Good designers get things done. Integral design projects as a driver for innovation.

> Introduction
> The nature of product design
> Integral product design
> Examples
> Discussion integral x-design academic programmes.
Introduction

- Creativity
- Pro-activity

New Product Development
- New Service Development
- New Process Development
- New Business Development
- Organizational Development

Competitiveness

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The development of products that embody new knowledge or new ideas.
The nature of product design

> Creation
> Prototyping / testing / learning
> Risk management
> Material / resource management (economical and ecological)
> Information / quotation / validation
> Selection / specification / detail
> Integration
Integral product design

> Integral

Users / consumers
(Desirability)

Technology
(Feasibility)

Enterprise
(Profitability, Competiveness)
> Quality
Integral product design

> Value

Unique qualities / features
Closer to user
Economic
Functional
Emotional
Social
4 principles of Integral Product Design

> Integral -> develop different aspects simultaneously, in a cross-functional setting.

> Life cycle approach -> discover, attack and solve future challenges as early as possible.

> Users centered -> design for all the users and stakeholders in the product’s “eco-system”.

> Quality / value process -> plan, monitor, validate.
Innovation – what often goes wrong...

> Innovation is mixed up with the development radically new technologies ("this is not for us...")

> Ideas are not shared or developed within the enterprise.

> The management is positive about innovation, but does not provide the necessary framework.

> Innovation is limited to one of the enterprise’s departments (often R&D) or a single employee.

> Disagree about the direction to take; ideas and new knowledge exist, but are not aligned.
Examples

Scoping

- Quick-scan of the enterprise
- Collect, generate and organize ideas for new and improved products
- Define product development goals

Analysis

- Product life (cycle) analysis
- User and client research
- State of the art and benchmarking studies
- Need-specification (users, clients, enterprise)

Conceptual design

- Specification of hardware references, functions and features
- Conceptual design encasings
- Hardware (PCB) architecture
- Specification of the marketing concept
- Cost-estimation

Road-mapping

- R&D planning
- Industrial design planning
- Prototype planning
- Marketing planning
- Financial planning
Itinerario ADÑ

- Programme to foster design and innovation in SMEs in Spain
- Client: Spanish Agency for Design and Innovation (DDI, now part of ENISA)
- 1,3 mln.€ budget, 46 SMEs participated (2009 – 2011).
95% of the participants considered the ADÑ programme useful or very useful for their company

> Working in a cross-functional team for ideation and decision making

> Systematic and practical methodology

> User centered approach

> Some companies speak in terms of “before and after”
IDP project (Delft University of Technology)

- Teams of 4-6, 4th grade students Industrial Design Engineering
- For (in cooperation with) SMEs and multinationals
- Goal: design of a product that is new for the company
- 5-8 months, tutoring every 1 or 2 weeks, minimal 4 meetings with the company
- The use of methodology is compulsory
- The programme is running for about 30 (!) years now.
Examples

- Kick-off meeting
- Internal- and external analysis
- “Wild” new product ideas
- Search fields
- Briefing
- Design ideas
- Target groups + problems to solve
- Concept
- Form giving
- Technical solutions
- Cost estimation
- Product launch plan
- Marketing plan
- Production plan
Integral product design projects are a good way for companies to begin innovating

- Fast, tangible intermediate results
- Practical but systematic
- Cross-functional (improves communication)
- User / customer orientation

Product design projects often make the company to make the necessary organization changes in a natural way.
Discussion integral x-design programmes

Users / consumers

Technology

Enterprise
Discussion integral x-design programmes

“Mass- or batch-wise manufacturing”

“Products for people”

“Consumer- and small professional products”

Users / consumers
Technology
Enterprise
Industrial Design versus Mechanical Engineering (DUT)

- + Integral design projects (20%)
- + Customer research / marketing
- + User interaction and ergonomics
- + Form giving (aesthetics)
- + Creativity and innovation management
- - Engineering courses (focus on mass-production)
Discussion

> *Integral Industrial Design*
> Integral Informatics Design?
> Integral Electronic Design?
> Integral Biomedical Design?
> Integral Materials Design?
> Integral Telecom Design?
> Integral Energy Design?
> Integral Robot Design?
> ...
Thank you for your attention!

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