

# Closing remarks

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## Where we started

“Google's mission is to organize the world's information and make it universally accessible and useful”  
[Google's mission statement, ~ 1998.](#)

“A memex is a device in which an individual stores all his books, records, and communications, and which is mechanized so that it may be consulted with exceeding speed and flexibility. It is an enlarged intimate supplement to his memory.” [Vannervar Bush, As we may think, Atlantic Monthly, July 1945.](#)

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## Where we have been: major themes

- Models
  - information contents and queries
    - text
    - Web
    - audio, visual media
- Algorithms and data structures
  - Search: Indexing
  - Large data sets: Distributed computation
  - Clustering
  - Sampling

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## Where we have been: additional core issues

- Humans add information
  - users: characteristics & feedback
  - authors: semi-structured content
- What is the corpus?
  - Web crawling
- Evaluation!

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## What we missed

- Where is the content?
  - Information caching
  - Content distribution networks
- Permanence of information

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## Where are “we” going?

- real semantic-based search
  - “ ... It is an enlarged **intimate** supplement to his memory.” Vannervar Bush
- search everything
  - multi-media
  - social networks
  - cloud computing
- Data explosion?
- Resource limitations
  - developing nations

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