



Customer Driven New Product Development Processes

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INTRODUCTION

To achieve better products at lower cost and with shorter time to market many businesses have embraced the concept of concurrency in their development processes. Defining the "what's" and the "when's" of concurrent product development processes is comparatively straight forward but, to define the "how to" and what new skills are required to implement these processes is more challenging.

Concurrency and compressed time scales demand that product development teams have a good understanding of their customers' needs. They need to understand the measurable parameters which control the degree to which these customer needs will be satisfied. Once these parameters are well understood specific targets that achieve competitive customer satisfaction levels for the product can be set. Whilst this has value, in checking to see whether prospective customers will be satisfied with the product prior to launch, for there to be an effective product development process these targets need to be translated into sub-system targets and then to component specifications that designers can work to.

This is a complex process that requires, depending on the product, links between different functional groups including: Styling, Pre-Engineering, Design, Product Development and Manufacturing Development. There needs to be a common understanding of the prioritised customer buying influences, customer satisfaction characteristics and product planning requirements using target setting processes, systems engineering and "analysis leads design" capabilities. This process needs to be documented and disciplined so that with consistent implementation it can be continuously improved to enhance the quality of customer focused target setting and decision making throughout design and development activities.

MULTIFUNCTIONAL TEAMS

The multifunctional team is essential to the success of the product development target setting process, product development target setting is a parallel team effort rather than classical serial functional activities.

The target setting team should include members of the product development team, i.e., Innovation, Marketing, Product Planning, Styling, Pre-Engineering, Systems Engineering, Product Development, Manufacturing Engineering, Purchasing and Finance. These functional groups must actively participate in the product development target setting/product planning effort and most importantly commit to the time and resources necessary for the effort to convert engineering related subjective targets to predictable measurable targets as appropriate.

SYSTEMS ENGINEERING

The team will need to use systems engineering and “analysis leads design” simulation methods to allocate overall product targets to subsystem targets; in conjunction with other areas e.g. internal system engineering/product development teams, internal and external strategic suppliers, fabrication and assembly manufacturing engineering, tool and die manufacturing engineering.

For a complex product there is not one systems model that will be able to provide the necessary information for the deployment of targets from the overall product level to the sub system and subsequent component levels rather there are many. For a vehicle these would include models for:

- Overall product system
- Engine (inlet/exhaust systems)
- Weight reduction, vehicle performance and consumption

- Reliability
- Safety
- Engine cooling
- Internal climate
- Styling (internal/external)
- Body engineering
- Vehicle suspension, brakes, handling
- Engine suspension
- Harshness
- Acoustics and vibration

CRITICAL SUCCESS FACTORS FOR IMPLEMENTING CUSTOMER DRIVEN TARGET SETTING

Product development target setting implementation requires:

- Cultural change:
 - From: *"Here is what we have developed ..."*
 - To: *"Here is what you told us you want ..."*
- Organisation:
 - » Focused Targets
 - » Team Commitment
 - » Structured Process
 - » Leadership
 - » Continuous Improvement
- Education:
 - » Disciplined Process
 - » "Lean" Effective Implementation
 - » Integrated "User Friendly" Tools
 - » Powerful Data Management & Control
 - » Critical Success Factors & Measures

BENEFITS OF A CUSTOMER DRIVEN TARGET PROCESS FOR PRODUCT DEVELOPMENT

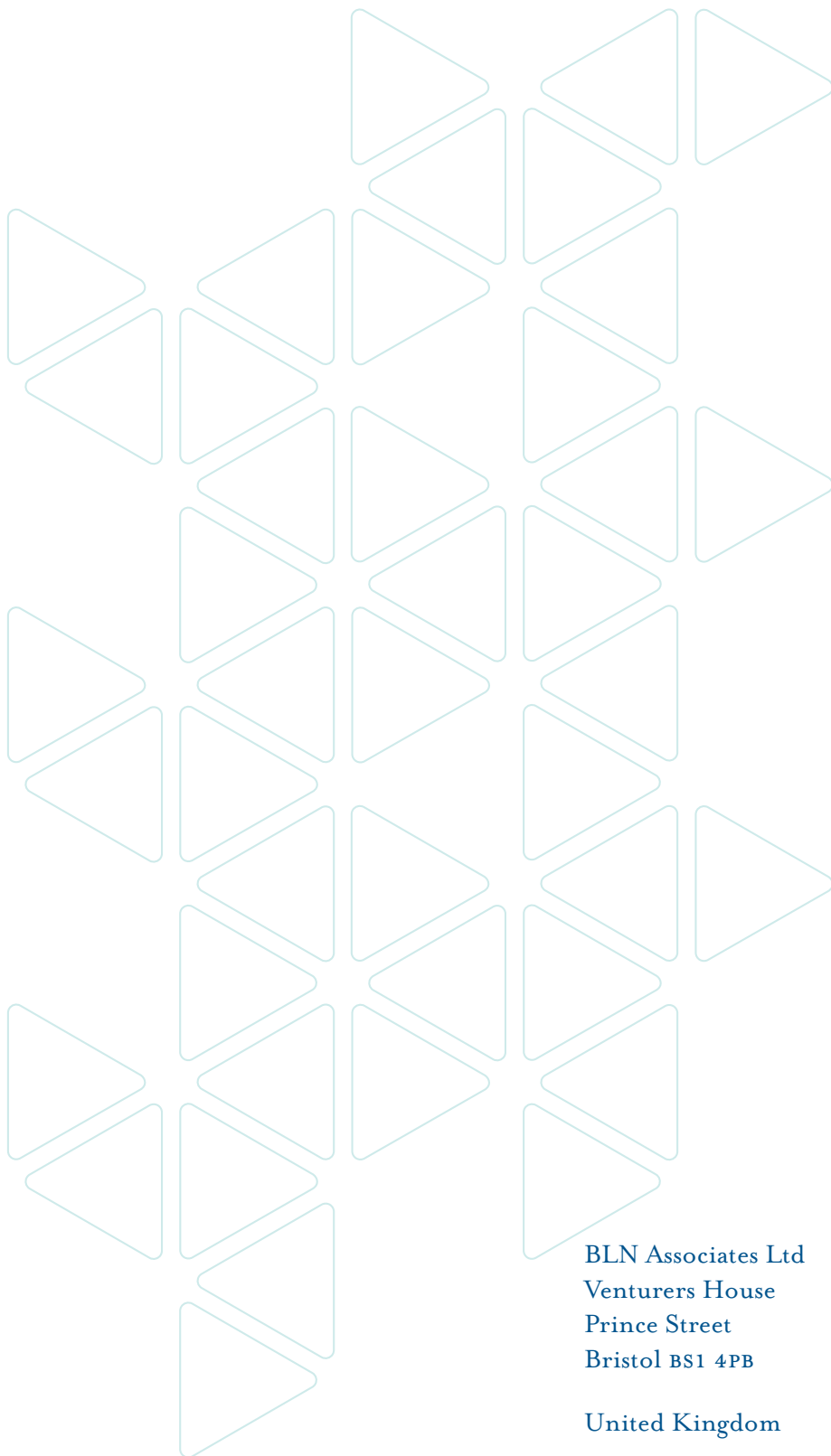
- More Stable and Focused Specifications (Internal/ External)
 - » Reduced development iterations
 - » Reduced development costs

- Faster Selection of Product and Sub-System Concepts
 - » Faster, better decision making
 - » Increased creativity leading to better solutions
- Design Targets Which Predict Customer Satisfaction
 - » Increased market share
 - » Reduce risk

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