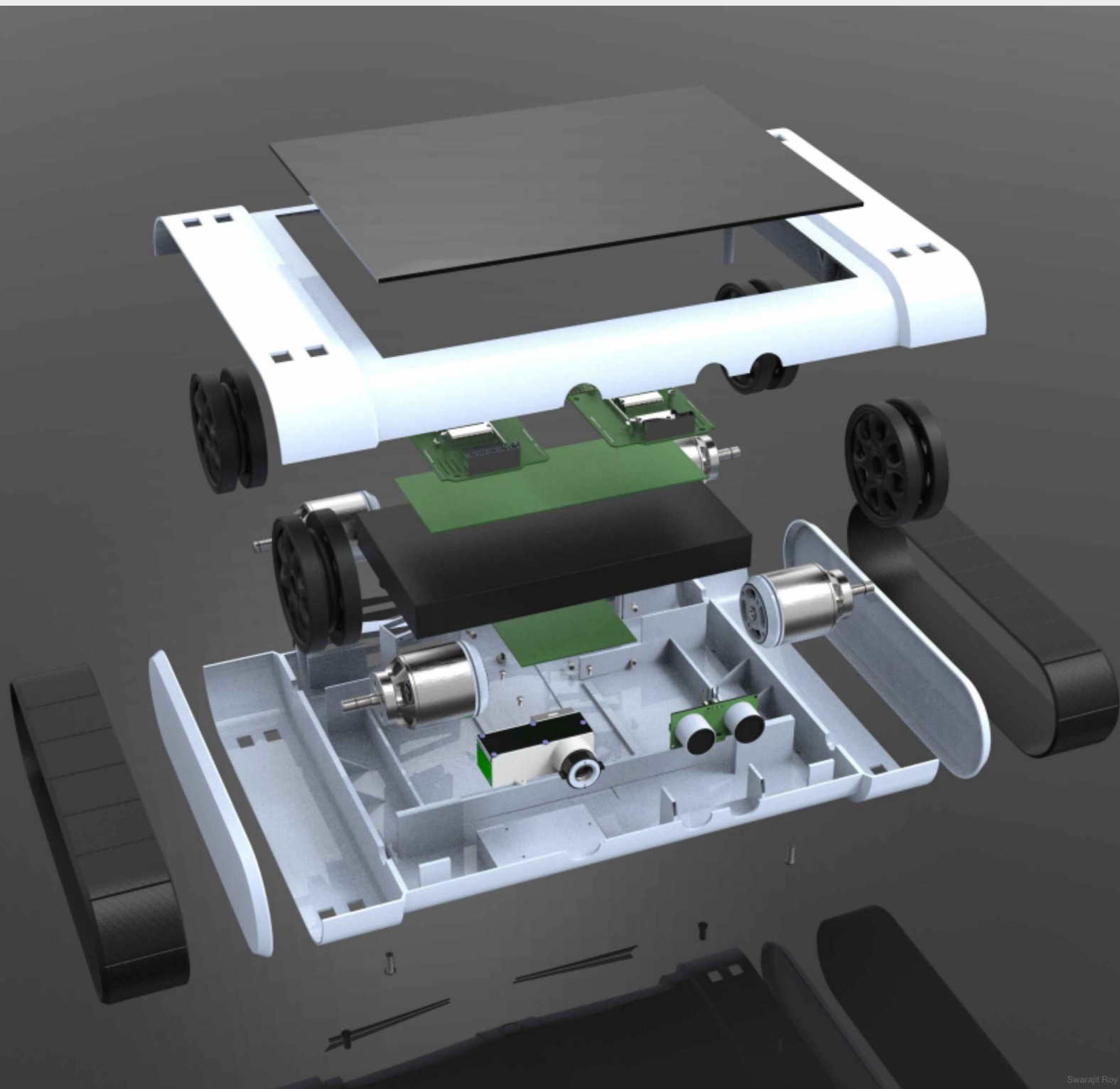


READY RECKONER OF INDUSTRIAL DESIGN TERMS



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- **Industrial Design:** (ID) is a profession based on satisfying human needs, problem identification, scientific, mechanical & electrical engineering principles where the aesthetics and usability of products are paramount for marketability and high-volume manufacturing production. ID strives to improve attractiveness, reduce component costs, assembly and manufactured packaging costs, seeking to satisfy customer needs and capture market share and profits. The role of an Industrial Design consulting firm or Industrial Designer is to be the voice of the end users. It is his or her job to know what the consumer wants to purchase and use. ID is used to create and execute 'accessible' human-centered universal product system, design solutions working with the sales & marketing, engineering, manufacturing & production team leaders.

The application of art and science to the design of physical product to be manufactured through techniques of mass production. Aesthetics, ergonomics, functionality, and usability design are accorded the highest importance.

ID encompasses product design, dealing with services and systems, interactions, experience and interfaces in the virtual world as opposed to the earlier view that it dealt with physical products alone.

Design: To envision, conceive or fashion in the mind; invent, to develop, to formulate a plan. To compose, layout, assemble. To seek and define artistic style and form – semantic meaning – perception of form, based on the intended purpose, giving pleasure to the eyes.

- **Innovation:** The act of developing something new; the introduction of something new; a significant step or 'leapfrog' quality. A market changing new idea, method or device; the successful exploitation of new ideas or technologies; change that

creates better performance.

- **Brainstorming:** Brainstorming is a group creativity technique designed to generate a multiple number of new ideas for the solution to a problem. Researchers propose that groups can double their creative output by using brainstorming. Brainstorming can be productive in sparking unique or previously thought of solutions, directions or associations. It relies on the saturation method of immersing the development team into the problem, becoming users, to generate real human insights into solving the problem.
- **Ideation:** Ideation is the creative exploration of new possibilities based on an idea. This is how designers find different concepts to choose from. Many times, ideation is a process of: think, sketch/prototype, evaluate, and repeat. When this is the case, the best concepts are usually found when more time is invested in the ideation process, because more ideas get the chance to build on one another.
- **Concept Development:** Concept Development is the process of generating ideas and problem solving leading to solutions. Development leads to building on previous ideas, merging ideas, and evolving ideas into more authentic new solutions.
- **Design Research:** Design research refers to the intentional and specific practice of using research techniques and practices such as field studies, literature and periodical research, focus analysis telephone and personal interviewing, video recording, to expand knowledge and understanding or insights into a particular subject, application or market
- **Product Development:** It is the art, science and engineering of industrial design and development of mass production manufactured products. A 'product', can mean a physical object, or services, or software. New Product Development is typically led by Industrial Designers and Engineers teaming with the sales, marketing, and engineering management and leaders to define the product development criteria goals, objectives and scheduling protocols.

- **Aesthetics:** Aesthetics is a artistic concept or perceived pleasure to the eye striving for simplicity, beauty, pure form.
- **Ergonomics:** Ergonomics is the science of creating products, spaces, and experiences to suit the human scale and natural expectations of users. Generally referred to as the study of Human Factors.
- **Semantics:** Product semantics or the 'meaning' of the product, is a design methodology used to evaluate product design, form or geometric styling based on prior references, intuitively communicate the purpose and user interface direction of the product.
- **Form Follows Function"** Defined by architect Louis Sullivan, the phrase "form follows function" is representative of the thought that the way a product functions is more important than and should dictate how the product's form should look.
- **Product Styling:** Product styling focuses on the experienced perception of the of product, device or machine design based on geometry, semantics, composition, materials, colors, texture and appearance of a product. The perception may be categorized into a historical or artistic style such as; art deco, streamlined, or with defined attributes such as; utilitarian, sleek, high tech, organic, cool
- **Animation**
A visualization comprised of moving images, usually created from 3D CAD, which allows a 'movie' of the design without needing physical samples. The quality of an animation can vary dramatically depending upon the application.
- **Anthropometrics**
Study of measurements of the human body. Used to inform ergonomics.
- **Assembly**
A collection of components that are related and have interconnections. Parts joined together form an assembly. Maybe physical, also within CAD.

- **Assembly Drawing:** An assembly drawings' principal purpose is to check all parts and assembly, part details. It is an important drawing check prior to tool release.
- **Backend**
The later phases of a design program, closer to manufacturing. Within some organizations some of these activities are identified as engineering.
- **Bill of materials/quantities (BOM/BOQ)**
A table containing a list of the components and the quantity of each required to produce an assemblyA summary list of component parts identifying part numbers, drawing numbers, design revision level, part name, manufacturing process, quantity of parts per assembly, sub-assemblies, material type and grade, material colors. is a list that contains quantities of every component and raw material required to create a specified assembly. It serves as the first step and foundation for any industrial design project. . A costed BOM includes pricing information. An indented BOM indicates how different components and sub-assemblies relate to one another and the order in which they are assembled.
- **Brief**
Instructions and requests provided to design team prior to the commencement of a project. The format can vary and may range from informal & verbal, to a comprehensive document.
- **Casting:** A manufacturing process where molten metal is poured into a mold. Casting pertains to anything from precision machinery and electrical hardware to decorative hardware and electric motors.
- **CAD**
Computer-aided design software used to assist with design and documentation.
- **CMF**
Colour, material, finish.
- **CNC**

Computer-numerically-controlled. Refers to various computer controlled machinery used to produce prototypes, tools and components.

- **Color Study:** A color study is an visual tool exploring and selecting a variety of colors or schemes to be applied to a product or product family. Whether or not a color combination is successful is assessed in the visual balance and harmony of the final composition. Use of successful color combination begins with the understanding and investigation of color relationships.
- **Commercialization**
Commercialization is the process or cycle of introducing a new product or production method into the market. Many technologies begin in the laboratory and are not practical for commercial use in their infancy.
- **Component**
Part. Single, discrete element within an assembly.
- **Concept design**
Early-stage design, not all aspects are resolved, however overall intent or direction should be apparent.
- **Contract Manufacturer (CM)**
The external company that produces parts or products to order.
- **Control Drawing**
2D representation of a design, used to assist production. Often used in conjunction with 3D CAD data, a control drawing can provide information such as dimensions, tolerances and notes that may not be readily obtained from 3D data alone. Also called 2D drawing, engineering drawing or technical drawings. Similar to architectural 'plan'
- **Design Engineering:** (Eng) The application of scientific and mathematical principles as applied to the design, manufacture, and operation of efficient and economical structures, products, machines, procedures, or methods, processes & systems.
'Engineering' encompasses a wide spectrum of sub disciplines including; design, systems, mechanical, electrical, electronic, biomechanical, biomedical, chemical, materials, polymer, plastic,

metallurgical, human factors, user interface, ergonomics, manufacturing, tooling, production automation, acoustic, optical, hydraulic, pneumatic, nano, etc.

- **Design for Manufacturing:** When designing a product for manufacture, it is critical to develop the design direction sufficiently enough to ensure that your design intent is developed and communicated correctly.
- **Design Thinking**
An approach to problem-solving based upon the methodology used by designers, but (usually) applied to other disciplines, such as business and education.
- **Detail design**
Determining and accurately documenting all the aspects of the design, largely related to the performance and manufacture of the part. Depending upon organizational structure this work may be carried out by engineers.
- **Design Patent:** A design patent is a form of legal protection granted to the ornamental design of a functional item. Design patents are a type of industrial design right. Ornamental designs of jewelry, furniture, beverage containers and computer icons are examples of objects that are covered by design patents. It is valid for a 14 term limit or other durations in different countries. Design patents can be invalidated if the design has practical utility, (i.e. the shape of a simple gear).
- **Die:** A tool (made from a metal block) used to cut or shape manufacturing material.
- **Dimension**
Distance or measurement.
- **Drawing**
Usually refers to a precise black and white 'line' image often generated in CAD within a recognized format, used for communicating technical aspects of a design. See also control drawing.
- **Eco-design**

Design with significant consideration to the environment also called green design.

- **E.E.**
Electrical (or electronic) engineering.
- **Ergonomics**
Application of principles that consider the effective, safe and comfortable use of a design by humans. An example would be the design of a handle based on anthropometric data and with subsequent usability testing.
- **Exploded view**
Visual representation of an assembly, showing some or all of the components separated to illustrate the parts and their relationships to one another.
- **FEA**
Finite-element analysis: a computer-based engineering tool for assessing structural aspects of a mechanical design.
- **Feasibility Study**
A feasibility study is an evaluation and analysis of the potential of a proposed project, based on extensive investigation and research to support the process of decision making.
- **Finish**
Surface treatment of component. Maybe functional and/or cosmetic, examples include polishing, painting and anodizing.
- **Form**
The three-dimensional equivalent of Shape.
- **Form study**
Type of prototype used to assess the external form of the design, usually full size, often in a single colour or with minimal cosmetic finishes. The 'clays' used in automotive design are an example.
- **Front end**
Preliminary stages of the design process, typically where overall configuration and desired appearance are established.
- **General Assembly (GA)**
A drawing or CAD model illustrating all the components of a finished product and their relationship to one another. May

incorporate a bill of materials (BOM).

- **Human Factors**

Also called ergonomics. The scientific discipline of studying interactions between humans and external systems, including human-computer interaction. When applied to design, the study of human factors seeks to optimize both human well-being and system performance. Human factors relates to consideration of human users in the design of a product and environment. Some people make a distinction that ergonomics more specifically relates to the physical association between people and products.

- **ID**

Industrial design; also internal diameter (e.g. the distance across the hole in a nut).

- **Ideation**

Idea generation, typically early in a project and in a relatively loose/abstract form. Brainstorming is an ideation technique.

- **Illustrator**

Computer software often used for 2D design work. Also used extensively by graphic designers.

- **Intellectual property (IP)**

Characteristics of a design the owner may wish to protect from unauthorized use. Strategies include trade secrets and formal, legal IP protection such as utility patents & design registration.

- **Interaction design (IxD)**

The design of granular interactions between people and products. Interaction design focuses on how users and technology communicate with each other in order to anticipate how someone might interact with the system in order to invent engaging interfaces with delightful and predictable behaviors

- **Interface**

Elements of a product via which a user receives and inputs information. On a smart phone this may be as simple as a touchscreen and a few buttons. On a motorcycle it is far more involving, with both hands and both feet operating controls,

along with visual display of information.

- **IP**
Intellectual property.
- **Materials and Materials Science:** (See materials engineering)
study of engineering materials properties and their mechanical behavior in general (such as stress, deformation, strain and stress-strain relations), mass (weight), volume, texture, color, touch (temperature), hardness (resisting shape change), strength, considered in terms of yield strength, compressive strength, tensile strength, and shear strength
- **Model (including CAD)**
Representation of a design. May refer to a physical item or a representation within computer software e.g. CAD model
- **Mould (or mold in American-English)**
Typically made of metal. A form used to create similarly-shaped plastic or metal forms, typically through mass production. Molds are usually made of metal and can work via injection molding or casting.
- **Mood board**
Collection of images gathered at the outset of a project to help clarify and communicate aspects of the aesthetic of the yet to be designed product. Interchangeable with theme board.
- **Native**
The file type used by a given software program during normal use (creating & saving files) Example '.docx' for MS Word. Native files are often not used to transfer design data, to offer tamper resistance, revision control and do not have the interdependence that is common with CAD data.
- **New Product Introduction (NPI)**
New product introduction is the complete process of bringing a new product to market.
- **Original Design Manufacturer (ODM)**
Company that designs and produces goods to be sold by other brands. The design may be initiated by the ODM or may be to

meet a specification provided by a brand.

- **Original Equipment Manufacturer (OEM)**

Contract manufacturer that produces complete, finished products. Manufactures products for other brands, (to the design and specification of those brands) which the brand then distributes. Common business model, with many brands outsourcing some or all of their production (to OEMs).

- **Off-Tool Sample (OTS)**

Initial sample created using production tooling. Used to check design and 'tune' tooling prior to making production quantities. Common to have at least 2 generations of OTS (OTS1, OTS2, etc.) as first OTS will often not have cosmetic finishes applied to tool. A sample used to make sure that the manufacturing process is creating desired results, the assembly works as it should, and the manufacturing process is free of problems. An OTS is used to check whether production tooling is tuned correctly and fix any flaws in the design prior to making production quantities. There are often at least two OTS versions created during a project.

- **Part:** Similar to a component, a part is exactly what you'd imagine – a single piece of an assembly. But a part can be a digital or physical representation of a piece. A digital example would be a part file in software such as SOLIDWORKS. A single element. Some products, such as a paperclip, consist of a single part. Often a product is an assembly of multiple parts.

- **Organic**

Describes form. Soft, irregular shapes as occur in nature.

- **PCB**

A printed circuit board (PCB) mechanically supports and electrically connects electronic components using conductive tracks, pads and other features etched from copper sheets laminated onto a non-conductive substrate. PCBs can be single sided (one copper layer), double sided (two copper layers) or multi-layer.

- **Percentile (as in '5th percentile')**

Term used within ergonomics to indicate a portion of the population with regard to a particular trait. Using height for example, of a sample population 50th percentile is the midpoint, 5th percentile would be the shortest 5% of people within the sample group, 95th percentile the tallest 5%.

- **Phase**

A period within a design program that is identified as having a particular focus of activity and/or outcome.

A project may have a user-research phase, a concept phase, etc. This term is commonly used in the US, the word 'stage' is largely interchangeable.

- **Pilot Run**

An initial small production run produced as a check prior to commencing full-scale production. The pilot run provides an opportunity to further refine assembly process or identify any remaining issues with the design or manufactured parts, thereby saving time & \$ in the transition to full production.

- **Pro/E**

Brand of CAD software, subsequently named 'Wildfire', and now 'Creo' (the family of products still widely referred to as Pro/E). Well-established platform for mechanical CAD with large user base.

- **Program**

A body of design work for a single organisation, typically involving multiple projects. Alternatively, a piece of computer software, increasingly called apps or applications.

- **Project**

A specific, defined design task. In this context often a product. May also be more narrowly defined, such as a piece of stand-alone research or a conceptual exploration used to gather knowledge without necessarily being intended for production.

- **Proposal**

Stated approach to a design project. This is a response to a brief.

- **Prototype**

A model made during the design process to assess aspects of the design prior to manufacture. Usually physical, but may take other forms, including on-screen or even Post-it notes. A prototype is an original type, form, or instance of some thing serving as a typical example, basis, epitome, or standard for other things of the same category.

- **Quality Assurance**

Quality assurance (QA) attempts to improve and stabilize production (and associated processes) to avoid, or at least minimize, issues which lead to a product's defects.

- **Quality Control**

Quality control (QC) is a process in which the quality of all factors involved in production is reviewed. It emphasizes testing of products to uncover defects and reporting to those who make the decision to allow or deny product release.

- **Quality Management Systems**

A quality management system (QMS) is a collection of business processes focused on achieving quality objectives to meet customer requirements. It is expressed as the organizational structure, policies, procedures, processes and resources needed to achieve the desired standard of quality.

- **Rapid Prototyping (RP)**

Various technologies for producing a prototype directly from 3D CAD data which produce a result far more quickly (typically within a couple of days) than traditional model-making.

- **Rendering**

An image of a proposed design which may be generated by various means including marker pens on paper, 2D software, or 3D CAD visualisation software. The detail provided in a rendering can range from quite abstract and suggestive to photorealistic. In layman's terms, an 'artist's impression'. A product rendering is a 2D visual illustration of a product typically drawn in 2 or 3 point perspective using light, shadow and perspective drawing technique to create the perception of a 3D or photograph of the object.

- **Research**

May be undertaken at different times in a project, for different reasons. Common types are user research, competitor research, and research into materials and process. It may be broken into different phases, Primary, Secondary and Tertiary, where primary is face to face, on the ground research, secondary is Based on what others have done and tertiary based on books and other resources including the net.

- **Rhinoceros (Rhino)**

Brand of CAD software, tends to be used for free-form modelling and visualisation.

- **Sample**

Item demonstrating one or more characteristics of a design. Can differ from a prototype in that a sample may represent a material or process, without necessarily being in the form of the design in progress.

- **Scale**

A ratio of size to allow documentation of designs that are too large or small to be documented effectively at true size. For example a chair may be drawn at 1:5 scale (one fifth of full size). A scale may also refer to a ruler with graduations to easily measure scaled drawings, but this is more common in architecture.

- **Schematic**

A structural or procedural diagram, especially of an electrical or mechanical system.

- **Sketch**

An image that is quick to generate and does not contain complete detail. Also used as an adjective, e.g. sketch model.

- **SolidWorks**

Brand of CAD software. Widely used platform for mechanical CAD.

- **Stage**

See phase.

- **STEP file**

Standard for the Exchange of Product Data. Computer file format for cross-platform transfer of 3D CAD data.

- **Styling Freeze**

Point in time after which no further changes to the appearance are intended. This may be implicit and not formally identified.

- **Sub assembly**

An assembly that forms part of a larger assembly. For example the display of a smartphone.

- **Supplier**

A company that provides goods or services relating to the item being designed, typically prototype or production components.

- **System Architect**

System(s) architects define the architecture of a complex system in order to fulfill the technical requirements. Such design includes a breakdown of the system in components, how these components interact together, and generally what technologies they employ.

- **System Architecture Plan**

It is the conceptual model that defines the structure, behavior, and more views of a system.[1] An architecture description is a formal description and representation of a system, organized in a way that supports reasoning about the structures and behaviors of the system.

- **System Design**

A branch of Design that studies the relationships and interdependencies of complex systems (for instance, transportation in a city) so as to design a product or system of products that satisfy the greatest number of parameters.

- **Theme board**

See mood board.

- **Thermal Management**

Heat generated by electronic devices and circuitry must be dissipated to improve reliability and prevent premature failure.[1] Techniques for heat dissipation can include heatsinks and fans for air cooling, and other forms of computer cooling such as liquid

cooling.

- **Thermal Simulation**

Thermal simulation calculates the theoretical temperature and heat transfer within and between components in your design and its environment. This is an important consideration of design, as many products and material have temperature dependent properties. Product safety is also a consideration—if a product or component gets too hot, you may have to design a guard over it.

- **Thumbnail Sketch:** Within the field of product design, thumbnail sketching represents an efficient way to quickly communicate product ideas and simple concepts using small line drawn 3D perspective and orthographic drawings quickly and clearly.

- **Tolerance**

Dimensional variation that can occur between nominally 'identical' components during manufacture. Tolerance may refer to a dimensioning approach to define this, or the variation observed in parts.

- **Tool, tooling**

Catch-all phrase for dedicated elements of manufacturing equipment used for the mass production of components. Tooling is a general term which includes molds used for injection-molded plastic parts and dies used for cast metal parts. Investment in tooling often represents a major capital expense and time component of new product development programs.

- **User**

The person or people who will use the design. A product may have multiple users, for example 'users' of a piece of medical equipment may include the patient, the doctor, and technical staff.

- **User interface design (UI)** or user interface engineering is the design of user interfaces for machines and software, such as computers, home appliances, mobile devices, and other electronic devices, with the focus on maximizing usability and the user experience. The goal of user interface design is to make the

user's interaction as simple and efficient as possible, in terms of accomplishing user goals (user-centered design).

- **User experience design (UX)** is the process of manipulating user behavior through usability, usefulness, and desirability provided in the interaction with a product.

- **Vendor**

A company that provides goods or services relating to the item being designed, typically prototype or production components. For design the term is largely interchangeable with 'supplier' (though this may be debated by a procurement specialist!). Vendor is more commonly used in the US.

Terms Related to 2D and 3D Renderings

- A **Control Drawing**, also called an engineering drawing or technical drawing, is a collection of 2D renderings of a finished assembly. It includes information like measurements, tolerances, and other notes that cannot be obtained from a 3D rendering alone.
- **3D Printing:** These are processes for making 3D objects, usually done by adding thin slices of material onto one another until a finished object is created. Common 3D printing processes include FDM (fused deposition modeling), SLA (stereolithography), SLS (selective laser sintering), and more.
- If you're familiar with other sub-disciplines of design, file types can get confusing. With respect to 3D Printing, you should be aware of:
- **3D File Types (Common):** 3DS, ASM, DAE, FBX, IGES, OBJ, PLY, PRT, STEP, STL, WRL, X_T.

Terms used in UI/UX Design

- **Adaptive web design**

Fixed-width designs for multiple viewport sizes. The system detects what size screen they're using and serves a website designed specifically for that viewing experience.

- **Affinity diagramming**

A way to organize ideas into groups based on their relationships. Often used to review and analyze pain points and delights along a user journey.

- **Agile software development**

A development method that uses iteration and feedback to launch and refine products. Two to four week sprints are generally conducted repeatedly throughout the year, following a proscribed method of planning, coding, and testing for continuous product evolution and feature integration.

- **Analysis stage**

The stage of the product design process where insights are drawn from data collecting during the earlier Research stage.

- **Analytics**

A broad term that encompasses a variety of tools that collect quantitative information about the use of a website or application.

- **Beta launch**

The limited launch of a software product with the goal of finding bugs before final launch.

- **Branding**

The process of creating and marketing a consistent idea or image of a product or company.

- **Card sorting**

A technique used to understand how users sort information into categories and hierarchies.

- **Content Management System (CMS)**

Software like WordPress that provides a user-friendly interface for publishing, editing and maintaining content. See also: Content management

- **Collaborative design**

Working closely with users, stakeholders and the project team to gain buy-in and develop user-centered products that meet stakeholder goals.

- **Competitor analysis**

Research around competitor websites and apps to understand the competitive landscape and identify business and technology opportunities.

- **Comparative analysis**

Performing a feature by features comparison of comparable applications or businesses to understand trends and user expectations.

- **Content management**

Processes and technology for collecting and publishing information.

- **Contextual enquiry**

Conducting research with users in situ in order to understand how they interact with applications or systems.

- **Content audit**

Reviewing and cataloguing a client's existing content usually in order to make changes to the content strategy or information architecture.

- **Customer Journey Map**

A diagram of your users' interactions with your product including their emotions as they interact with it or complete tasks. See

also: Experience Map

- **Design ethnography**

Observational research of customers/users in-situ using your product or interacting with your company. The ethnography focuses on watching what the user actually does in a real world situation rather than in a lab or answering questions.

- **Design sprint**

In Agile development methodologies, the design sprint comes before the development sprint. At the end of the design sprint, wireframes and UIs are handed off to the engineers for their development sprint.

- **Diary study**

Asking users to record their experiences and thoughts about a product or task in a journal over a set period of time.

- **Experience Map**

A diagram of your users' interactions with your product including their emotions as they interact with it or complete tasks. See also: Customer Journey Map

- **Focus groups**

User interviews conducted with small groups of people (usually 5-10). Focus groups are useful when understanding how teams of people work together, or as a way to speed the interview process by speaking with many users at once.

- **Guerrilla usability testing**

Quick, low cost testing with any available users in informal situations (friends, colleagues, people on the street, in a coffee shop). It enables real user feedback without a large investment in time or money. A response to traditional, formalized lab testing, the guerrilla testing gets research results to designers quickly.

- **Happy path**

The frequent and critical activities that users will perform on your site. They are complete activities, not single tasks, and will

probably require several pages to execute. Defining the happy paths for your site means that you'll be able to identify and eliminate any usability obstacles on the key user journeys.

- **Heuristic review**

Evaluating a website or app and documenting usability flaws and other areas for improvement based on a check-list of usability best practices.

- **Human Computer Interaction (HCI)**

HCI involves the study, planning, and design of the interaction between people (users) and computers.

- **High-fidelity prototype**

A prototype which is quite close to the final product, with lots of detail and a good indication of the final proposed aesthetics and functionality.

- **Information architecture (IA)**

The art and science of organizing and labeling websites, intranets, online communities and software to support usability and findability;

- **Information scent**

An important concept in wayfinding, referring to the extent to which users can predict what they will find if they pursue a certain path through a website. As animals rely on scents to indicate the chances of finding food, humans rely on various cues in the information environment to achieve their goals. See: wayfinding.

- **Interaction design (IxD)**

The design of granular interactions between people and products. Interaction design focuses on how users and technology communicate with each other in order to anticipate how someone might interact with the system in order to invent engaging interfaces with delightful and predictable behaviors

- **Interaction model**

A set of design patterns that are consistent throughout an application. (e.g. If a button works one way on the home screen, it should work the same way every place in the application.) See: pattern library

- **Iterate**

The act of repeating the design process in order to refine and improve the product. Each repetition of the process is also called an iteration.

- **Iterative design**

A methodology based on a cyclic process of prototyping, testing, analyzing, and refining a product or process. Based on the results of testing the most recent iteration of a design, changes are made.

- **Lean UX**

Inspired by Lean and Agile development theories, Lean UX speeds up the UX process by putting less emphasis on deliverables and greater focus on the actual experience being designed.

- **Low-fidelity prototype**

A quick and easy rendering of the design concept into tangible and testable artifacts, giving an indication of the direction that the product is heading. Often used for usability testing during the iterative design process.

- **Mood Board**

A collage, either physical or digital, which is intended to communicate the visual and emotional style of a design or brand.

- **Mockups**

A rough model of a product that shows how the finished version should look. Generally used in the visual design stage of the product design process, mockups are not functional like prototypes.

- **Needfinding**

Needfinding is the art of talking to people and discovering their needs—both those they might explicitly state, and those hidden beneath the surface. It is only in truly understanding people and workflow that we can gain meaningful insights to inspire and inform a final, impactful design.

- **Paper prototype**

A rough, often hand-sketched or cut-out to simulate a user interface. Used in a usability test to gather feedback, participants point to locations on the page that they would click, and screens are manually presented to the user based on the interactions they indicate.

- **Personas**

A composite identity constructed based on a group of users with similar goals and desires. Used to ensure differing groups or goals are represented in the UI.

- **Production stage**

The stage at which the product is being engineered or built. The role of the product designer shifts from creating and validating to collaborating with developers to guide and champion the vision and ensure fealty to the designs.

- **Project kick-off**

The formally recognized start of a project, usually a meeting in which all the product team gathers to learn about the goal of the project.

- **Progressive reveal**

An design technique that reveals only the interactions or steps the user requires at that moment in the user flow. Often found in long online forms, the goal is to maintain the user's focus by reducing the number of input boxes on the screen at one time.

- **Prototype**

A rough working model of a product that shows how the finished version should function. Prototypes can be as simple as a paper mockup to a beta version that is being tested with live users.

- **Questionnaires**

A series of questions and other prompts used to gather information.

- **Research stage**

Also known as the discovery stage during which time the product team is researching competitors and comparators, conducting design ethnographies, interviews, surveys, creating empathy maps and personas and testing low-fidelity prototypes with user. In the Lean and Agile methodologies, the research stage may be a recurring part of the product cycle and not a separate stage.

- **Responsive design**

A design and development technique that ensures the website or application responds automatically to screen size, hardware and orientation. The technique consists of flexible grids and layouts, resizable images and CSS media queries.

- **Scenario** A story describing how a user or persona will use your product in-situ. It's a method for ensuring that designs fit the user needs on site in a real world setting. See: Use case

- **Service design**

The design of real world spaces and interactions. Planning and organizing people, spaces and infrastructures like coffee shops, hospitals, and auditoriums. Service design includes signage, workflow, interior design and other material and interaction components of a service. The goal is to improve the quality and interactions between the service provider and its customers.

- **Sitemap**

A diagram of all the pages and their interconnection on a website.

- **Speed dating**

A methodology for quickly testing the usability of a product with a roomful of people.

- **Strategy stage**

The planning stage with goals and milestones are decided for a project or sprint.

- **Storyboard**

A visual sequence of events used to capture a user's interactions and emotions while using a product. Similar to a User Journey but using a filmmaking metaphor.

- **Survey**

A form used to gather feedback from users. Often used when a large number of users need to be contacted in a short period of time.

- **Stakeholder Interviews**

Conversations with the key participants in the organization who have a stake in the outcome of the product; e.g. business owners, managers, marketing directors, sales persons, etc. To ensure that the product team understands the goals and desired outcomes of all stakeholders.

- **Task list**

The steps a user must take in order to complete a task and achieve their goal with the product. The task list is then used to create the user flow diagram.

- **Usability**

Is the ease of use, learnability and discoverability of a product.

- **Usability engineering**

The formal study of usability.

- **Use case**

A story describing how a user or persona will use your product in-situ. It's a method for ensuring that designs fit the user needs on site in a real world setting. See: Scenario

- **User-centered design (UCD)**

A design process that keeps the needs and desires of the user

first.

- **User feedback loop**

Testing ideas and designs with users in order to get their feedback, then using those responses to validate or refine the design. Then testing again until all user problems and pain points have been resolved.

- **User flow diagram**

A diagram of the steps a user must take in order to complete a task and achieve their goal with the product.

- **User journey**

The process a user takes to reach their goal, including tasks, emotions, and pain points.

- **User interview**

Formal or informal discussions with users in order to understand their emotions, desires, goals and frustrations in the use of the product. See: Focus groups

- **User research**

Researching goals, tasks, business competition and other areas to understand user behaviors, needs, and motivations.

- **Usability test**

Stepping a user through a set of tasks using the product in order to understand where there is confusion, frustration or blocks.

- **Validate**

Testing a design with users to ensure that assumptions and design directions were correct.

- **Visual design**

Also called graphic design or UI design. Concerned with colors, typography, style and branding of the product.

- **Wayfinding**

The ways in which people orient themselves in physical and digital space and navigate from place to place. A component of information architecture.

- **Waterfall development**

A strictly sequential product development process where progress flows in one direction through design > development > QA > launch > maintenance.

- **Wireframe**

A blueprint for the layout and functions of a website or application. The wireframe is delivered to engineers who build the application based on these specifications.

- **Workflow diagram**

A diagram of the steps a user must take in order to complete a task and achieve their goal with the product. See: User flow

AWARDS

- **Red Dot Award:** An international award given to businesses that have distinguished themselves through industrial design. It is awarded for excellence in product design, communication design, and other design concepts.
- **International Design Excellence (IDEA) Award:** An industrial design award given to brands that help develop public awareness and passion for industrial design. The award is presented by the Industrial Design Society of America (IDSA).
- **Good Design Award:** One of the longest-running and most prestigious awards given in industrial design. It's awarded to companies that push the envelope and raise the bar in the world of design.
- **iF Product Design Award:** An international award given for innovation and excellence in product design.
- **LEXUS:** First launched in 2013, the LEXUS DESIGN AWARD is an international design competition that targets up-and-coming creators from around the world. The award seeks to foster the growth of ideas that contribute to society by supporting designers and creators whose works can help to shape a better future.
- **India Design Mark:** India Design Mark is a design standard, a symbol, which recognizes good design. India Design Mark

