### **ASSEMBLY Show**

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Design Firms – The Who, What, Why & How October 24, 2024 Rosemont, Illinois



# **Overview of Presentation**

- Wide variety of design firms out there in the US and internationally
- Varied in service offerings, expertise, experience, size, and capabilities
- Presentation to provide an overview of:
  - Who the various types of design firms are
  - What design firms do
  - Why companies hire design firms
  - How they offer value to customers

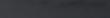




# The Who - Product Design Firms

#### Broad variety of product design firms

- New product design and development
- Industrial design
- Mechanical engineering design
- Electrical hardware, firmware, and/or software
- Product innovation
- UI/UX
- Human factors and ergonomic experts
- Machine and/or equipment design
- Medical product and equipment design
- Manufacturing firms (i.e. contract manufacturers with design teams)
- Design research
- Digital product and service design





### Industrial design firms

- Conceptual design
- Aesthetic design and form development
- Human factors and ergonomics
- Product line planning
- Visual brand language development
- Design research (typically qualitative)
- Surface modeling
- Early-stage prototype fabrication
- Concept sketching and rendering
- Digital 3D animations
- UX/UI design
- Broad industry and product experience
- Work on project basis or do all ID work for a client



### Mechanical engineering design firms

- Mechanical engineering design
- Design for manufacturing and assembly
- Conceptual design (ideation)
- Feasibility analysis
- Proof-of-concept design and prototyping
- 3D CAD design
- Prototype development (all stages of project)
- Engineering testing
- Early-stage R&D and exploratory development work
- Value engineering
- Problem solving
- Engineering analysis



### Electrical engineering design firms

- Embedded systems design (control product operations)
- Electrical system architecture design
- Hardware (HW) design (i.e. PC boards & all electrical HW in a product)
- Software (SW) and firmware (FW) development
- Integrate various components (displays, sensors, motors, etc.)
- Power management (AC/DC)
- Internet of Things
- Connectivity WiFi / BLE / Cellular
- Electrical certifications (UL / CSA / CE / EMC / FCC)
- Communications systems
- Application development
  - Phone apps (UI/UX)
  - Windows apps (GUI/Comms)



New product design & development firms

- Multiple core competencies, typically including:
  - Industrial design
  - Mechanical engineering
  - Prototype shop
- Several have additional expertise areas, such as:
  - Electrical engineering HW / FW / SW
  - Market research
  - UI/UX
- Can handle turnkey development of new products
  - Research, white space or concept to production
- Cross-functional teams add value



## The Why – Why Companies Hire Design Firms

- 1. Need to add resources such as manpower quickly
- 2. Complete programs faster
  - Internal staff members are often juggling multiple projects
  - Key projects frequently run behind schedule
- 3. Required expertise is not in-house
- 4. Fresh eyes
  - Different perspectives
  - Creativity
  - Innovation
- 5. Learn how other teams get things done



# The How – How Design Firms Structure Contracts

- 1. Fixed price
  - Typically for services with less risk to budget
  - Industrial design, for example
- 2. Time & materials (T&M)
  - Bill by the hour
  - Client covers out-of-pocket expenses at cost or with a markup
  - Projects or phases may start with budgetary estimates
- 3. Bill hourly with budgetary estimates
  - Similar to T&M with budgetary guardrails
  - Work beyond estimates approved prior to completion
  - Amendments (change orders) documented for scope and budget changes
  - Some clients allow 10% over budget without approval
- 4. Royalties and IP Ownership
- Some design firms require level of IP ownership or royalties (negotiated with clients)



# The How – How Design Firms are Valued by Clients

#### 1. Speed

- Get priority projects to market faster
- Clients can capitalize on emerging opportunities
- Drive profits, growth, and/or market share
- 2. Expertise
  - Anything and everything is out there
    - Al, connectivity, UI/UX, ergonomics, emerging technologies, analysis, etc.
- 3. Innovation
  - Some firms occasionally need fresh eyes and inspiration from outside sources
- 4. Ramp manpower up and down fast
  - Typically with rapid learning curves



### Design Firms - The Who, What, Why & How

Q&A

Thanks for participating!

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