

# CONCEPT TO CUSTOMER

## REDUCING THE PRE-PRODUCTION TIMELINE

New product development now requires a convergence of technology, marketing, product design, engineering, and manufacturing capabilities. Speed, efficiency, and quality in product development are the challenges in today's intensely competitive environment.

CAD CAM has many advantages, but the fact is that designers and pattern technicians are still required to operate the software and peripheral devices to derive the full benefits of these systems.

The evolution of technology, markets and competition have brought changes to virtually every sector of endeavour and have made new product development one of the most powerful business activities. Companies leading their industries attribute more than half of their income to new product development. By contrast, companies at the bottom of their industries obtain less than 10 % of their sales from new products.

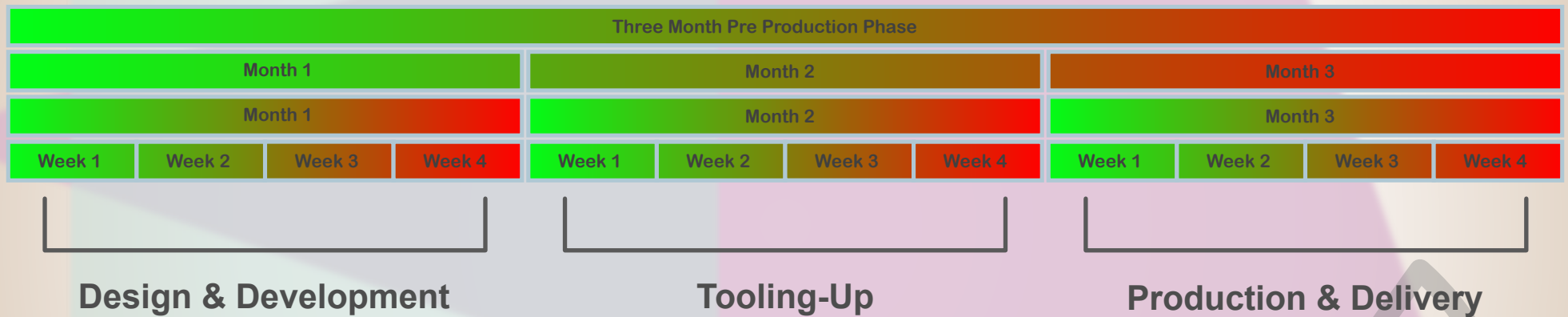


**FLIC**

Footwear & Leather Industries Cluster

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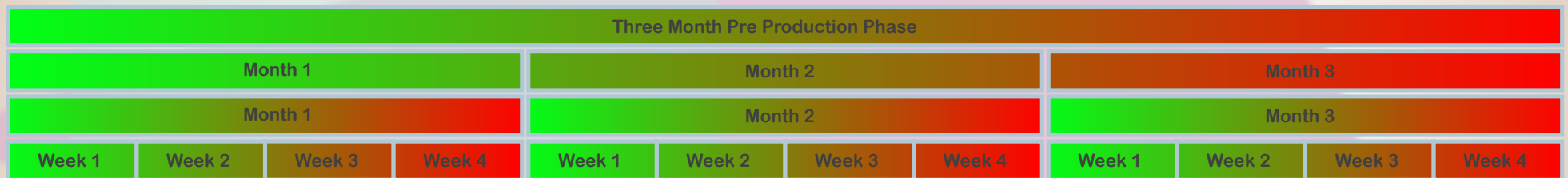
## THE TRADITIONAL PRE-PRODUCTION TIMELINE





# CONCEPT TO CUSTOMER

## THE 3D CAD APPROACH TO REDUCE THE PRE-PRODUCTION TIMELINE



Design & Development

Tooling-Up

Production & Delivery



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The 3D CAD system enables a considerable amount of development without physically making the prototype. The last, heel or unit as well as all materials, can be viewed as a virtual model and initial modifications to the project can be made. The virtual sample is also an effective way to visualise various colour combinations for approval prior to samples being made. These are some of the ways in which 3D CAD can assist during range building before the technical phase.

Technology and skills development are both fundamental in the area of product development.

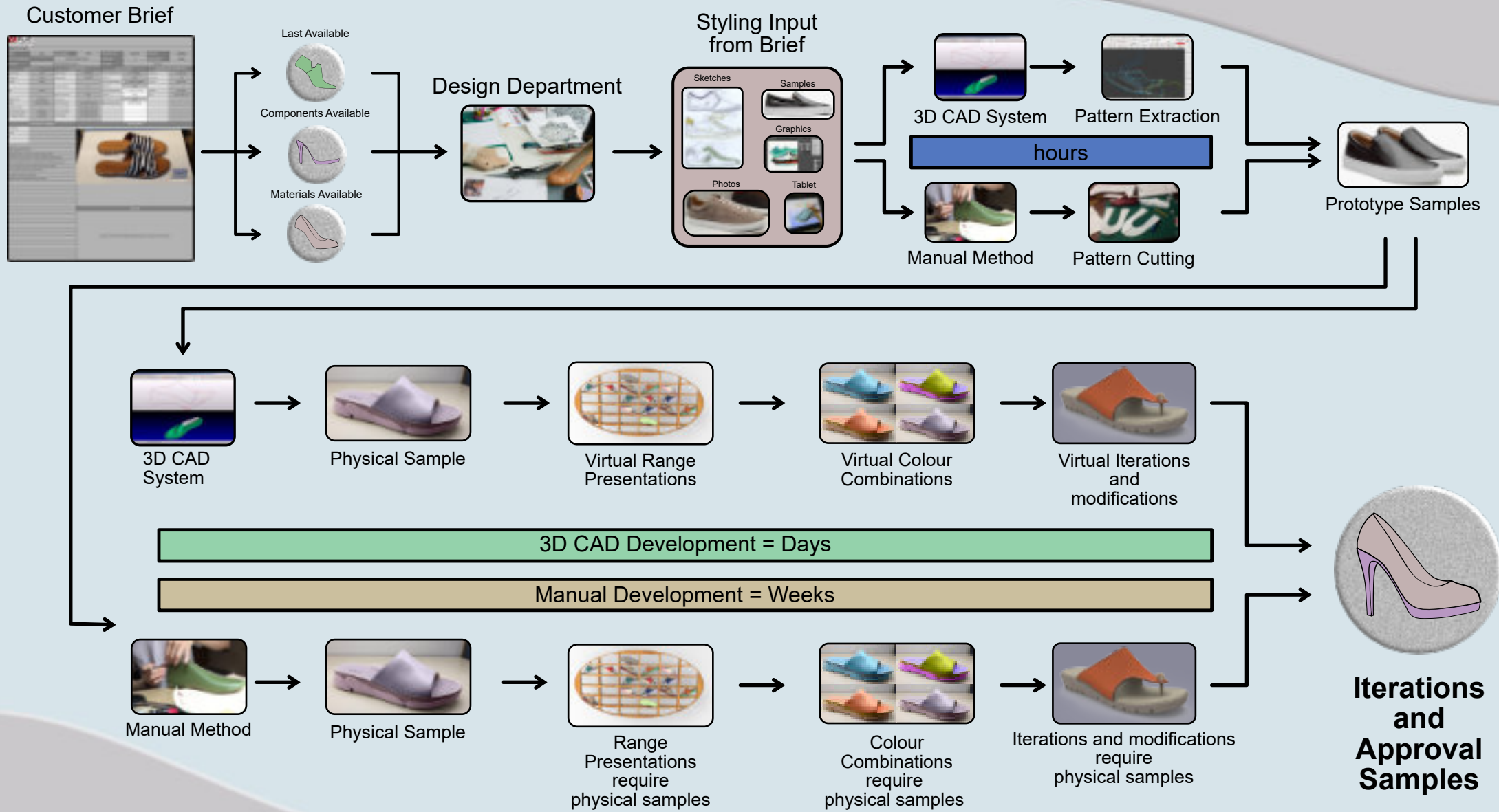
Companies need to embrace the view that whilst new products are transient, the skills and expertise needed to develop these products are a much more persistent requirement for success.

The current government initiatives such as the establishment of technology centres and funding incentives for manufacturers offer the ideal platform for the footwear industry to benefit from the introduction of new technology in the manufacturing environment as well as skills development programs to ensure that technicians have the expertise to make full use of these technologies.



# Concept to Customer

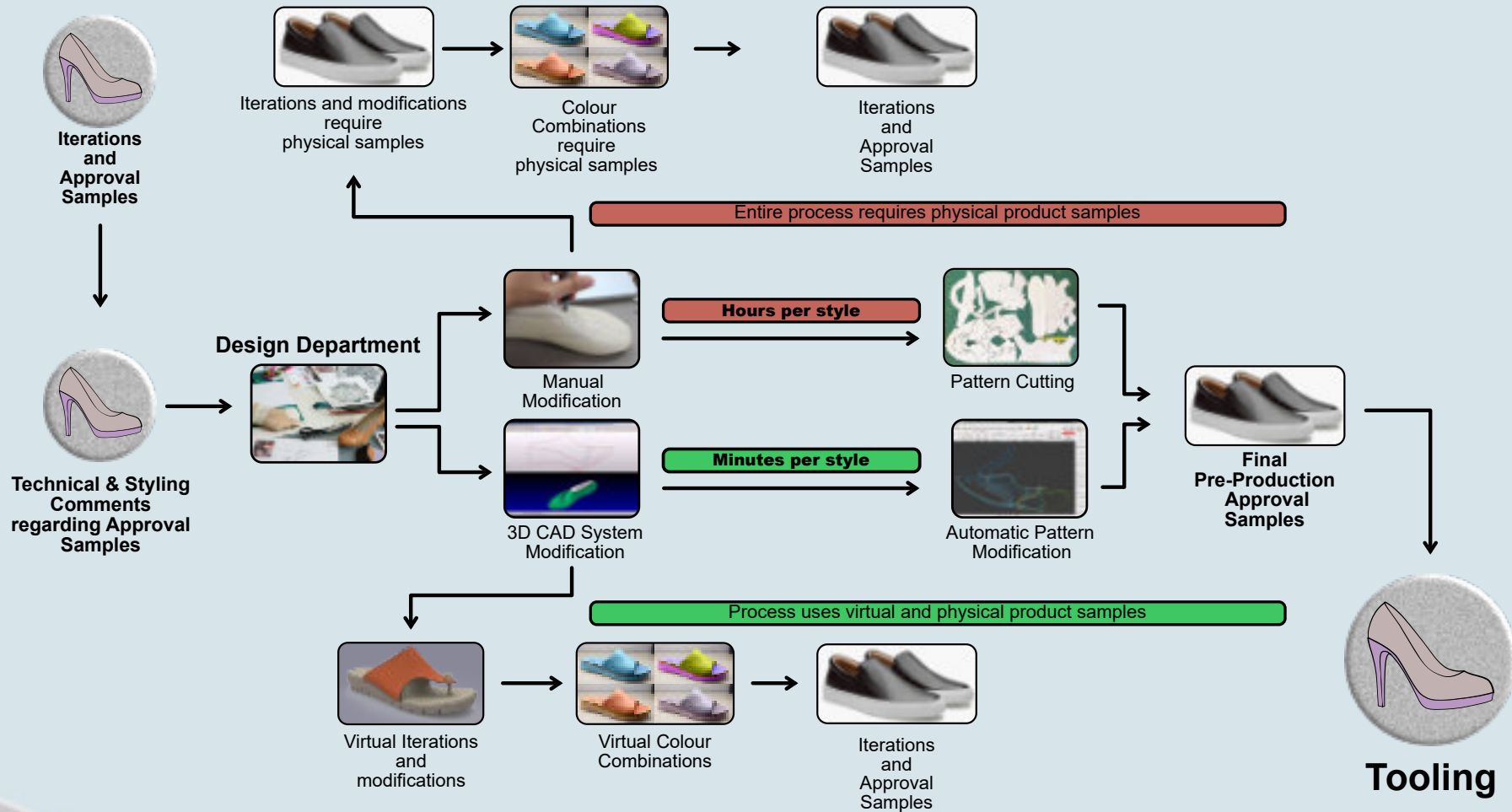
## New development from Customer brief



3D CAD Performs in days what traditional methods take weeks to complete

# Concept to Customer

## Iterations & Approval Samples from Customer brief



3D CAD Performs in days what traditional methods take weeks to complete



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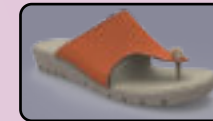


3D CAD System

Starting with the conceptual and design phase, 3D CAD utilises, hand sketches, renderings using graphics software or pictures to produce virtual samples.



Virtual Range Presentations



Virtual Iterations and modifications

**All Virtual samples use CAD last and component data.**



Physical Sample

**Virtual sampling used to produce all iterations and colour combinations prior to physical sampling.**



Virtual Colour Combinations



### Briefing

Brief requires detailed information regarding all aspects of the development including, Lasts, materials & components, sampling & approval procedure. Packaging, logistics and delivery also need to be specified.



### Last Requirements

The facility for standardisation is enhanced using 3D CAD software, last makers can have standard profile curves and back parts for various heel heights. These profiles can then be used by component suppliers when making heels and units, allowing more flexibility for the manufacturer to change the heel or unit from different suppliers.



### Components & Prototyping

The 3D CAD system enables a considerable amount of development without physically making the prototype. The last, heel or unit as well as all materials, can be viewed as a virtual model and initial modifications to the project can be made. The virtual sample is also an effective way to visualise various colour combinations for approval prior to samples being made. These are some of the ways in which 3D CAD can assist during range building before the technical phase.



### Samples & Prototyping

Traditionally a number of prototypes would have to be produced to reach this stage including last and pattern revisions all requiring a significant amount of work in the factory and design department. With all the 3D innovations, the main objective is still to produce footwear, therefore the technical 2D pattern development is the most important once the styles have been selected for sample production. All data from virtual samples and pictures created with 3D CAD are available for 2D processing and it is now that all the technical patterns are produced.



### Virtual Presentations

3D Samples can be arranged into virtual presentations. These can also be used for online colour adjustments and styling modifications.





Design Department

Having a CAD system in the design office changes an environment that is usually quite cluttered into one where all pattern and design data is easily accessible with no need for a frantic search for something that has been misplaced. While the first systems were very basic, processing only 2D pattern information, the advancements in software development, not only in the footwear industry, but in all fields of engineering have allowed for all data to be managed by 3D CAD software. Considering that all pattern and component development starts with the last, having software that functions using all data from the last would be the logical approach. With last, heel, sole and unit developments, the last is imperative and for manufacturers and component suppliers to be able to share this data, the results are bound to be more accurate.



Specifications

The CAD simply replacing the traditional tools and allowing the information to be shared, rather than duplicated. This information can be accessed directly from the database by the costing software. Specifications are generated via the application as well as Techspec Data for stitching, skiving, materials etc.



Virtual Sampling

Having the ability to view virtual 3D developments, whether they are complete shoe models or any of the many components that make up the finished product, these can be assessed quickly and, if required, hard copies realised with the aid of 3D printing should the development be deemed viable.



### Iterations and Approval Samples

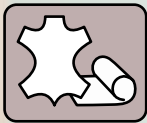
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### Costing



All costing data is acquired via the pattern information provided by the CAD system. Consumption and layout are calculated. This information is exported as .csv to external costing system if necessary.

### Bill of Materials



The bill of materials is accessed directly from the network with all relevant codes, supplier information, colours and availability.

