TOYS AND THE DESIGN PROCESS

One of the characteristics of humans is our innate ability to create. This skill is applied not only by product designers, engineers and artists, but is evident in everyday life: solving mathematical problems, deciding what a family will have for dinner, or how to get home. Our daily routine is filled with the need to solve problems - the solutions we find may be brand new or taken from previous experiences.

Although creativity may be instinctive, the design process is generally studied and the techniques applied to particular problems, such as the design of toys. The method is used to organise and manage design projects efficiently and to aid the effective communication of ideas. Traditionally, designers were considered solely to be stylists, however today the more skilled toy designers have a working knowledge of technology, manufacturing processes, aesthetics, play theory, human factors, marketing, finance, and so on. It is this multi-disciplinary approach which requires the designer to be able to effectively communicate with others in the business and also consumers. A great idea is nothing without the ability to communicate the concept, verbally, through graphics and in written form.

Toy design, as in all forms of product design, consists broadly of five phases; the brief, background research, prototyping, testing and evaluation. The brief describes the requirements and wishes in terms of functionality, features, costs, time-lines, production volume, company brand fit and target market, to list but a few categories. This is all drafted into a Product Design Specification (PDS).

The second phase involves background research. During this process, the practicality of the design concept is examined in terms of estimated costs, availability or access to required resources, competitor's products and essentially understanding the problem. Here the toy designer would ask questions, perhaps acquire opinion from experts or user groups, to remove any ambiguity in the project brief. The project could be terminated at this phase, if the PDS is discovered to be unachievable or unrealistic.

The next phase focuses on creating solutions. ‘Blue Sky' thinking allows all possibilities to be investigated, and these are filtered through various criteria, as required in the PDS, into a series of practical solutions. Generally the final stages are designed using advanced Computer Aided Design (CAD) software packages. These design solutions would be embodied as prototypes; aesthetics, functionality, mechanical and electronic aspects, and manufacturing issues are all considered. There is a tendency for novice toy designers and students to consider each matter consecutively, while the accomplished designer would view them simultaneously.

The prototypes then undergo a series of tests - in usability groups, play groups, manufacturing, safety, structural and material tests. The outcomes may highlight shortfalls in the original idea, which results in a repetitive process whereby the concept would return to the previous phase for refinement. There may well be a number of repetitions, which should have been accounted for during planning.

At the end of the design process, the toy is evaluated with respect to the PDS to determine whether it achieved the required targets, or perhaps exceeded expectations. Here the overall project itself would be reviewed; including lessons learnt which would then be applied in subsequent projects.

In essence, the design process is everywhere, as all mass produced objects we encounter have had some level of industrial design exposure - naturally, some more successfully than others. Considerate toy design could also include environmental issues, such as, the toy's packaging and End-of-Life scenario (i.e. recycling). Understanding and efficiently implementing the ‘Design Process' raises the likelihood of successful toy design by maximising profit margins, minimising wastage in terms of time and resources, and possibly most important, enhancing the consumers' play experience.