

3 Research and development 1

A Research and development (R and D) is the **search** for new and **improved** products and industrial processes. Both industrial firms and governments **carry out** R and D. **Innovations** in products or processes normally follow a path from **laboratory** (lab) idea, through **pilot** or **prototype** production and manufacturing start-up, to full-scale production and market introduction. There are two main types of research. **Pure** or **basic research** aims to clarify **scientific** principles without a specific end product in view; **applied research** uses the **findings** of pure research in order to achieve a particular commercial objective. **Development** describes the improvement of a product or process by **scientists** in conjunction with **engineers**. Industry spends vast sums to **develop** new products and the means to produce them cheaply, efficiently, and safely.

B Research is important in many disciplines and there are different *types of research* with different *research professionals*. The type of research reflects the environment and the objectives. In addition, many research words have entered the general language.

Types of research

academic research • applied research • clinical research
development and evaluation research • experimental development • experimentation
innovation • practical application • product development • pure basic research
pure research • strategic basic research

Research professionals

analyst • engineer • lab technician • research assistant • scientist • technician

General terms

breakthrough • carry out • feasible • feasibility • me-too product
patent • file* a patent • pipeline • pilot • prototype • register* a patent
technical know-how (TKH)

*file/register a patent

C Notice the stress in the word families below often changes:

| verb | noun (process) | noun (person) | adjective |
|-------------|------------------|---------------|----------------|
| 'analyse | an'a'lysis | 'analyst | ana'lytical |
| 'innovate | inno'vation | 'innovator | inn'ovative |
| de'velop | de'velopment | de'veloper | develop'mental |
| ex'periment | experimen'tation | ex'perimenter | experi'mental |
| in'vent | in'vention | in'ventor | in'ventive |



'What a breakthrough – we've bred the first germ we can attack with everyday household objects!'