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|  | **BAHRIA UNIVERSITY, (Karachi Campus)**  *Department of Software Engineering*  **Assignment 3 - Spring 2022** |  |

COURSE TITLE: Engineering Management COURSE CODE: **MGT-423**

Class: **BSE-IV (B)** Shift: **Morning**

Course Instructor: **Engr. Talha Bin Saeed** Time Allowed:  **1 Week**

Submission Date: **08/06/2022** Max. Marks: 05

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**[CLO4: 5 Marks]**

**QUESTION #01**

Evaluate the R&D process that is required to develop a better product?

**Ans:**

**Basic R&D process:**

The R&D may take months or years to yield fruitful results. Manufacturers of a variety of products utilize this process for [new product development](https://www.cleverism.com/product-development-overview-idea-product/) and innovation. Though each company or industry may have its own unique research methodology, a basic research process will form the framework for it.

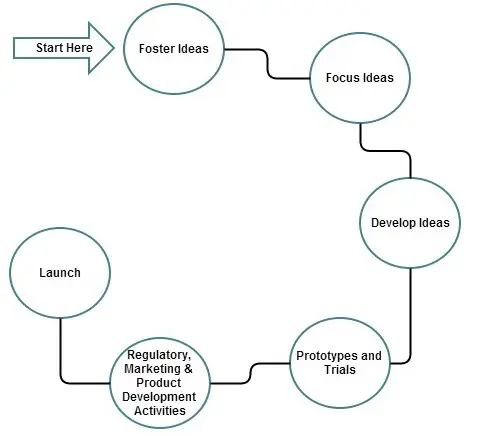
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Image source: cleverism.com

1. **Foster Ideas:**

At this point the research team may sit down to brainstorm. The discussion may start with an understanding and itemization of the issues faced in their particular industry and then narrowed down to important or core areas of opportunity or concern.

**For example**:

We want to make a watch but this level we solely focus on all possible ideas to make the watch and generally we gather all kind of information which is related to the manufacturing of the watch.

1. **Focus Ideas:**

The initial pool of ideas is vast and may be generic. The team will then sift through these and locate ideas with potential or those that do not have insurmountable limitations. At this point the team may look into existing products and assess how original a new idea is and how well it can be developed.

**For example:**

In this step we gather only relevant and important information to the manufacturing of the watch and i.e. it has previously a watch but how we can do it with to become a professional watch and in modernized form.

1. **Develop Ideas:**

Once an idea has been thoroughly researched, it may be combined with a market survey to assess market readiness. Ideas with true potential are once again narrowed down and the process of turning research into a marketable commodity begins.

**For example:**

In this step we analyze that if we launch this modernized form of watch how can we benefited from this and we calculate the expected budget which we can earn from its cost.

1. **Prototypes and Trials:**

Researchers may work closely with product developers to understand and agree on how an idea may be turned into a practical product. As the process iterates, the [prototype](https://www.cleverism.com/lexicon/prototyping/) complexity may start to increase and issues such as mass production and sales tactics may begin to enter the process.

**For Example:**

In this step we made prototypes of modernized form of watch and check how it would be look like and check error and faults through the prototype models.

1. **Regulatory Marketing and Product Development Activities:**

As the product takes shape, the process that began with R&D divides into relevant areas necessary to bring the research product to the market. Regulatory aspects are assessed and work begins to meet all the criteria for approvals and launch. The marketing function begins developing strategies and preparing their materials while sales, pricing and distribution are also planned for.

**Example:**

In this step we actually made the physical implementation of the watch and in this step we did different types of testing activities as well because we must insures over best product to the users market will get most of the benefit from it.

1. **Launch:**

The product that started as a research question will now be ready for its biggest test, the introduction to the market. The evaluation of the product continues at this stage and beyond, eventually leading to possible re-designs if needed  
At any point in this process the idea may be abandoned. Its feasibility may be questioned or the research may not reveal what the business hoped for. It is therefore important to analyze each idea critically at every stage and not become emotionally invested in anything.

**Example:**

In this step we launch over modernized watch in the market to get maximum benefit of it.

Also Our user expectations would be checked in this step if succeeded in this step then we get maximum benefit from our R&D process.

**Evaluation of R&D process that is required to develop better product:**

A formal R&D function adds great value to any organization. It can significantly contribute towards organizational growth and sustained market share. However, all business may not have the necessary resources to set up such a function. In such cases, or in organizations where a formal R&D function is not really required, it is a good idea to [foster an R&D mindset](http://www.hbs.edu/faculty/Publication%20Files/12-095_fb1bdf97-e0ec-4a82-b7c0-42279dd4d00e.pdf). When all employees are encouraged to think creatively and with a research oriented thought process, they all feel invested in the business and there will be the possibility of innovation and unique ideas and solutions. This mindset can be slowly inculcated within the company by following the steps mentioned below.

1. **Access Customer Needs:**

It is a good idea to regularly scan and assess the market and identify whether the company’s offering is doing well or if it is in trouble. If it is successful, encourage employees to identify reasons for success so that these can then be used as benchmarks or best practices. If the product is not doing well, then encourage teams to research reasons why. Perhaps a competitor is offering a better solution or perhaps the product cannot meet the customer’s needs effectively.

1. **Identify Objectives:**

Allow your employees to see clearly what the business objectives are. The end goal for a commercial enterprise is to enhance profits. If this is the case, then all research the employees engage in should focus on reaching this goal while fulfilling a customer need.

1. **Define and Design Processes:**

A definite project management process helps keep formal and informal research programs on schedule. Realistic goals and targets help focus the process and ensures that relevant and realistic timelines are decided upon.

1. **Create A Team:**

A team may need to be created if a specific project is on the agenda. This team should be cross functional and will be able to work towards a specific goal in a systematic manner. If the surrounding organizational environment also has a research mindset then they will be better prepared and suited to assist the core team when ever needed.

1. **Outsource:**

Whenever needed, it may be a good idea to outsource research projects. Universities and specific research organizations can help achieve research objectives that may not be manageable within a limited organizational budget.

**References:**

1. **Research and development overview and process:**

https://www.cleverism.com/rd-research-and-development-overview-process/