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

Name: Muhammad Junaid Saleem Qadri **Registration no: 70003**

[CLO4: 5 Marks]

QUESTION #01

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

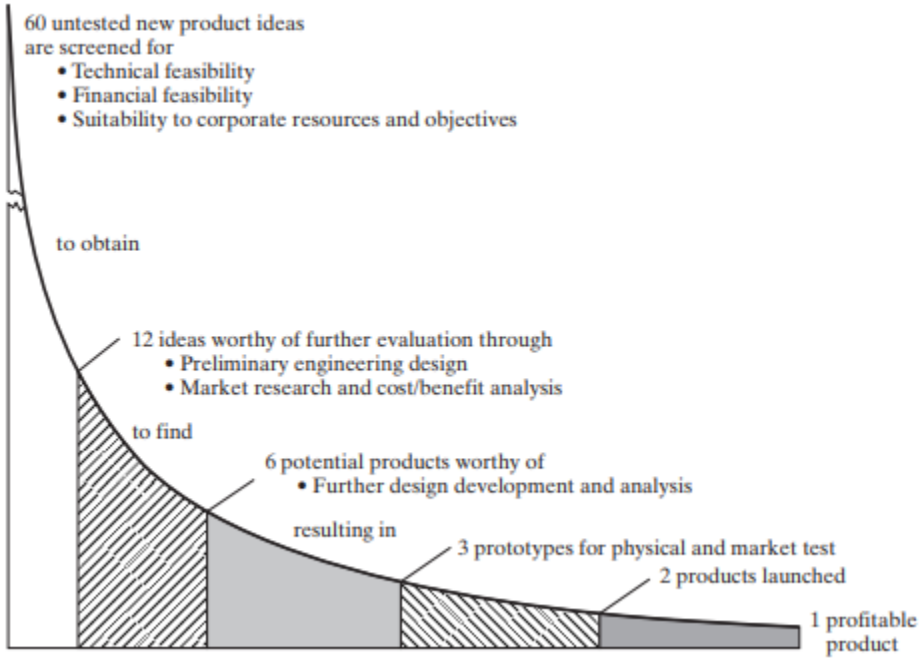
SOLUTION:

Research and development are commonly lumped together under the catchall term "R&D." To distinguish between them, let us adopt the definitions commonly used by the National Science Foundation:

Research, both basic and applied, is systematic, intensive study directed toward fuller scientific knowledge of the subject studied.
Basic research is . . . research devoted to achieving a fuller knowledge or understanding, rather than a practical application, of the subject under study . . . [although when funded by commercial firms, it] may be in fields of present or potential interest to the company.
Applied research is directed toward the *practical application* of knowledge, which for industry means the discovery of *new* scientific knowledge that has specific commercial objectives with respect to either products or processes.
Development is the systematic *use* of scientific knowledge directed toward the production of useful materials, devices, systems, or methods, including design and development of prototypes and processes.

60 ideas that generated from scientists, entrepreneurs or engineers need to be screened technical and financial feasibility. It is screened for to divide 60 untested ideas into screened 12 ideas which are capable for further evaluation through preliminary engineering design and benefit analysis which produce six potential products.

These six potential products capable for design development which obtain three prototypes for detailed physical and market testing, launched two products committed to full production. In which any product should be real market success.



To slash 60 crude ideas into 12 worthy of any significant evaluation requires a method that is quick and inexpensive. A common method is use of a simple *checklist,* in which the proposed product is given a simple judgmental rating (poor/fair/good/excellent or -2> -1> +1> +2, for example) for each of a number of characteristics. Seiler suggests, for example, scoring 10 items:

1. *Technical factors* (availability of needed skills and facilities; probability of technical success)
2. *Research direction and balance* (compatibility with research goals and desired research balance)
3. *Timing* (of R&D and market development relative to the competition)
4. *Stability* (of the potential market to economic changes and difficulty of substitution)
5. *Position factor* (relative to other product lines and raw materials)
6. *Market growth factors* for the product
7. *Marketability* and compatibility with current marketing goals, distribution methods, and customer makeup
8. *Producibility* with current production facilities and manpower

9. *Financial factors* (expected investment need and rate of return from it)
10. *Patentability* and the need for continuing defensive research

Reference

- Book