V.Ryan - World Association of Technology Teachers

THE INDUSTRIAL PRODUCT DESIGN PROCESS

STAGE 1

MARKET RESEARCH

**NEW PRODUCT INNOVATION,
INITIAL CONCEPT MARKETING,
PRODUCT PLANNING ROADMAP,
GENERAL RESEARCH.**

Gathering key information from your target market, working out your product's position. Conduct preliminary feasibility checks and initiate important first steps, that create a solid foundation for the development process.

CONCEPT GENERATION

**ASSESS YOUR CUSTOMERS' REAL NEEDS AND DESIRES,
BRAINSTORMING,
CONCEPT GENERATION,
SKETCHING,
CONCEPT REFINEMENT.**

Your product's life begins with creative brainstorming, which leads to rough concepts, which are distilled into product concept sketches, with emphasis on functionality and aesthetics

PATENT AND COPYRIGHT

**PATENT RESEARCH,
COPYRIGHT RESEARCH,
DESIGN PATENT APPLIED FOR,
PATENT PENDING STATUS.**

A broad search into existing patents is done before moving to the design stage. A formal provisional patent application can be more effective protection once a cohesive design is completed.

STAGE 2

INDUSTRIAL DESIGN

**FOCUSSED CONCEPT SKETCHES,
SHAPE AND FORM STUDIES,
HUMAN FACTORS,
INITIAL CAD DESIGN.**

Industrial design determines your product's function, ergonomics, use scenario and look and feel. These crucial factors will affect your customers experience with your product and may determine its success.

ENGINEERING

**MECHANICAL ENGINEERING
ELECTRONICS ENGINEERING
3D CAD DEVELOPMENT
SOFTWARE AND FIRMWARE**

Engineering details are worked out through real-life simulation and computer simulation, using real world dimensions and tolerances. The CAD model will then lead to a physical prototype, which is then tested for function, ergonomics and aesthetics. Focus group involved.

ADVANCED DESIGN AND PROTOTYPING

**3D PRINTING - STEREOLITHOGRAPHY,
MODEL EVALUATION,
STRESS AND PRODUCT TESTING,
DESIGN REFINEMENT.**

3D printing, CAD simulation and general testing begin, leading to the evolution from idea and concept to the real world.

STAGE 3

PRODUCTION

**FACTORY PARTNERING,
QUALITY CONTROL,
MANUFACTURING MANAGEMENT,
DISTRIBUTION AND LOGISTICS.**

After a thorough design process your product goes to the factory to be manufactured, quality checked and distributed.

DESIGN FOR MANUFACTURING

**SUSTAINABLE MATERIALS AND COMPONENT SOURCING,
MACHINE TOOLING DESIGN,
ASSEMBLY LINE SET UP,
MANUFACTURING LOGISTICS.**

Sourcing materials, organising the essential machine tooling, setting up an efficient and flexible production line and working out the on-site logistics, are the final stages of bringing your product to life.

BRAND AND PRODUCT

**GRAPHIC DESIGN,
LOGO DESIGN,
BRAND DEVELOPMENT,
PACKAGING DESIGN.**

You products identity revolves around its brand. This is conveyed through its logo and packaging, as well as unique graphic language and graphic design.

Sustainability

Closed Loop recycling

Cost Control

Strategic Planning

Flexible Manufacturing

Skills Training

Investment

Market Place

Competition

Continuous Improvement

Technological Innovation

Replacement Planning

Market Awareness

Just in Time

Promotion / Advertising

Quality Systems

Materials Technology

Environmental Issues

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