry

12 Modules to Improve Chronic
Challenges for Maintenance, Repair and
Operations

Foreword by
Knut Aliche



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Supply Chain Management (SCM), long an integral part of Operations Management, focuses on all elements of creating a product or service, and delivering that product or service, at the optimal cost and within an optimal timeframe. It spans the movement and storage of raw materials, work-in-process inventory, and finished goods from point of origin to point of consumption. To facilitate physical flows in a time-efficient and cost-effective manner, the scope of SCM includes technology-enabled information flows and financial flows.

The Springer Series in Supply Chain Management, under the guidance of founding Series Editor Christopher S. Tang, covers research of either theoretical or empirical nature, in both authored and edited volumes from leading scholars and practitioners in the field – with a specific focus on topics within the scope of SCM.

This series has been accepted by Scopus.

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**“It is not the
strongest of the
species that
survives; nor the
most intelligent
that survives. It is
the one most
adaptable to
change.”**

.. its been said before.

Dedication

To our parents, our lovely wives,
two daughters, a son and a dog.

In the memory of my Father. I wish we had
more time together.

Foreword

For the last 25 years, I have been helping companies across all sectors to improve their supply chain performance and prepare for the future. Topics range from setting up integrated planning processes, ensuring the right organisational structure, governance and incentives, optimising the physical distribution network, manufacturing and sourcing through to ways of predicting the future with new algorithms like machine learning. I am passionate about building/improving the capabilities of supply chain professionals and adjacent functions as an important enabler of sustainable change.

This is where my journey with Sanchay started. Attending the McKinsey Supply Chain Executive Academy, Sanchay and I started a very fruitful journey of brainstorming and continuous exchange on the latest and greatest ideas across the supply chain. Sanchay gave a tremendous keynote on supply chain management in oil and gas in one of the later sessions of this event. He also contributed to a book I wrote (*Supply Chain Segmentation*, Springer Publications) in 2015 with a chapter on Philips Case Study and has always been eager to improve and give back to the supply chain community.

In 2019, Sanchay and Stewart approached me with the idea of writing a book on how to improve the supply chain in oil and gas. I was extremely supportive for this important topic, to review, brainstorm and write a foreword—and indeed, here we are.

Supply chain is a relatively young discipline—having its roots in fast-moving consumer goods (FMCG) and consumer electronics it developed into an important pillar for success for many other industries. It covers end-to-end planning, involving sales, manufacturing, procurement and finance in a regular process facilitated by supply chain managers to prepare for the order intake, to ensure the right availability of products and finally to deliver to the customer what they ordered on time. The latest developments in digital have helped create a depth of visibility in the end-to-end process from customers to suppliers to further improve the supply chain performance. With the advent of e-commerce, the customer experience in placing

an order, having an instant view on availability and ultimately a reliable delivery is appreciated by all of us and in turn has also led to a change in business-to-business transactions. On the journey, the supply chain manager evolved from someone who was only visible if something went wrong to a critical enabler of success—this is reflected by the many chief supply chain officers we see in today's organisations.

But hold on—do all these concepts and processes make sense in the oil and gas supply chain? In my daily work I often hear questions like integrated planning and visibility are nice in other industries, but are they really applicable in oil and gas? Is not the focus different?

Not at all—these principles still apply and help a lot in oil and gas as Sanchay and Stewart lay out in this excellent book.

The oil and gas industry has, and will continue, to focus on production—topics like the supply chain maintenance, repair, and operations (MRO) are important, but traditionally approached on a 'just in case' basis. Huge piles of inventory make managers feel secure against any stoppages which would result in huge and immediate losses in revenue. Time is of the essence and spare parts/equipment availability is key—the cost of losing an hour of production is very high and delayed projects can be even higher! At the same time spares need to be planned very carefully; it does not help if a part has gone beyond its shelf life or simply cannot be found in the enormous mountains of inventory.

Sanchay and Stewart experienced these shortcomings and took action—they improved the supply chains they were responsible for applying concepts they learned in other industries and discovered a huge and untapped improvement potential. It is great to see how they brought advanced supply chain management concepts to the oil and gas industry to change the way MRO is operated. The outbreak of the COVID-19 pandemic also accelerated the need for a well-functioning/well-oiled MRO machine.

Sanchay and Stewart have developed a holistic framework consisting of 12 elements to configure, plan and execute the MRO supply chain. Sustainable impact is only achieved through a holistic approach, complementing the technical part with a change in mindset and the right capabilities to work together in the end-to-end supply chain.

I like the wealth of practical advice like *'Fail to plan? Then plan to fail'*, redefining the well-known sales and operations planning (S&OP) process into a 'planning and operations planning (P&OP)' planning and many other tips and tricks. The concepts introduced are deeply rooted in practical supply chain applied in the oil and gas sector.

The lead time from idea to book was extremely short. Sanchay and Stewart did a great job not only describing supply chain, but even developing a practical framework and focusing on technical, capability and change topics.

The book should serve as a playbook to improve supply chain in oil and gas. Thank you Sanchay and Stewart for bringing it to life. Enjoy reading the book.

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November 2021

About the Authors

The idea for this book arose after the global outbreak of COVID-19 in March 2019. This was soon followed by the low oil price which witnessed one of the global oil indices drop into a negative position for the first time in history. The oil majors declined to make dividend payments for the first time since the Second World War, and there was a question mark over the future of these behemoths.

We were part of a task force to understand the vulnerability in the upstream inbound supply chain, where it gave us an unusual opportunity to look ‘under the bonnet’ of this organisation and consider impacts and consequences of things outside of our day-to-day tasks.

We do not profess to be experts in all of the areas we have discussed in this book, but we have had the opportunity to piece together the common threads and the limitations imposed. In some cases, COVID-19 had a detrimental impact, but in others it forced a change in the organisation that under normal circumstances would never have been considered.

We wrote this book late in the evenings and weekends, across continents from Nigeria to the Netherlands to the UK, with the blessing (sometimes we suspect reluctantly) from our families as an opportunity to share what we saw and encourage a discussion to happen on a broader scale across other IOCs and like-minded peer groups.

We are at the start of this journey; we have by no means solved the problem nor do we profess to have all the best solutions, but we have attempted to define the problems and suggest ways they can be tackled from our own experiences and observations.

Thank you for reading our book, and we wish you well in your personal journeys.

Sanchay Roy is a seasoned professional with a great deal of experience in supply chain and Lean methodology. He has worked across several sectors including oil and gas, consumer goods and chemicals. He is a global operation, supply chain and continuous improvement professional with a broad background in business transformations.

As a global professional, he has lived and worked in India, the UK, Germany, Belgium and the Netherlands and has had significant work experience in China,