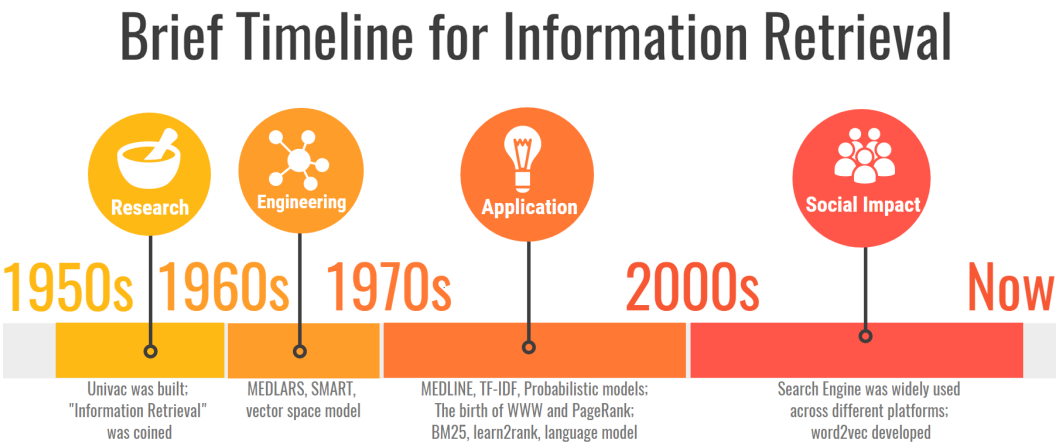
3.4.1 Information Retrieval

Information Retrieval (IR) is the task of retrieving information based on users' queries. Popular models include Boolean models, vector space models, probabilistic models, and language models. The most typical and popular application of IR is in search engines.



Current Stage: We place IR into the social impact stage, due to its enormous popularity and profound influence in everyday life through applications such as search engines, a background technology in the Internet era used by every cyber citizen.

Bottleneck:

- The access to databases and information is separated/limited within different companies, organizations or alliances.

Future:

- A high level of semantic understanding of the retrieval query/needs can be achieved so that users do not need to think much about the phrase they input.
- Unbounded access to all existing databases/information to form a unified IR system/search engine can be expected.
- There may be more intelligent ways to present query results instead of simply showing a ranked list.
- Integration of other techniques such as robotics and speech recognition can be anticipated. (A recent example is the IRGAN [27] which applied Generative Adversarial Networks for Information Retrieval)

Conferences:

- Special Interest Group on Information Retrieval (SIGIR)
- European Conference on Information Retrieval (ECIR)
- Conference on Information and Knowledge Management (CIKM)
- Text REtrieval Conference (TREC)
- NII Testbeds and Community for Information access Research (NTCIR)