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## CART 351 Reflection: *As We May Think*

*As We May Think* is an essay published in 1945 by Vannevar Bush. It starts by introducing the effects that the Second World War had on science, directing the world's scholarly resources towards the development of weapons of war, rather than the betterment of humanity. He outlines what science has done, from now simple technologies made to make surviving the elements easier, to 1945 where mechanized production has made telephone networks, and at a fraction of the labour needed to make such a thing before. One of the main reasons the essay is so significant is that it has been a direct influence for people including Douglas Engelbart in designing the technologies that modern computing uses today.

While the computers of today don't use microfilm like Bush's "memex", they do fill the niche that Bush sought to fill with it, easing the burden of memory and information retrieval. The memex's "associative indexing" is a concept that is key to this, since it's meant to more closely match the flow of the human brain. Traditional hypertext, while linking documents together, lacks the memory that the memex's associative indexing does. As recommendation algorithms and search engines become more sophisticated, computers seem to be approaching this kind of indexing, aggregated across multiple users, just as Bush envisioned encyclopedias with built in trail webs. These kinds of associative indexing schemes seem to be restricted to larger platforms however, since they have the resources in algorithm development, servers, and userbase to make them work. As well, they are not without criticism, as many of these algorithms are exploitable, encouraging people to make content to fit the algorithm.

The essay also touches on the possibility of devices that interact directly with the human senses, rather than being facilitated by mechanical means. While these technologies are in their beginnings, EEG to computer controls do exist and it's possible that these projects will develop into a new form of ubiquitous mechanism control, just as the computer has. Neuralink is one such company pursuing such a control, and while they promise such a revolution in how we interface with computers, their results remain limited.