

# Innovation – Does it have structure?

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## Definitions of innovation

Oxford dictionary : *“Make changes in something established, especially by introducing new methods, ideas, or products”*

- Turing an idea into a solution that adds value from a customer’s perspective
- The application of ideas that are novel and useful
- Innovation is about staying relevant
- An innovation is a feasible relevant offering.
- Introduction of new products and services that add value to the organization
- Not an easy answer
- I define the innovation process as a great idea, executed brilliantly, and communicated in a way that is both intuitive and fully celebrates the magic of the initial concept.
- An innovation is a feasible relevant offering such as a product, service, process or experience with a viable business model that is perceived as new and is adopted by customers.

- The fundamental way the company brings constant value to their customers business or life and consequently their shareholders and stakeholders.
- Work that delivers new goodness to new customers in new markets, and does it in a way that radically improves the profitability equation.
- Creativity is thinking of something new. Innovation is the implementation of something new.
- The implementation of creative ideas in order to generate value, usually through increased revenues, reduced costs or both.
- I try not to define “innovation” as we should tone down our use of the word and term.
- Anything that is new, useful, and surprising.
- New, organic value creation by applying creativity, in-depth relationships with consumers and customers, and new thinking.
- Put simply, it is the future delivered.

<https://www.ideatovalue.com/inno/nickskillicorn/2016/03/innovation-15-experts-share-innovation-definition/>



60%

Having an idea



60%

Executing the idea



40%

Addresses a real challenge



40%

Add value to the company



40%

Add value to customer



27%

Different perspective / thinking



13%

Moving forward



13%

Definition not important



7%

Addressing new market

# The ultimate definition of innovation

Executing an idea which addresses a  
specific challenge and achieves value for  
both the company and customer

# The Innovation Process

FUNCTIONAL  
DECOMPOSITION

CONCEPT  
GENERATION

CONCEPT  
EVALUATION

What is a product / process : one that carries out a **function – the design objective**

### FUNCTION

- A TASK WHICH ACTS ON MATERIAL , ENERGY OR INFORMATION
- ‘WHAT’ IS TO BE DONE AND NOT ‘HOW’
- DEFINED BY AN INPUT/OUTPUT RELATION
- OVERALL FUNCTION IS THE DESIGN OBJECTIVE

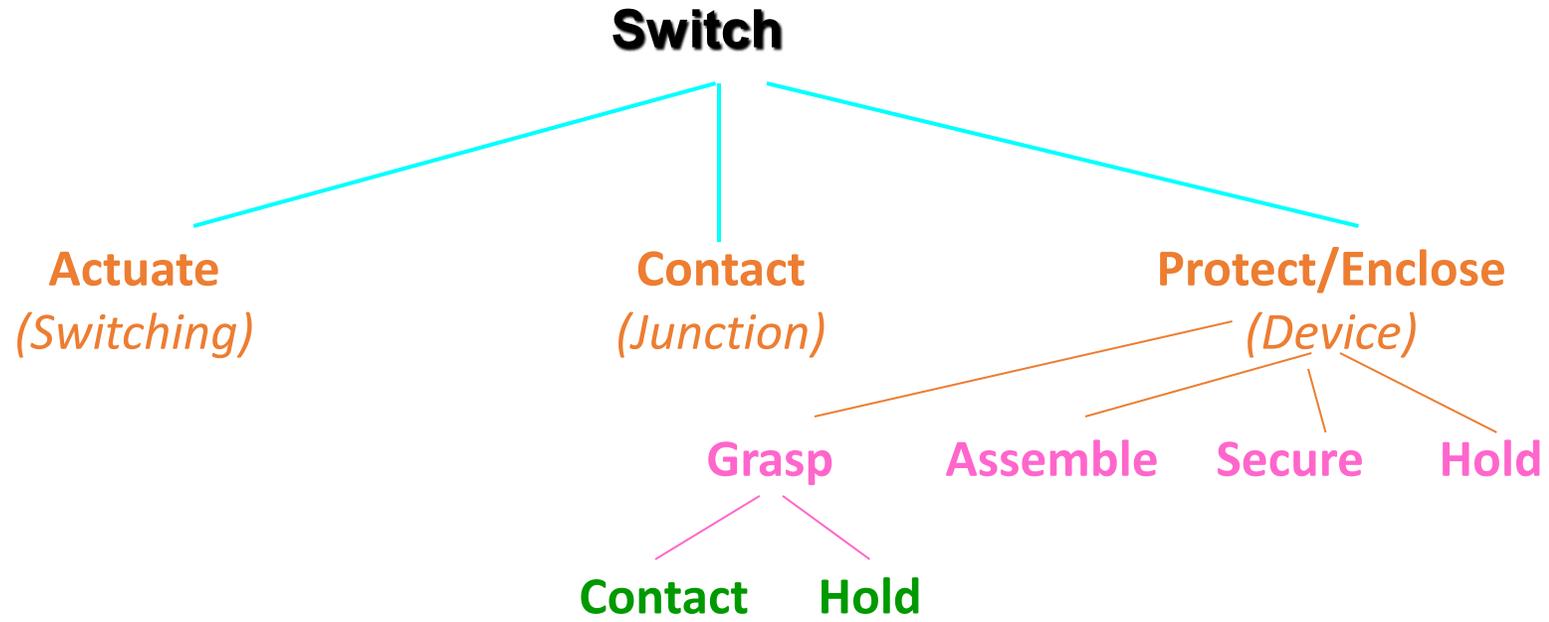
### FUNCTIONAL DECOMPOSITION

BREAKING DOWN THE OBJECTIVE INTO SUB AND SUB-SUB FUNCTIONS UNTIL ONE REACHES ATOMISTIC FUNCTIONS

# AID TO FUNCTIONAL DECOMPOSITION

MECHANICAL FUNCTIONS ARE DEFINED IN  
A LIST OF 46 ACTION WORDS AND AN  
AUXILIARY LIST OF 40 ANTICEDENT  
ADJECTIVES

# Functional Decomposition



Function Protect



Enclosed casing (concept)

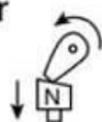
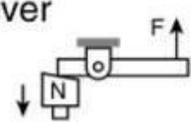
# The Innovation Process

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CONCEPT  
EVALUATION

# Concepts for an air freshener

Concepts Functions	Concept 1	Concept 2	Concept 3	Concept 4	Concept 5
<b>Secure dispenser</b>	Drop into cup-like holder	Push into metal spring clips	Velcro to structure	Hold with rubber bands	Hold with Magnets
<b>Activate device</b>	Motion sensor on device or door	Timer	Push button	Sound sensor	Smell sensor
<b>Indicate device is working</b>	LED light	Let movement of device indicate this	Liquid crystal display (LCD)	Emit Sound	Raise a flag when complete
<b>Depress/hold/release nozzle</b>	Motor-driven cam or arm 	Motor-driven lever 	Solenoid	Use motor to lower large weight onto nozzle	Slide wedge 
<b>Rotate dispenser</b>	Motor-driven rotating platform	Platform rotates on driven wheels	Wind and unwind wrapped cord	_____	_____
<b>Motor options</b>	DC motor	DC Gear motor	Servomotor	Continuous rotation servomotor	Stepper motor

# The Innovation Process

FUNCTIONAL  
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CONCEPT  
EVALUATION

# CONCEPT PRODUCT AND EVALUATION

POSSIBLE TO COMBINE CONCEPTS AND  
PRODUCE CONCEPT BASED PRODUCTS

THE CONCEPT PRODUCT EVALUATED  
THROUGH DECISION MATRIX

ELIMINATION ALSO POSSIBLE DUE TO  
INCOMPATIBLE CONCEPTS

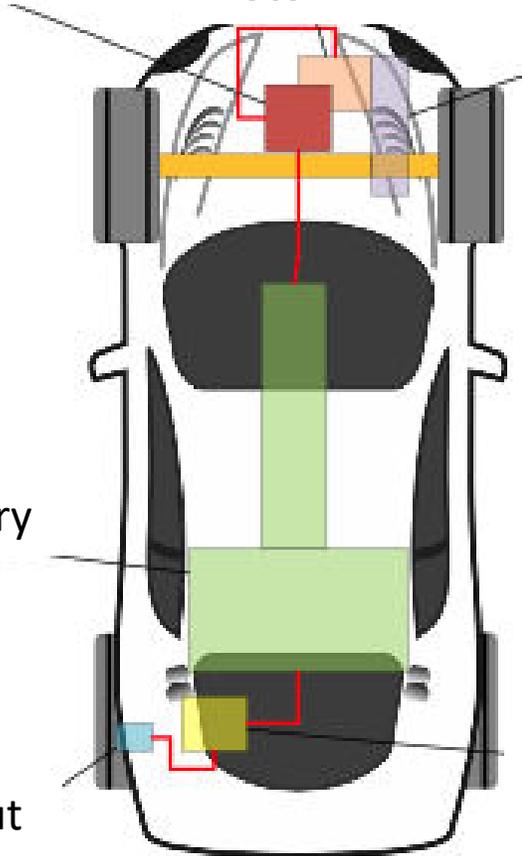
Power  
Electronics –  
AC/DC  
converter

Energy  
conversion –  
electric  
motor

Energy  
transfer –  
fixed engine  
gear box

Energy  
Storage –  
Li ion battery

Energy input  
– Plug in part



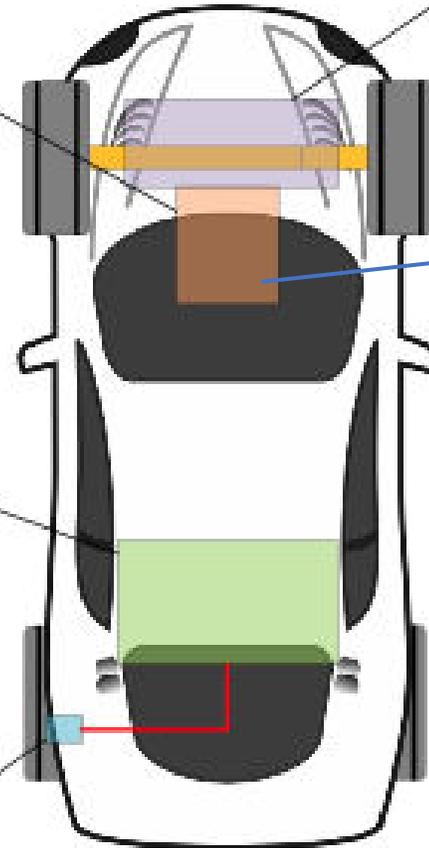
Energy  
conversion –  
IC Engine

Energy  
transfer –  
multispeed  
gear box

Carburetor  
/Fuel Injection  
Fuel converter

Energy  
Storage –  
Fuel tank

Energy input  
– tank lid



# The ultimate definition of innovation

Executing a concept which addresses a  
function and achieves value superior to all  
other competing concepts