NEW PRODUCT INTRODUCTION CHECKLIST

A Guide to Getting Started with NPI

INTRODUCTION

The successful introduction of a new product relies on careful planning and implementation in areas from design drawings through to supply chain management and industrialisation. A New Product Introduction (NPI) strategy manages these activities as part of an overarching plan.

NPI is a proven, systematic, and repeatable process of taking a new product from concept to through to production. It helps businesses in every industry bring new products to market efficiently, quickly, and cost-effectively without falling into the known traps and challenges often encountered when trying to ramp up and scale supply from concept to repeatable series production.

The goals of the NPI process are to enhance quality, increase production efficiency, reduce risks, minimise waste, improve speed to market and save money through the application of real-world knowledge and experience.

Developing an NPI strategy that's right for your business can be a daunting prospect, especially if you are new to the principles of bringing a product to market. There are lots of factors to consider and each part of the process comes with its own set of challenges and risks that you will need to manage.

To help you get started, Ricardo's industrialisation consultants have compiled this checklist with some of the things that you need to consider when developing an NPI strategy for your new product.

We have broken our checklist down into four categories that are essential to the NPI process; commercial viability and business strategy, supply chain management, process engineering and quality assurance and compliance.

BENEFITS

Implementing an NPI strategy early can reduce risk, lower development and production costs, improve product quality, reduce time to market, and makes it easier to scale and vary production.

> IMPLEMENTING A NEW PRODUCT INTRODUCTION PROCESS IS WIDELY RECOGNISED AS A WAY OF ENSURING THE LAUNCH SUCCESS OF NICHE VOLUME AND HIGHLY SPECIALISED PRODUCTS.

WHAT IS THE NPI PROCESS?

Ricardo's new product introduction process is made of up 5 stages.

We start by meeting with you to discuss your problem or plan for manufacturing, then discuss our capabilities – and illustrate these with case studies. We work collaboratively with you, to understand the challenge and develop a solution ready for you to implement, or for us to fulfill if you prefer.

Phase 0: Concept Study where we assess the feasibility of progressing the concept to manufacture. This will give a clear indication of launch readiness. We appraise the key manufacturing requirements including a review of processes, supply chain and risks.

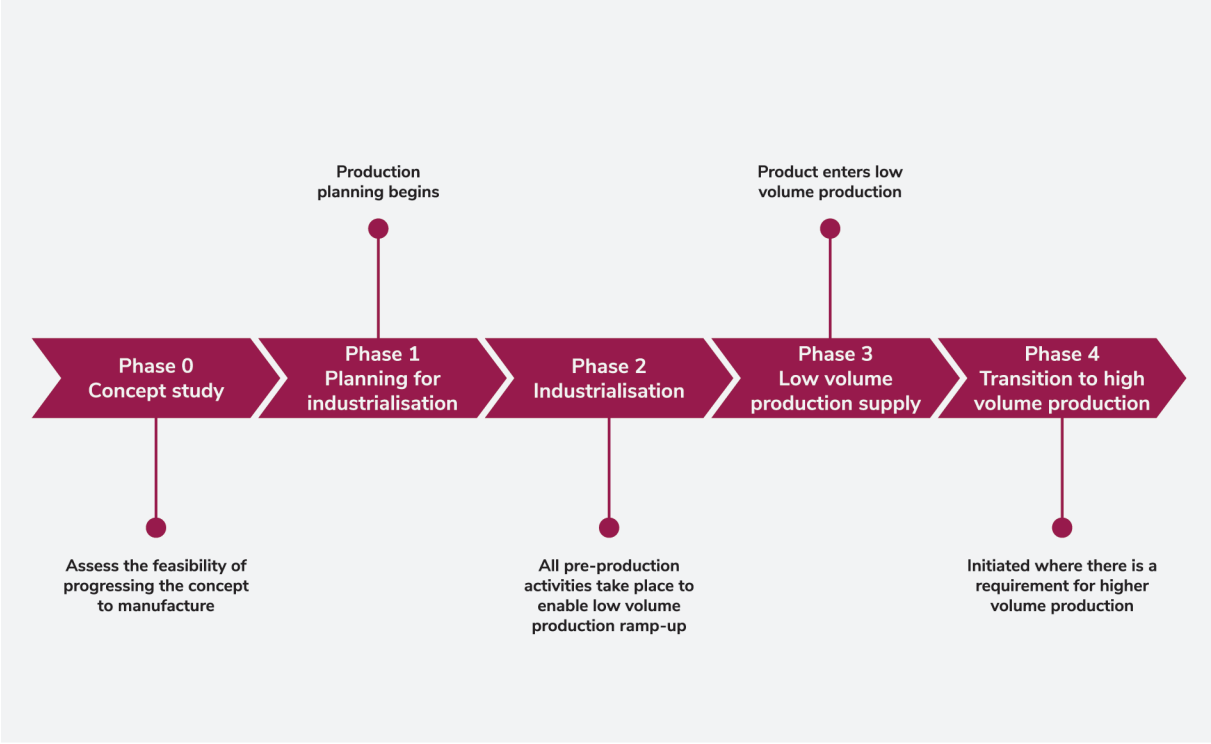
Phase 1: Planning for Industrialisation where production planning begins. This covers everything from assembling a project team to planning out investment requirements.

Phase 2: Industrialisation where all pre-production activities take place to enable low volume production ramp-up. The production facility will be ramping up in capability during this phase in preparation for the production kick-off. Designs are typically frozen at this point in readiness for start of production.

Phase 3: Low Volume Production Supply where the product enters low volume production.

By this point all processes will have been implemented to ensure production quality is of the highest standard and that the supply chain is fully validated and prepared for launch. The facility is commissioned and handed over to enable ramp-up and training.

Phase 4: Transition to High Volume Production is initiated when there is a requirement for higher volume production.



COMMERCIAL VIABILITY AND BUSINESS STRATEGY

It may seem like we are stating the obvious but before you can begin to plan out your new product introduction strategy you need to ensure you have a good understanding of the commercial viability of your product.

This includes determining when to go to market, developing a plan for industrialising the product, and calculating the costs associated with getting the product to market. You will need a core knowledge of the objectives of the product and the market drivers.

Without a fundamental understanding of the commercial viability and business strategy behind your product then it will be difficult to plan a robust financial and production strategy that can scale as you grow.

BUSINESS STRATEGY

- ☐ Write down the core objectives of your product.
- ☐ Consider the market requirements for your product and how they impact your production strategy.
- ☐ Decide when you want to go to market. Consider what is a realistic timeframe regarding industrialisation processes and market demand.
- ☐ Get your industrialisation plan in place for taking your design to market.

COMMERCIAL VIABILITY

- ☐ Investigate if your design can be manufactured at the volumes required to meet market requirements.
- ☐ Get a good understanding of how much it will cost to get your product to market. Make sure this includes:
  - Bill of Materials (BoM)
  - Labour and resources
  - Overheads
  - Transformation
  - Equipment
  - Rents and rates
  - Packaging and logistics
  - Warranty
  - Non-recurring engineering eg design and development
  - Cost per unit – part and assembly

SUPPLY CHAIN MANAGEMENT

A sustainable supply chain management (SCM) strategy is the backbone of any production programme. It is a requirement for every manufacturing business to build a robust, quality assured, supply chain network that is traceable, transparent and ensures the required quality and supply continuity of your products and services.

SCM is one of the key considerations for building a successful new product introduction framework. It helps ensure that manufacturers can embed a repeatable and sustainable manufacturing process to supply products that fully satisfy client expectations and are validated to specification. Without it, your products can fall at the first hurdle, causing delays, reducing operational efficiency, adding cost, and impacting launch to market.

SCM

- ☐ Develop a supplier profile before you start searching. Consider what capabilities they should have and what their approach to ESG should be.
- ☐ Make sure potential suppliers are aware of your objectives, requirements and values. Make sure you are aware of theirs too.
- ☐ Ensure that you have robust supplier terms and conditions in place.
- ☐ Make sure you are up to speed on supplier warranty and liability.

GOOD SUPPLY CHAIN MANAGEMENT IS ESSENTIAL TO YOUR NPI STRATEGY.

PROCESS ENGINEERING

Process engineering is the discipline of designing, optimising, and controlling manufacturing processes. It is essential as you develop your new product introduction strategy because it ensures that the product can be manufactured and assembled efficiently, cost-effectively, and to the required quality standards, both commercially and legislatively.

By incorporating process engineering into your NPI strategy, you can minimise the time and cost required to bring a new product to market.

It can also help to identify potential quality issues early in the development process, reducing the risk of costly rework and delays.

We have broken down process engineering into three segments; product design, facility, quality control. Each has its own considerations but you will need to consider them holistically for the best outcome.

PRODUCT DESIGN

- ☐ Review the design and ensure:
  - It can be manufactured and assembled.
  - It is optimised for production and value.
- ☐ Plan early for upgrades and new versions of the product.
- ☐ Develop a process for design change control.

QUALITY CONTROL

- ☐ Consider how you will ensure product quality throughout the production process.
- ☐ Develop a process for problem resolution.

FACILITY

- ☐ Ensure your facility can meet the volumes you intend to manufacture at.
- ☐ Check that the location of your facility is right for your product. Consider if it has good access to the distribution channels and resources that you will require for production.
- ☐ Draw up a plan to ensure the facility operates safely.
- ☐ Make sure that your facility can operate at the quality assurance level required.
- ☐ Optimise your facility layout. Consider how it will handle the requirement to ramp up or down to meet demand.
- ☐ Ensure your facility can manage the stock required for production and supply.

QUALITY ASSURANCE AND COMPLIANCE

Quality assurance and compliance are essential for manufacturing programmes because they help to ensure that products meet certain standards of safety, reliability, and quality. These activities are there to protect consumers, avoid costly recalls or litigation, and maintain the reputation and profitability of your business.

Quality assurance processes are planned and systematically implemented to ensure a certain level of quality of your finished product. These processes can help you to identify and address production problems early, saving the organisation money and protecting the brand.

Compliance involves making sure that your product and processes meet regulatory standards and guidelines mandated by certifying bodies and standards authorities. Failure to comply with these standards can result in fines, legal action, or even the closure of the manufacturing facility.

QUALITY ASSURANCE AND COMPLIANCE

- ☐ Develop a robust supplier quality manual and make sure that your suppliers are aware of what is expected of them.
- ☐ Research the quality standards that you must adhere to for the individual components and the assembly of your product.
- ☐ Ensure that you have the correct manufacturing certification in place and that you are compliant with any legislation required for the production and distribution of your product.

NEED HELP GETTING STARTED?

There are many factors to consider when developing your new product introduction framework. Finding the time and resource to plan your strategy and successfully implement it can be a challenge. But implementing these NPI processes is widely recognised as a way of ensuring the launch success of niche volume and highly specialised products. It can reduce risk and time to market, improve quality, future proof your production strategy, and save your business money.

Ricardo's industrialisation consultancy experts are on hand to help you on your NPI journey, no matter what stage you are at in the process.

Our first-hand experience in delivering niche volume, high-quality manufacturing and assembly programmes for the most demanding automotive and motorsport sectors has taught us that there is no 'one-size-fits-all' approach to NPI. That is why we tailor our approach to New Product Introduction according to the requirements of our clients and their products.

Whether you need a framework developing to get you up and running, some supply chain management guidance, or require our troubleshooting service, our dedicated team of experts are on hand to help.

Our support is both commercial and technical: combining profound knowledge both of 'nuts and bolts' operational and manufacturing processes, and strategic business insight.

Our niche New Product Introduction service will help your growing business to ramp up as quickly, effectively, and efficiently as possible, without compromising cost or quality; and to 'de-risk' that journey through the application of real-world knowledge and experience.

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SHOREHAM TECHNICAL CENTRE
SHOREHAM-BY-SEA
WEST SUSSEX
BN43 5FG

E: INFO@RICARDO.COM
W: WWW.RICARDO.COM/NPI